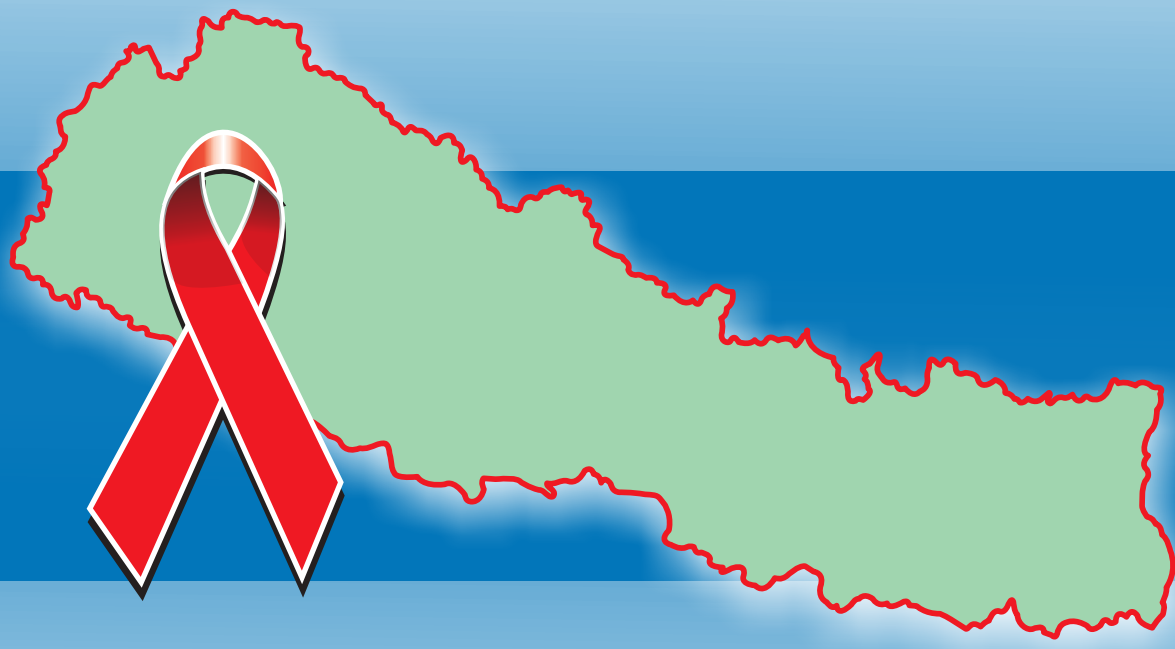
National Guidelines on
Case Management of
Sexually Transmitted Infections



Ministry of Health and Population
National Centre for AIDS and STD Control
Teku, Kathmandu
July 2009

National Guidelines on Case Management of Sexually Transmitted Infections

Revised Edition 2009

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Preface

This revised version of National Guidelines on Sexually Transmitted Infection (STI) Case Management 2009 has been produced by the National Centre for AIDS and STD Control (NCASC)/Ministry of Health and Population with the financial support of UNDP and the technical support of the STI Technical Advisory Group members from different institutions. The objective of revising this guideline was to provide an updated STI management guidelines to enable health professionals (medical doctors, nurses and paramedical staff) to manage STI cases with the syndromic or enhanced syndromic approach on the first visit of client at the service delivery site making use of the best available resources to make the STI prevention and control program successful.

I am fully confident that the present guidelines will be able to guide and facilitate all the STI service providers to deliver quality STI services with full confidence from their respective working facilities and thus it will broadly help the nation to achieve its goal to control STIs including HIV.

On behalf of NCASC, I would like to express my sincere thanks to the technical advisory group members Professor Dinesh Binod Pokhrel, Dr. Bimala Lakhey, Dr. Kamala Burathoki, Professor Bhaskar Mohan Mehar Kayastha, Dr. Amaya Maw-Naing, Dr. Rishi Bista, Dr. Durga Bhandari, Dr. Anil Kumar Das, Dr. Atul Dahal and Mr. Rajan Kumar Bhattarai for their hard work to revise and update this National Guidelines. My sincere thanks also go to Dr. Graham Neilsen of FHI-Asia Pacific for his laborious editing and advisory role in its development. I would also like to express my thanks to Dr. Anup Samal, Salina Tamang and Suman Shrestha from BDS and Mr. Gopal Panta of ASHA-FHI for their valuable inputs in their related topics. My thanks also go to Ms. Sujeeta Bajracharya, Mr. Rajesh Khanal and Mr. Prakash Pandey NCASC/UNDP and other supporting staffs for their supports and contribution in collecting the materials, documentation, and coordinating with the technical advisory group to organize several rounds of meetings for this purpose.

My special thanks also go to UNDP for its continuous technical, financial and managerial supports to NCASC and also for all the support received to revise the present STI guidelines.

Dr. Laxmi Raj Pathak
Director, NCASC

Stop AIDS, Keep the Promise.

Contents

Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
BDS	Blue Diamond Society
BV	Bacterial vaginosis
CA	*Candida albicans*
DHO	District Health Office
DPHO	District Public Health Office
EQC	External Quality Control
FHI	Family Health International
FPAN	Family Planning Association Nepal
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GNID	Gram-Negative Intracellular Diplococci
GUD	Genital Ulcer Disease
HBV	Hepatitis B Virus
HCP	Health Care Provider
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HPF	High Power Field
HSV	Herpes Simplex Virus
HW	Health Worker
IDU	Injecting Drug User
IEC	Information Education & Communication
IM	Intramuscular
IQC	Internal Quality Control
IV	Intravenous
KOH	Potassium Hydroxide
LGV	Lymphogranuloma venereum
mg	Milligram
mm	Millimetre
MO	Medical Officer
MoHP	Ministry of Health and Population
MSM	Men having Sex with Men
NCASC	National Centre for AIDS and STD Control
NGO	Non-governmental Organisation
NGU	Non-gonococcal Urethritis
NHTC	National Health Training Centre
NPHL	National Public Health Laboratory
OPD	Out Patient Department
P/V	Per vaginum

PID	Pelvic Inflammatory Disease
PMNL	Polymorphonuclear leukocyte
RA	Risk assessment
RPR	Rapid Plasma Reagin
RTI	Reproductive Tract Infection
SGS	Second Generation Surveillance
STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infection
SW	Sex Worker
TG	Third Gender
TPHA	*Treponema pallidum* Haemagglutination Assay
TPPA	*Treponema pallidum* Particle Agglutination Assay
TUTH	Tribhuwan University Teaching Hospital
TV	*Trichomonas vaginalis*
TWG	Technical Working Group
UDS	Urethral Discharge Syndrome
UNDP	United Nations Development Program
USAID	United States Agency for International Development
VDRL	Venereal Disease Research Laboratory
VDS	Vaginal Discharge Syndrome
WHO	World Health Organization

Introduction

Background Information

STIs are one of the major public health problems in all countries, more so in developing countries where access to adequate diagnostic and treatment facilities are very limited or non-existent due mainly to poverty and ignorance. Sexually transmitted infections (STIs) are among the most common causes of illnesses in the world and have far reaching health, social and economic consequences. Timely diagnosis and treatment of STIs are important because of their magnitude, potential complications and their interaction with HIV.

STIs are caused by more than 30 different pathogens and identification of most of these pathogens by laboratory tests is not simple and feasible in district/zonal health facilities. Thus syndrome-based approach to provide health workers a tool to improve the diagnostic process and enable them to provide prompt treatment to the STI patients aimed to be a very cost effective approach in the resource poor settings was developed by World Health Organization (WHO) and has still been effectively implemented in many developing countries through out the world.

All STI patients should understand that majority of STIs are preventable and that prevention may be achieved either by abstaining from other sexual activity besides having sex with an uninfected lifelong mutually faithful partner or by using condoms correctly and consistently during every sex act. The objective of treatment of STI is to prevent complications arising from STIs and to prevent transmission of STIs and HIV in the community. The majority of the complications of STIs however are preventable if the patient is diagnosed and treated properly and in time.

STI prevention and control programs have three main objectives they are: **1.** preventing the development of sexually transmitted diseases, complications and sequelae; **2.** interrupting the transmission of STIs; and **3.**reducing the risk of HIV infection. Good STI incidence and prevalence data can contribute significantly to tracking trends in risky sex and potential exposure to HIV infection, and to monitoring the success of measures aimed at promoting safe sex.

Realizing the importance of controlling STIs as a major public health intervention and in view of making the syndromic approach a standard practice in the health institutions of the country, NCASC had developed the first national guidelines on STI management in 1995 and was successively revised in the year 1997, 2001, 2004 and 2006.

The present document (2009) is the revised version of National guidelines on STI case management developed by NCASC for the treatment of persons who have sexually transmitted infections (STIs). The content and the information quoted on it update the National Guidelines on Sexually Transmitted Infection Case management, 2006. This guideline is intended to assist the health-care providers to provide effective treatment of STIs. This will not only have a critical role in preventing and treating sexually transmitted infections (STIs) but also to prevent HIV infection occurring through sexual route. Although main emphasis in this guideline is given to the treatment and prevention strategies of STIs but some basic diagnostic recommendations, STI reporting and monitoring activities are also included here. Also included in these Guidelines is STI and HIV, STI management among MSM/TG and Syphilis/RPR management.

The significance of STIs

STIs (Sexually Transmitted Infections) remain one of the major causes of acute illness, morbidity with severe and far reaching health, social and economic consequences for millions of men, women and children all over the world. It is estimated that after maternal causes, STIs are responsible for the greatest number of healthy life years lost among women in developing countries. Although STIs are primarily transmitted through sexual intercourse, it can also be transmitted from mother to child during pregnancy and childbirth, and also occasionally through blood and blood products.
Because of the rooted stigma and discrimination associated to STI, failure to diagnose and treat STIs in time may result in serious complications and sequelae including infertility, foetal wastage, neonatal infections, ectopic pregnancy, cervical cancer and even death. Moreover, STIs also account for massive expenditures and thus have enormous socio-economic impact (WHO).

Global STI situation

STIs continue to be a major and growing public health problem in many parts of the world, especially in developing countries with an estimated annual incidence of 340 million new cases of syphilis, gonorrhoea, chlamydia and trichomoniasis occur in men and women aged 15–49 (WHO, 1999).

The annual incidence of the four most common curable STIs in the world is estimated as Syphilis (12 million), Gonorrhoea (62 million) Chlamydial infections (92 million) and Trichomoniasis (173 million) in the world (WHO, 1999). The increasing mobility of people across the world, urbanization, poverty, socio-demographic changes especially in developing countries, sexual exploitation of women and changes in sexual behaviour are some of the factors which have placed an ever increasing proportion of population at risk for STIs (Dam et al, 1998; WHO 1999)

The global HIV/AIDS epidemic has focussed more attention on STI prevention and

control due to the evidence of strong correlation between the spread of STIs and HIV transmission. Both ulcerative and non-ulcerative STIs have been recognized to increase the risk of sexual transmission and acquisition of HIV (WHO). Scientific evidence suggests that 80% of HIV infections are spread by the sexual route and there is interrelationship between HIV and STI (Adler, MV, 1996). For example, in Sub-Saharan Africa 70% of HIV infection was found in patients with an STI and likewise 15-30% of STI patients in Thailand were found to be HIV positive (Over and Piot, 1996).

The epidemiology of STIs in the developing countries is characterized by high incidence and prevalence, high rates of complications, increasing antimicrobial resistance due to inadequate treatment and increasing risk of transmission and acquisition of HIV infection (WHO, 1999). The lists of underlying factors contributing to the high STI prevalence in developing countries are as follows (Mayaund and Mabey 2004):

- Demographic factors (large sexually active youth population)
- Urban migration with socio-cultural changes
- Migration and displacement (labour, wars, natural catastrophes)
- Increased levels of prostitution due to economic hardships
- Multiple and concurrent sexual relationships
- Lack of access to effective and affordable health services
- High prevalence of antimicrobial resistance for some pathogens

Global STI Strategy (2006 – 2015)

World Health Assembly endorsed the global strategy for the prevention and control of STIs in May 2006. The strategy urges all countries to control the transmission of STIs by implementing a number of interventions, including the following:

1. Prevention by promoting safer sexual behaviors;
2. General access to quality condoms at affordable prices;
3. Promotion of early recourse to health services by people suffering from STIs and by their partners;
4. Inclusion of STI treatment in basic health services;
5. Specific services for populations with frequent or unplanned high-risk sexual behaviors - such as sex workers, adolescents, long-distance truck-drivers, military personnel, substance users and prisoners;
6. Proper treatment of STIs, i.e. use of correct and effective medicines, treatment of sexual partners, education and advice;
7. Screening of clinically asymptomatic patients, where feasible; (e.g. syphilis, chlamydia);

8. Provision for counselling and voluntary testing for HIV infection;
9. Prevention and care of congenital syphilis and neonatal conjunctivitis; and
10. Involvement of all relevant stakeholders, including the private sector and the community, in prevention and care of STIs.

STI situation in Nepal

Nepal being landlocked and one of the least developed countries in the world with immense problems such as poverty, illiteracy, ignorance and youth unemployment, has all the predisposing factors for the spread of STIs. Research by Zeeb (1996) estimated a total of 6000–8000 annual STI clients in Kaski district alone.

Detail nationwide, STI data are scarce and non-specific. The annual National RTI/STI/HIV data are collected from all the health service facilities by HMIS (Health Management Information System) of the Department of Health Services. These data combine cases of STIs/RTIs and HIV without specific details of the types of STI. According to the Annual Report of HMIS (2064/65 BS) a total of 28,229 STIs and 1,640 HIV/AIDS cases were reported out of 12,137,059 OPD cases.

Integrated Biological and Behavioural Surveillance Survey (IBBS) have been carried out in the past years through National Center for AIDS and STD Control (NCASC) with technical support from FHI /USAID in different Most at Risk Population. Some of the important informations received from the different rounds of IBBBS conducted among different groups of MARPS have revealed the following information.

In 22 Terai districts, among FSWs, Prevalence of current syphilis was 5.0 percent, gonorrhea was 9.8 percent and chlamydia was 18.3 percent (IBBS 2006). In Kathmandu valley, 42 percent of FSWs were having at least one STI symptom and prevalence of syphilis among them was 1 percent (IBBS, 2008). In Pokhara 30 percent of the FSW reported to have at least one symptom of STI and 1.5 percent had syphilis (IBBS , 2008). Only 4.7 percent male labor migrants to India in western and 10 percent in far western district reported to have at least one symptom of STI in the last one year (IBBS 2008). Prevalence of current syphilis among the Truckers in Terai highway districts was 1.8 percent (IBBS 2006). Among Men who have Sex with Men (MSM) in Kathmandu prevalence of syphilis was 2.3 percent; rectal Gonorrhoae was 8.1 percent and Chlamydia was 3.6 percent (IBBS 2007).

Preliminary findings from IBBS 2009 (NCASC/FHI) among FSWs show that prevalence of current syphilis is 3.5% and Gonorrhoea 1.5% and Chlamydia 8.3%. Similarly prevalence of current syphilis among Truckers is 0.3%

Process data reported to ASHA Project from Integrated Health Service centres operated by different NGOs in 26 districts through out the east west highway,

Kathmandu and Pokhara showed that 89.5 percent of FSWs were diagnosed with any STI. Out of diagnosed cases during Oct 2006 to May 2009, 41.7 percent were diagnosed as having cervicitis, 12.6 percent having trichomonus infections and 4.8 percent were found RPR reactive The same clinical data shows that 15.4 percent of clients of FSW were diagnosed having any STI. Among diagnosed cases 47.8 percent were diagnosed as Urethral discharge Syndrome (UDS), 15.9 percent diagnosed with Genital Warts and 3.66 percent were found to be RPR reactive.

The National Response on STI Case Management

The National STI Control Programme in Nepal was initiated in 1994. With support from the European Commission, and technical backing from the University of Heidelberg (Germany), the program strengthened national capacity in STI case management as one of its principal activities. Program outputs include the publication of the National Guidelines for STI Case Management; upgrading of the laboratory diagnostic capacity in Government and private clinics; and widespread training of health workers in peripheral settings to enable them to use the WHO syndromic algorithms.

Use of an appropriate standardised national protocol for STI management is strongly recommended at all levels of the health services in order to ensure adequate treatment. Such standardised protocol also helps to facilitate the training and supervision of health providers, and to delay the development of antimicrobial resistance (WHO). The first National STI Case Management Guidelines were developed in 1995 as standardised protocols to be used for STI case management at all levels of health services in Nepal based on the WHO-recommended syndromic approach with modification to suit the local needs and the latest revision was made in 2006. The National STI Case Management Guidelines offers a comprehensive package for Health Care Providers including all the essential steps for the management of STI cases.

Training is another component to strengthen STI response of the country. First national training Manual on STI case management was developed by NCASC in 2006 with the technical and financial support of FHI /Nepal and USAID Nepal. Since then a reasonable number of health care workers are being trained using this training manual. A refresher training curriculum has also been developed in 2008.

National STI service review was conducted in November 2006, it was the first national review that came out with the recommendations specific to STI services in the country, one of which was regular update and revision of national guidelines. National HIV/AIDS Strategy (2006-2011) considers STI management as one of the HIV prevention strategy and emphasizes on strengthening management and control. A system of STI drug supply to STI service facilities has been established by NCASC through the National HIV/AIDS logistic system. To further strengthen and facilitate

the STI services NCASC has also developed the COGS (Clinic operational guidelines standards).

Public health significance of STIs

Sexually transmitted infections (STIs) remain a public health problem of major significance in most parts of the world and, if not diagnosed and treated early, may result in complications and sequelae like infertility, ectopic pregnancy and cervical cancer. Like HIV, STI is also a health problem among the same group of people who are considered MARP for HIV, as the risk factors for both infections are same. Considering the concealed nature and stigma related to STI, the person suffering rarely seeks the medical help. STI like gonorrhoea and chlamydial infection are asymptomatic in majority of females. Similarly other STI also may remain unnoticed, thus increasing the chance of transmission from one person to another without being noticed. As STI increase the risk of HIV transmission, effective treatment of STI is also one of the strategy for HIV prevention.

Prevention of sexually transmitted infections

The objectives of STI prevention and control traditionally are:

- Interrupting the transmission of sexually acquired infections primarily through the targeted intervention among MARPS
- Preventing development of diseases, complications and sequelae
- Reducing the risk of HIV infection
- Promoting safer sexual behaviour

These objectives require *primary prevention*, directed at reducing the incidence of disease, and *secondary prevention*, directed at reducing prevalence by shortening the duration of disease and as a result preventing further spread and reducing the probability of complications or sequelae.

Primary prevention activities are:

- Abstinence
- Promotion of safer sexual behaviour including consistent and correct use of condoms
- Provision of condoms at affordable prices
- Making the condom accessible
- Reducing rates of partner change by being faithful to only one sexual partner

Secondary prevention activities are:

- Promotion of health care seeking behaviour directed particularly towards those at

increased risk of acquiring STIs including HIV infection.
- The provision of accessible, effective and acceptable services which offer diagnosis and effective treatment for both symptomatic and asymptomatic patients with STIs and their partners.

STI in Nepal is concentrated in the certain risk groups of people like sex workers (male and female) and their clients, MSM and TG. So preventive and curative activities should also be focused in those groups where STI is concentrated. This approach minimizes the cost of the national program as well as results in effective outcome.

Objectives of the STI Case Management Guidelines
The **objectives** are to:

- provide comprehensive guidance on the management of STIs
- make recommendations on the best drugs to use in STIs
- describe requirements for record keeping and surveillance in STI Case Management
- provide guidance on supporting activities such as clinic equipment, infection control, etc.

These guidelines are intended for the use in any setting in Nepal by health care providers (HCPs) who may be consulted by patients with symptoms suggesting STI or who are worried that they may have acquired STI infection.

All Health Care Providers (HCPs) are trained health care workers in the public or private sectors but most of them may not have access to the diagnostic support (laboratory investigations) which could facilitate them to manage STIs to some extent. The present guidelines is prepared to fill the gap and update the HCPs with relevant STI-related knowledge and skills. However, to standardize the STI services development/revision of training curricula, clinic operational guidelines, flow charts and STI related IEC materials should also follow these national guidelines.

WHO has strongly recommended that routine STI care should be delivered through general health care services in order to ensure easy access by patients. This means that the majority of those cared for in the public sector will be seen at first level health care where resources and expertise are usually limited. A simplified version of these guidelines, therefore, has also been prepared in Nepali for these HCPs.

Since mere syndromic approach does not reach a large number of asymptomatic STI patients and thus are left untreated, NCASC has adopted a policy to provide modified syndromic approach called 'Enhanced Syndromic approach' reaching the high risk but

also to asymptomatic population through risk assessment and screening them by history, examination and basic lab tests where the facility exists.

Methodology applied to revise the Guidelines

Based on the recommendations made in the national action plan by the experts involved in the National STI Review 2006, NCASC took initiation to revise the guidelines with updated information on STI management. It is prepared with the consultation and support of the National STI Technical Working Group (STI TWG) comprising of professionals knowledgeable in the field of STIs/RTIs. The TWG systematically reviewed the evidence and publications on other similar guidelines, recent journal articles, and study reports about the major STIs.

The information gathered were summarized in a draft document which was further assessed by the members of STI TWG and finally disseminated to the group of policy makers and the major service providers. After incorporating their logical suggestions/recommendations, the final version of the guidelines is prepared.

2. STI Case Mangement Process

Accessible, effective, affordable and acceptable STI Case Management is the basis of STI control.

STI Case Management is the overall package of effective and acceptable care that should be accessible to any individual who thinks that he or she may have a sexually transmitted infection.

The objectives of STI case management are to:

- provide treatment
- obtain cure
- reduce infectivity
- prevent or at least reduce future risk-taking behaviour and
- make sure sexual partners are appropriately treated.

To achieve the objectives of appropriate STI case management the patient must receive:

- a correct **diagnosis**
- effective **treatment**
- education and counselling or risk reduction including promotion and provision of **condoms**
- encouragement to notify sexual **partner(s)** of their need for treatment and
- clinical **follow-up** and referral where necessary

2.1 Interaction between patient and health care provider

The interaction between patients and HCPs is particularly important in the STI consultation. Unless a mutually respectful and trusting relationship is established, the information needed to make an accurate diagnosis will not be obtained; the essential education will fail; sexual partners will not be encouraged for treatment; and the patients' compliance with treatment will be poor.

The setting

The setting should be as clean, pleasant and comfortable as possible. Privacy is essential and must both allow discussion between the HCP and patient which cannot be overheard and examination which cannot be seen by others.

A seat must be provided for the patient. Good lighting is necessary for examination. An examination table is required for examination of both men and women.

The approach

It is very important to offer user-friendly behaviour and services. If the HCP is seen as unapproachable, superior and judgemental, the history from the patient may at best be incomplete and, at worst, actually misleading. The uncomfortable patient will be reluctant to cooperate in examination, less likely to be compliant with treatment or to follow prevention advice. **Box-1** presents a way of remembering the essentials of a user-friendly approach using the word WELL.

Box-1

WELL !

Welcome your patient. Greet patients warmly, offer a seat, and sit near enough to talk comfortably and privately. Have a welcoming tone of voice - speak to the patient as you would to a friend.

Encourage your patient to talk. Look at the patient as you talk, ask questions, nod as they speak, say 'mmm hmmm' or 'tell me more about that. These 'encouragers' show you are listening and are interested.

Look at your patient. Looking at patients helps them to talk more comfortably. Have a warm and friendly facial expression.

Listen to your patient. Listen carefully to what your patient has to say. Use the 'encouragers' to show you are interested in their story.

In order to establish a user-friendly atmosphere, the following points must be kept in mind.

Avoid giving the impression of being in a hurry

Health workers often have to work under considerable time constraints. There are many patients to be seen and time is short. It will be very difficult, however, to get a cooperative patient if the HCP is in a great rush. Sufficient time must be allowed for all components of case management.

Be confidential

STI patients are usually very worried that other people will 'find out'. Volunteer at an early stage that any thing the patient may say is entirely confidential. Give an assurance at an early stage that no one else will be told - not the spouse or sexual partner; not an employer; and not the authorities.

Be tolerant

The HCP may or may not approve of the patient's actions or behaviour. The HCP's

values may be quite different from those of the patient. This should not influence their attitude towards the patient or the service provided in any way.

Always remember that the role of a HCP is to cure and comfort, not to judge and never to punish.

Avoid giving the impression of embarrassment
It is usually difficult to talk about sexuality and sexual behaviour. For cultural and religious reasons, this is particularly so in Nepal. But if the HCP is embarrassed, the patient will be doubly so. The HCP must be professional in approach, able to talk easily and in an unembarrassed manner about sexual matters and behaviour. It is usually easier to talk to someone of the same sex and patients will often choose their health care worker with this in mind. Consider referring the patients to someone of their own sex if this seems important.

Communicate with patients
Share information with patients clearly and being respectful and non-judgemental in a language that they can easily understand. Although the time available for establishing a trusting relationship may be limited, effective communication helps clients to talk more comfortably and this actually saves time.

2.2 Diagnosis

It is necessary to take a history and examine all patients to make an accurate diagnosis.

2.2.1 History taking
History taking or getting information about the present complaints is the first and most important step for the diagnosis of STIs. It is important to remember that the questions asked are very sensitive, hence always talk to the patient in private where you cannot be overheard.

The following are the basic questions to be asked.

- What are your symptoms?
- When did they start?
- When and where did you last have sex?
- Please describe what happened.
- Who have you had sex with since .....?
- Did you use a condom?
- Number of contacts
- History of contact with partners other than spouse if married

The HCP may wish to elaborate on these depending on the circumstances and the answers. Additional useful information includes:

- Connection of symptoms in relation to sexual contact
- Similar symptoms in sexual partner
- Past history of similar symptoms or of diagnosed STI with dates and treatment
- Recent antibiotics
- Menstrual and pregnancy history
- Contraception
- History of sexual assault

With women, it may be necessary to make a **'RISK ASSESSMENT'** of infection - to decide the **probability** of that woman being infected by certain STI (cervicitis). This is further discussed under case management of vaginal discharge in section 3.

2.2.2 Examination

Examination should take place in private and with good lighting. In addition to ano-genital examination, examine, if possible, the whole body for skin rashes and always if syphilis is suspected. Look in the mouth for ulceration. If laboratory support is available, specimens from women will be taken during this examination. A nurse or paramedic can take those specimens after the examination. The principles for examination of men and women are shown in **Box-2** and **Box-3**.

Box-2

EXAMINATION OF THE MALE PATIENT

- Get the patient to take trousers and underwear down
- **Look** at the penis with the foreskin forward and pulled back
- Get the patient to **show** any discharge by 'milking' the penis; note color and consistency of the discharge
- **Look** at the groin, pubic hair region, the perineum, the peri-anal region and the anus for warts, ulcers, scabies, pubic lice and nits
- **Palpate** the groin and testicles for swelling or tenderness.

Note:

- Genital and body rashes including on palms and soles, ulcers, swollen glands in the groin, warts
- Sores, ulcers
- Discharge from the urethra, oral and anal areas

Box-3

EXAMINATION OF THE FEMALE PATIENT

- Get the patient to **remove** her underclothes and remain draped and expose the necessary parts during examination.
- **Examine** the patient on a couch or table on her back with the knees flexed and the legs apart.
- **Look** at the external genitalia, perineum, perianal, anal region, oral cavity and body including, palms and soles
- **Look** for skin rashes, warts, ulcers, scabies, pubic lice & nits
- **Palpate** the groins (for swellings)
- **With** a gloved hand, separate the *labia majora*. **Look** at the *labia minora*, separate them and **look** at the *introitus*.

If you have a sterile bivalve ('duck billed') speculum

- With the other hand, insert the speculum lubricated with water based lubricants and open it. Locate the cervix between the blades
- **Look** at the cervix and its opening (cervical os), the vaginal vault and, as you remove the speculum, look at the walls of the vagina

Note:

- Warts
- Sores and ulcers
- Colour, quantity and smell of vaginal discharge
- The character of the exudate from the cervix - is it clear and mucoid, mucopus or frank pus? Does it contain blood?

Now do a bimanual examination

- Insert two fingers high up into the vagina
- Press the supra pubic region of the abdomen gently with the other hand so as to feel, as far as possible, the uterus, cervix, fornices for any mass or tenderness between that hand and the two fingers

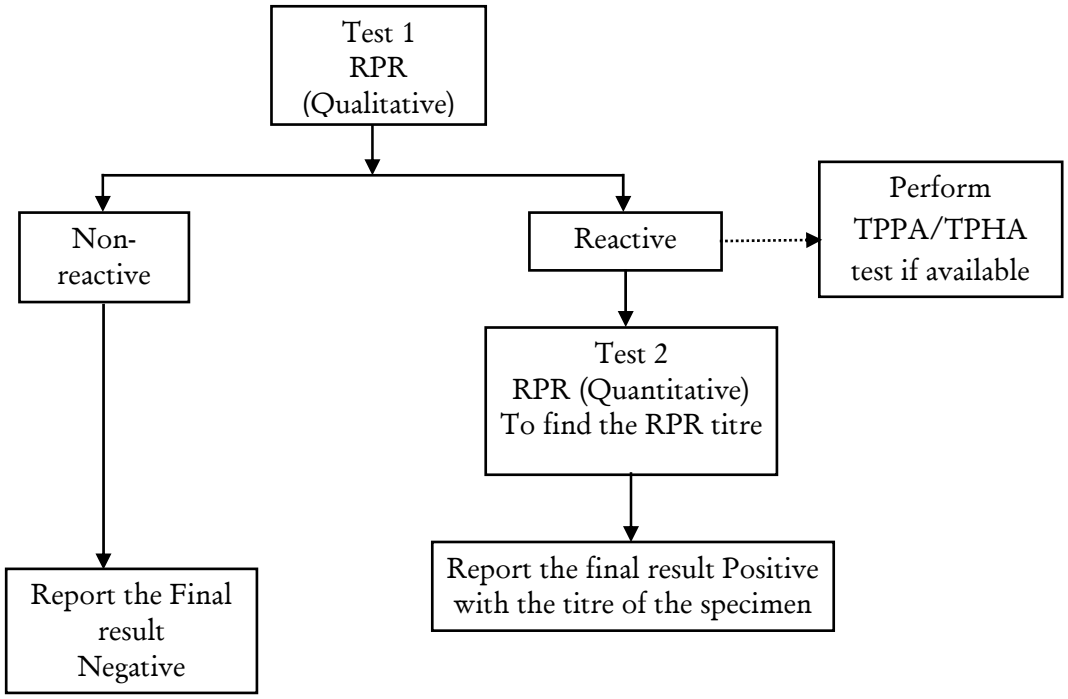
Note:
The tenderness of the organ, swelling or mass or pain on moving the cervix with your fingers is evidence of pelvic inflammatory disease (PID).

2.2.3 Laboratory investigations

Whenever syphilis testing is available, a specimen of venous blood should be taken in a test tube. A five ml blood specimen is usually considered adequate. A clotted specimen is required and the container should not contain anticoagulant. Please note that a VDRL or RPR test can remain positive for a few months to some years even after proper treatment while the TPHA or TPPA test may remain positive even lifelong after infection with syphilis whether the patient is treated or not.

Fig. 1

Syphilis Testing Algorithm for Initial Visit of a Client to a STI clinic



For follow-up visits of clients who have already received treatment for syphilis, only quantitative RPR testing will be performed and RPR titre will be recorded and reported.

Box-4 and **Box-5** describe the method of taking specimens from men and women for laboratory investigations.

Box-4

TAKING SPECIMENS FROM MALES FOR LABORATORY INVESTIGATIONS

Taking a smear from the urethra (microscopy of urethral specimens is NOT necessary if syndromic management of urethral discharge is provided)

- Have the patient retract the foreskin. If necessary, ask the patient to milk the urethra to express discharge.
- Obtain a specimen by applying a glass slide to the discharge or by using cotton tipped swab or a loop.
- If frank pus is not present, obtain a urethral specimen using a platinum loop or a fine swab - insert 2 mm into the urethra and rotate gently.
- Smear the material thinly onto a clean glass slide and perform Gram staining for microscopic examination.

Interpretations:
Non-specific urethritis: Gram stain of urethral secretions demonstrating ≥ 5 polymorphonuclear leukocytes per oil immersion field.

Gonococcal urethritis: Gram stain of urethral secretions demonstrating the presence of Gram-negative intracellular diplococci within polymorphonuclear leukocytes.

Note: A slide should be examined for at least 2 minutes before concluding it does not contain any Gram-negative intracellular diplococci.

Box-5

TAKING SPECIMENS FROM FEMALES FOR LABORATORY INVESTIGATIONS

A bi-valve vaginal speculum to be inserted into the vagina and the cervix visualised as a part of the examination and collect two specimens using two swabs separately one from posterior fornix of vagina and the bother from cervical os after moping the external os with a cotton swab in a sponge holding forceps for the following laboratory investigations.

Vaginal specimen

Wet Mount

Mix the vaginal specimen collected with the swab into one or two drops of normal saline on a glass slide and cover with a cover slip. The slide is immediately examined under low and high power of microscope for motile trichomonads suggesting *Trichomonas vaginalis*, clue cells (vaginal epithelial cells coated with coccobacilli) seen in Bacterial Vaginosis.

(**Clue cells:** In bacterial vaginosis, *Lactobacillus* species (Gram-positive slender rods) are replaced by a mixed flora of anaerobic bacterial morphotypes and *Gardnerella vaginalis*. Clue cells are squamous epithelial cells covered with many small cocco-bacillary organisms (Gram-variable on Gram stain), giving a stippled, granular appearance, the edges of these epithelial cells are not clearly defined, because of the large number of bacteria present. In most patients with bacterial vaginosis, a mixture of exfoliated vaginal epithelial cells and 20% or more clue cells will be seen. The adhering bacteria on the cells are predominantly *G. vaginalis*, sometimes mixed with anaerobes.)

Whiff Test

During the preparation of the KOH slide, when 1-2 drops of 10% KOH is added to vaginal specimen, a fishy or amine odour comes out, suggestive of bacterial vaginosis.

KOH Mount

A specimen of vaginal discharge is placed on a slide and 1-2 drops of 10% KOH (potassium hydroxide) are added, covered with cover slip and examined under low power of the microscope to detect candidal pseudohyphae, mycelial tangles and spores.

Gram Staining

A smear will be prepared on a glass slide from the vaginal specimen; the smear will be Gram-stained and observed under the microscope for detection of "clue cells". Cocco-bacillary organisms of clue cells will appear Gram-variable on Gram stain.

Box - 6

AMSEL'S DIAGNOSTIC CRITERIA FOR BACTERIAL VAGINOSIS*

1. Thin homogenous discharge*
2. Positive "Whiff" test*
3. Positive pH test*
4. "Clue cells" present on microscopy**

* If three of four criteria are met; it establishes accurate diagnosis of bacterial vaginosis in 90% of affected women

** Highly significant criterion

Endocervical specimen

- Clean the **cervical *os*** carefully with cotton swab on sponge holders
- Insert a sterile cotton swab into the **cervical *os*,** rotate gently and collect the specimen

Gram Stain

Make a thin smear of material from the **cervical os** on a glass slide; air dry it and Gram stain.

Interpretations

Mucoprulent cervicitis (MPC)

Gram stain of cervical secretions demonstrating ≥ 20 PMNL/OIF (Polymorphonuclear leukocytes per oil immersion field)

Gonococcal cervicitis

Gram stain of cervical smear demonstrating the presence of Gram negative diplococci within and outside the polymorphonuclear leucocytes.

Note: A slide should be examined for at least 2 minutes before concluding it does not contain any Gram-negative intracellular diplococci.

Gonococcal culture for selected referral hospital

- Inoculate the material collected from **cervical os** on to a GC culture medium plate or into transport media depending on local laboratory condition.
- If a chlamydia test is available, collect a special specimen from within the **cervical os** according to the instructions in the particular test methods.

Note: During the sample collection, the use of antiseptics and analgesics should be avoided since these may inhibit culture of gonococci present on the cervix. The speculum may be moistened with warm water.
Ph test is generally not done in the STI service facilities in Nepal

2.2.4 Making a diagnosis

It is recommended that **syndromic approach** for STI diagnosis and treatment should be used in all the health facilities where there is no laboratory facility and **enhanced syndromic approach** is used in those having laboratory facility. Syndromic diagnosis depends on identifying consistent groups of sign and symptoms (syndromes) and providing effective treatment for all the organisms known to cause them.

Aetiological diagnosis with identification of the limited causative organism (or their antibodies) is possible in some government hospitals and NGO run STI clinics in Nepal.

2.3 Principles of treatment

Effective treatment is an absolute requirement in an STI programme.

It is important that the treatment provided to STI patients is effective. Ideally, the treatment selected should offer at least a 95% cure rate. Unfortunately, the low cost antibiotics and chemotherapeutic agents which used to provide high cure rates no longer do so; in part, due to inappropriate use and self medication.

Treatments which offer lower rates of cure not only increase the prevalence of resistant strains and rapidly limit the usefulness of these drugs but undermine confidence in the HCPs. Failure to cure patients and relieve symptoms encourages patients to go elsewhere next time - perhaps to a less suitable source of care. It carries the risk of sub-curative states and carrier states, further transmission, and an increase in complications and long term sequelae.

All HCPs should follow the recommendations for treatment contained in these guidelines. It will be important to explain to patients that the treatment is the best and the only suitable one even though it might be expensive. It must be taken as directed and the course completed.

Box -7

SELECTION OF STI DRUGS

STI Drugs should be selected using the following criteria for Nepal.

- High efficacy
- Approved for use in Nepal
- Low cost
- Acceptable safety
- Organism resistance is either unlikely to develop or will be delayed
- Single dose
- Oral administration
- Not contraindicated for pregnant and lactating women

2.4 Client Education and Counselling

Education is a dialogue between patient and health care provider (HCP) to enable the patient to understand their diagnosis and how to maintain health and avoid risk of infection.

Counselling is the process by which the HCP enables the patient to cope with problems associated with health or avoiding risk.

It is, however, impossible to draw an absolute line between the two. Most sensitive HCPs will employ some counselling skills in their work.
Education is an integral part of the case management process. Education is needed for the patient to understand his or her present problem, how to be sure of cure and how to avoid the risk of infection in the future.

STI patients are, by definition, a group at increased risk of infection and may well be particularly receptive to educational messages. They recognize that it **could** happen to them.

The time is limited and only a few messages are likely to be absorbed. **Box-7** gives some appropriate messages.

Box-8

In order to remember what to discuss with patients remember the **FOUR Cs** as shown

EDUCATIONAL MESSAGES FOR STI PATIENTS

Discussion with patients may include:

- Present infection - the cause and possible consequences
- Treatment and need to complete the full treatment course
- Need of avoiding sex until cured
- Need for partners to be treated
- Risk reduction - how to avoid future infection - 'safer sex' - promoting/providing condoms and demonstrating condom use for their correct and consistent use
- Need to get early treatment if any future problem
- Risk of HIV from sex
- Follow up
- Referral (When and where?)

Box-9

THE 4 Cs

Compliance
- completing all the treatment as prescribed

Counseling/Client Education
- about the disease
- about HIV

Contact tracing
- making sure all sexual partners are encouraged to get treatment

Condoms
- Providing and promoting condom use
- Avoiding reinfection of STIs
- Ensuring correct and consistent use of condoms

REMEMBER THE 4 Cs WITH EVERY PATIENT

2.5 Partner Notification

REMEMBER PARTNER NOTIFICATION WHENEVER STI IS DIAGNOSED

Like other infectious diseases, simply treating those individuals who present with symptoms for treatment cannot control STIs. Partner notification offers an important chance of finding infected persons - often asymptomatic women - who are unaware that they might be infected.

All Partners should be brought to treatment by:

- Asking the patient to contact their sexual partners and encourage them to come to an HCP for treatment
- Providing STI drugs to the patient to treat their partner (s)
- Tracing the partners through PEs/OREs

If neither of these is possible and the condition is considered important, a public health care official or HCP can, with the permission and cooperation of the original patient, go and look for the partner and either bring them to a health care facility or take treatment to them. This method will often be challenging because of the shortage of resources and trained staff.

Box-10

PRINCIPLES FOR PARTNER NOTIFICATION

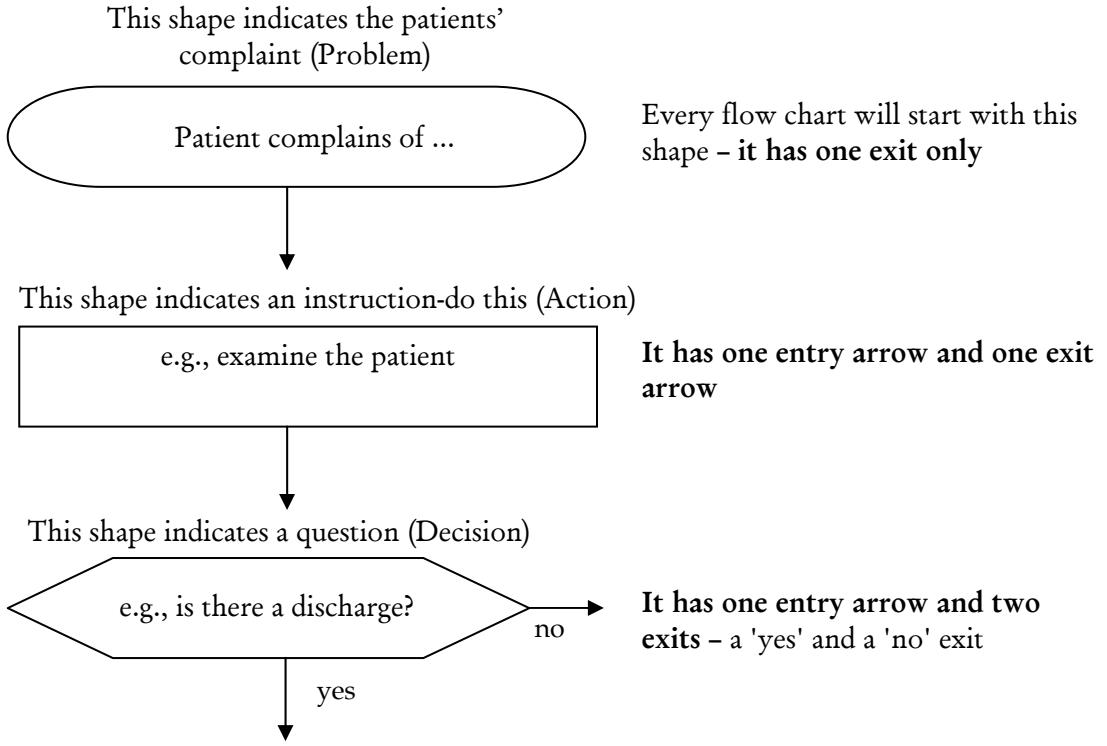
Partner notification should always:
- Be voluntary and non-coercive
- Preserve confidentiality
- Observe the human rights and the dignity of the patient

2.6 Use of Flow Charts

Many STI patients will seek care from health worker without specialised knowledge on STIs. To make it easier for non-experts to effectively treat STI patients, it is recommended that HCPs be guided by 'flow charts'. Flow charts for the commonly occurring sexually transmitted infections in Nepal are included as part of these guidelines.

Each flow chart is a decision tree. By following the chart step by step, a logical decision can be reached. It helps how to diagnose and treat the condition with reminders on education, notification and follow up. To make it even easier, the flow chart is made up of different symbols. Each shape has a different meaning.

Shape and meaning of each box in a flow chart



The HCP selects the flow chart headed by the patient's complaint and then follows the flow chart step by step. The flow chart will always end with treatment instruction or, in a few cases, with the instruction to refer the patient.

3. STI Syndromes And Management

This section describes, one by one, the syndromes likely to be seen in Nepal, the infections mostlikely to give rise to those syndromes and presents the flow charts recommended for their case management and the recommended treatment by following syndromic and enhanced syndromic approach.

Enhanced Syndromic Management
Enhanced Syndromic Management of STIs combines clinical and public health approaches. It is offered to males, females and third genders including high-risk groups such as sex workers who might have high prevalence and incidence of STIs, but may remain asymptomatic. This approach improves the quality of care reaching all those asymptomatic but high risk STI patients. It requires some basic on-site laboratory supports (serological testing for syphilis and Gram staining of cervical and vaginal specimens, wet mount KOH)based on STI Case Management Guidelines.

Full aetiological diagnosis of all STIs is still not possible with this approach. This shortcoming can be overcome by using presumptive treatment of cervicitis or proctitis to the high risk population on their first visit and or who have not visited to the clinic in the last three months. Subsequent re-treatment for cervicitis or proctitis of this group of population (for high-risk females and MSM) visiting regularly however will depend on criteria predicting newly acquired cervicitis or proctitis through risk assessment or actual clinical or laboratory evidence of cervicitis or proctitis.

All sex workers (or persons with regular multiple sex partners) will be encouraged to attend the clinic at least once a month even when asymptomatic, where they will be offered detail examination and basic laboratory tests on each visit to augment clinical findings (even if asymptomatic).

Presumptive treatment for sex workers
Because of the high prevalence of asymptomatic infections and high rates of re-infection, presumptive treatment for gonococcal and chlamydial infections is recommended for the sex workers even when there is no sign of infection if:

- the sex worker is visiting the clinic for the first time;
- the time lapse is three months or more since the last STI screening visit.

The rationale for presumptive treatment of STIs in asymptomatic sex workers is that:
Sex workers are frequently exposed to STIs considering their inconsistent condom use and are known to have high prevalence and incidence of gonococcal and chlamydial infections.

STIs such as cervical and rectal gonococcal and chlamydial infections are asymptomatic in the majority of those infected.

- After their first visit, sex workers should be encouraged to attend the clinic for monthly routine check-ups (fixing appointment date for next visit).
- Frequent visits are encouraged if new STI symptoms appear or the previous symptoms get worse.
- Monthly follow-up visits for routine examination and counselling should be promoted to all sex workers.

Screening and Treatment of Asymptomatic Infections for Most-at-Risk Populations (MARPs)

- Monthly history taking, physical examination and the laboratory diagnostics
- Serologic screening for syphilis and HIV every three months
- Presumptive treatment for gonococcal and chlamydial infections when indicated

All STI clients (or those visiting to STI clinics) should be offered screening for syphilis and HIV infection

3.1 Urethral Discharge Syndrome (UDS)

A group of symptoms and signs due to infection of urethra by sexually transmitted organisms usually *Neisseria gonorrhoeae* and *Chlamydia trachomatis* causing inflammation of columnar epithelium of urethra resulting in discharge from urethra, dysuria and urethral irritation.

URETHRAL DISCHARGE SYNDROME

Symptoms	• discomfort on passing urine (slight to severe)
Signs	• discharge from the **urethral opening** (thin to thick, clear to pus)
Causative organisms	
Main and important causes	
	• *Neisseria gonorrhoeae*
	• *Chlamydia trachomatis*
Other Causes	
	• *Mycoplasma genitalium*
	• *Ureaplasma urealyticum*
	• *Trichomonas vaginalis*
	• unknown causes - 'non-specific urethritis'

RECOMMENDED TREATMENT

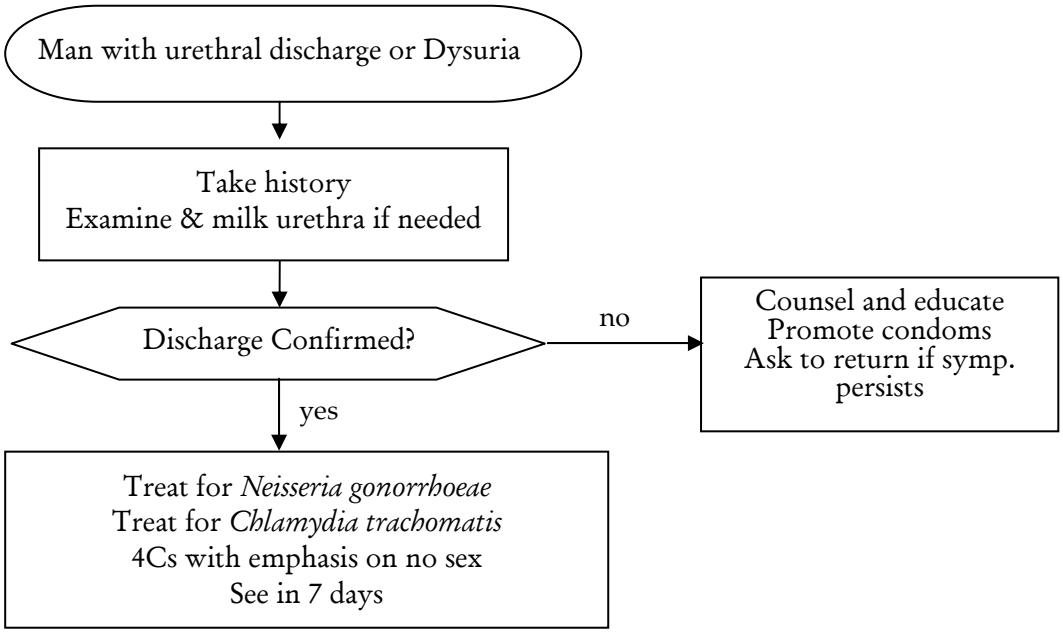
Tab. Azithromycin 1gm oral single dose **or**
Cap. Doxycycline 100 mg twice daily for 7 days
Plus
Tab. Cefixime 400 mg oral single dose
or Inj. Ceftriaxone 250 mg IM single dose
or
Inj. Spectinomycin 2 g IM single dose (reserve drug for gonococcal infection)

Recurrent Urethral Discharge:
Persistent or recurrent symptoms of urethritis may result from drug resistance, poor compliance or re-infection. If there is history of unprotected sexual exposure even with regular but untreated sexual partners, re-treatment for both gonococcal and chlamydial infection is indicated. In some cases, there may be infection with *Trichomonas vaginalis* that should be treated with metronidazole or tinidazole 2 gm stat dose, if the prior treatment fails.

Note: Single dose treatment regimens are preferred in all cases for better compliance

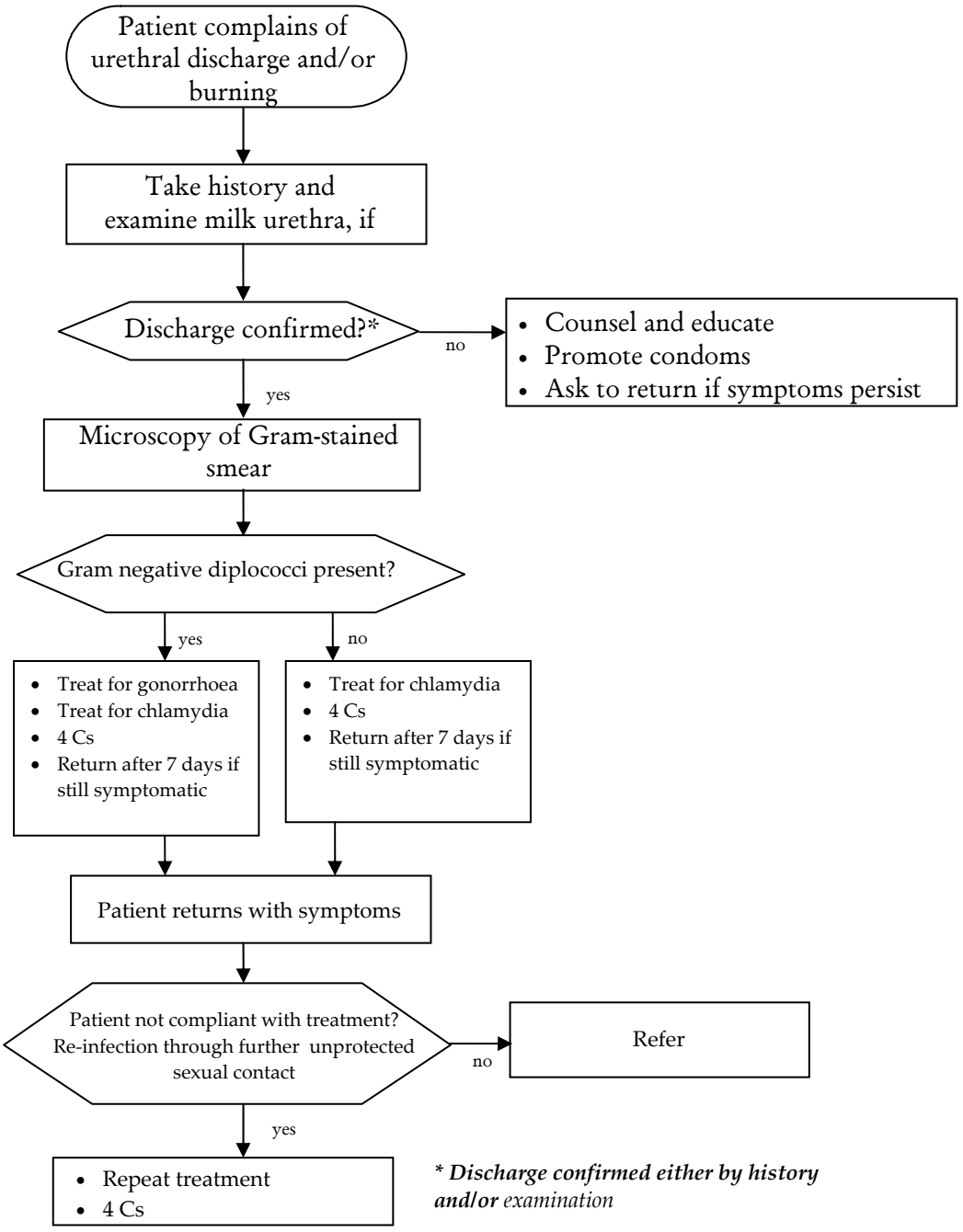
Flow Chart-1

FLOW CHART FOR THE SYNDROMIC MANAGEMENT OF URETHRAL DISCHARGE WHERE MICROSCOPE IS NOT AVAILABLE



Flow Chart-2

FLOW CHART FOR THE CASE MANAGEMENT OF URETHRAL DISCHARGEWHERE MICROSCOPE IS AVAILABLE



** **Discharge confirmed either by history and/or** examination*

3.2 Scrotal Swelling Syndrome

This syndrome is associated with inflammation of testes (orchitis) and/or epididymis (epididymitis) or both (epididymo-orchitis) causing swelling and pain of testes and epididymis mostly unilateral and sometimes associated with urethral discharge and dysuria.

It is commonly due to extension of infections of the epididymis and testes caused by organisms causing urethral discharge such as *Neisseria gonorrhoeae* and *Chlamydia trachomatis* or both.

SCROTAL SWELLING SYNDROME

Symptoms	• painful testis • dysuria (sometimes)
Signs	• swelling and tenderness of testis and epididymis • discharge (occasionally)
Causative organisms	• *N. gonorrhoeae* • *C. trachomatis*

RECOMMENDED TREATMENT:

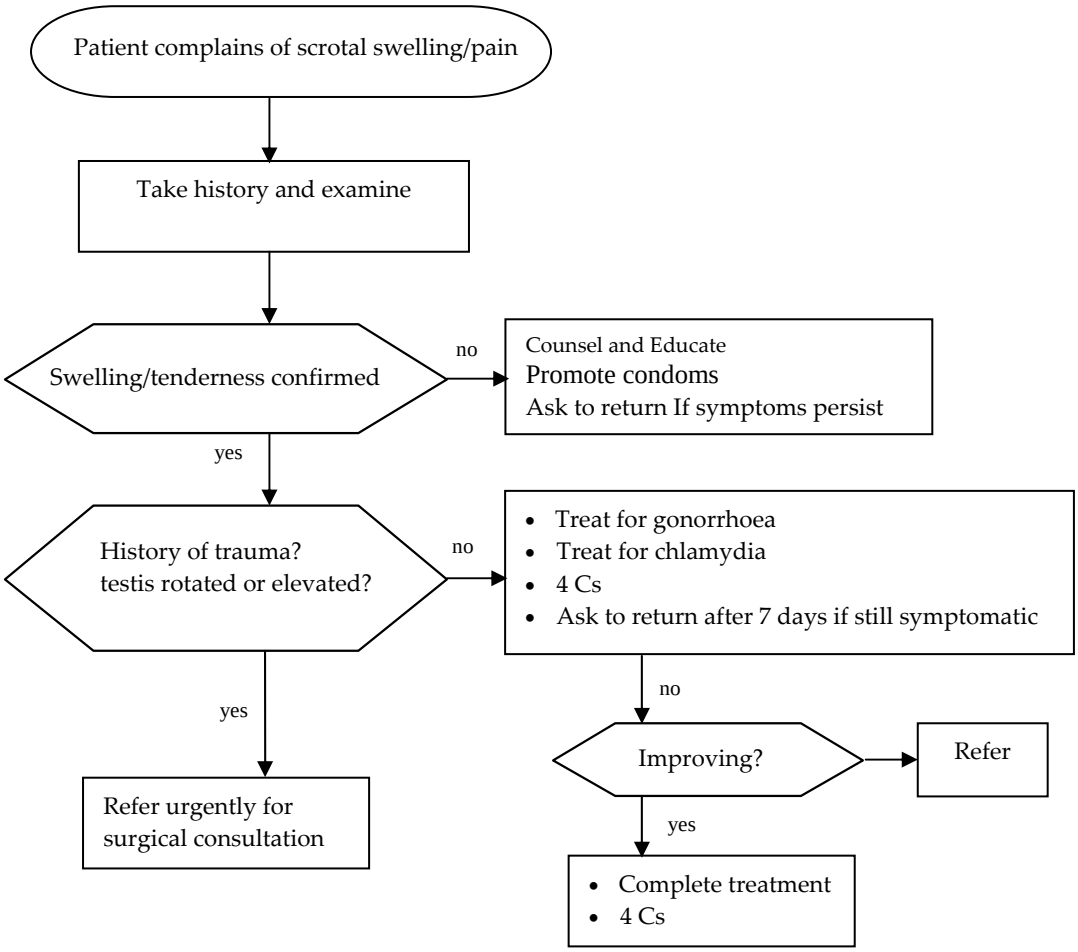
Scrotal Swelling

Tab. AZITHROMYCIN – 1 gm, oral, single dose
or Cap. DOXYCYCLINE 100 mg oral twice a day for 7 days
Plus
Tab. CEFIXIME – 400 mg, oral, single dose
or Inj. CEFTRIAXONE – 250 mg, IM, single dose **or**
Inj. SPECTINOMYCIN, 2 gm, IM, single dose

Bed rest, analgesia and scrotal support until local inflammation subsides

Flow Chart-3

FLOW CHART FOR THE CASE MANAGEMENT- SCROTAL SWELLING SYNDROME



3.3 Genital Ulcer Disease Syndrome (GUD)

Genital sores, vesicles or ulcers caused by sexually transmitted organisms are grouped together in the genital ulcer disease syndrome. These sores, vesicles, ulcers may be varied in their characteristics – such as being single, multiple, painless, painful, superficial or deep. Causative organisms of genital ulcers vary from place to place. The most common causes are syphilis, chancroid and genital herpes. These are called ulcerative STIs.

GUD Syndrome is an STI syndrome presenting with genital ulcers with or without inguinal lymphadenitis and can be caused by several organisms.

Causative Agents

- *Treponema pallidum* (syphilis)
- Herpes simplex virus (HSV) - genital herpes
- *Haemophilus ducreyi* - (chancroid)
- *Klebsiella granulomatis* (previously *Calymmatobacterium granulomatis*) –granuloma inguinale (Rare in our country)

Clinical Features

Symptoms

- Soreness or pain
- Ulcers – single or multiple in the genitalia
- Unilateral or bilateral inguinal lymphadenopathy

Signs

- Ulcers may be single or multiple, superficial or deep, clean or dirty looking
- May be associated with enlarged, tender or non-tender, unilateral or bilateral, soft or rubbery lymph nodes.

Occasionally, there may be non-itchy maculo-papular rashes all over the body including palms and soles (a sign of secondary syphilis)

Sites to look for ulcers are:

- **In men:**
  External genitalia including the inner surface of the foreskin and the part it normally covers.

- **In women:**
  Examine the skin of the external genitalia and at the mucus surfaces by separating the labia.

- **In Both Sexes:**
  Ulcers may be present at, perineum, peri-anal region, anus or oral cavity

Recommended treatment

Treatment for Syphilis
Inj. Benzathine Penicillin 1.2 million I.U deep IM at each buttock (total 2.4 million IU) single dose

Plus

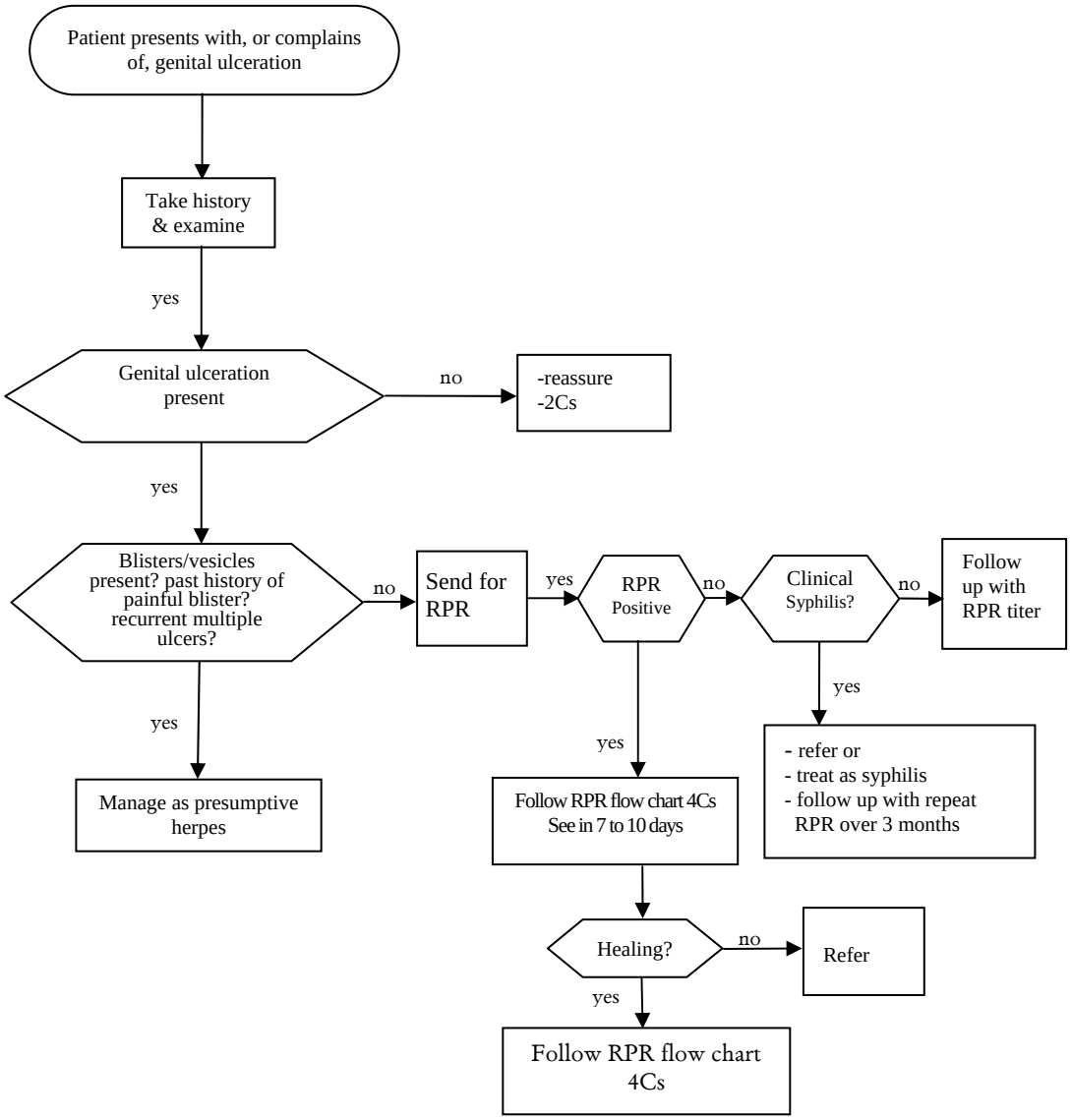
Treatment for chancroid :
Azithromycin 1 gm orally as a single dose

Plus

Treatment For Herpes genitalis:
Acyclovir, 400 mg orally three times daily for 7 days (If there is clinical evidence of Gen. Herpes)

Flow Chart 4

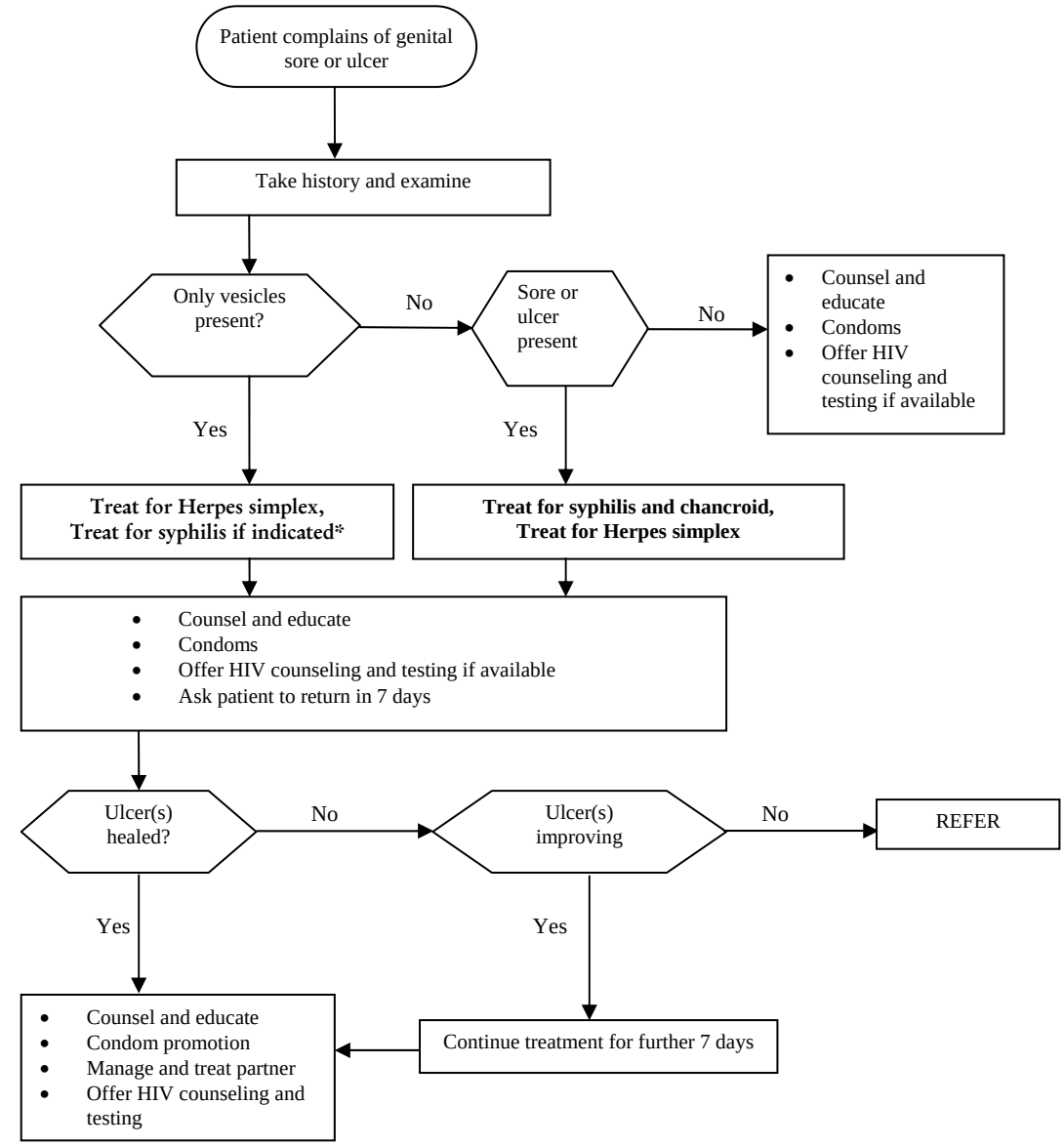
FLOW CHART FOR THE MANAGEMENT OF GENITAL ULCER DISEASE WHERE RPR SEROLOGY IS POSSIBLE



If RPR is reactive (neat or higher) even without any clinical symptoms & signs of Genital ulcer disease in a high risk population treatment of syphilis is recommended. If RPR test reactive then mention the tite

Flow Chart 5

FLOW CHART FOR THE TREATMENT OF GUD WHERE RPR IS NOT POSSIBLE



* Indications for syphilis treatment:
- RPR positive; and
- Patient has not been treated for syphilis recently

3.4 Inguinal Swelling (bubo) Syndrome

Enlargement of inguinal lymph nodes, unilateral or bilateral associated with or without tenderness, firm or fluctuant due to various sexually transmitted organisms are grouped under Inguinal Bubo Syndrome. It also depends on the local prevalence of organisms causing such symptoms and signs.

INGUINAL SWELLING (BUBO) SYNDROME

Symptoms
- Painful sweling in the groin

Signs
- Discharging sinus

Causative organisms
- *Chlamydia trachomatis*
- Haemophilus ducreyi (Chancroid)

RECOMMENDED TREATMENT FOR INGUINAL BUBO SYNDROME

1. AZITHROMYCIN 1 gm orally in a single dose
plus

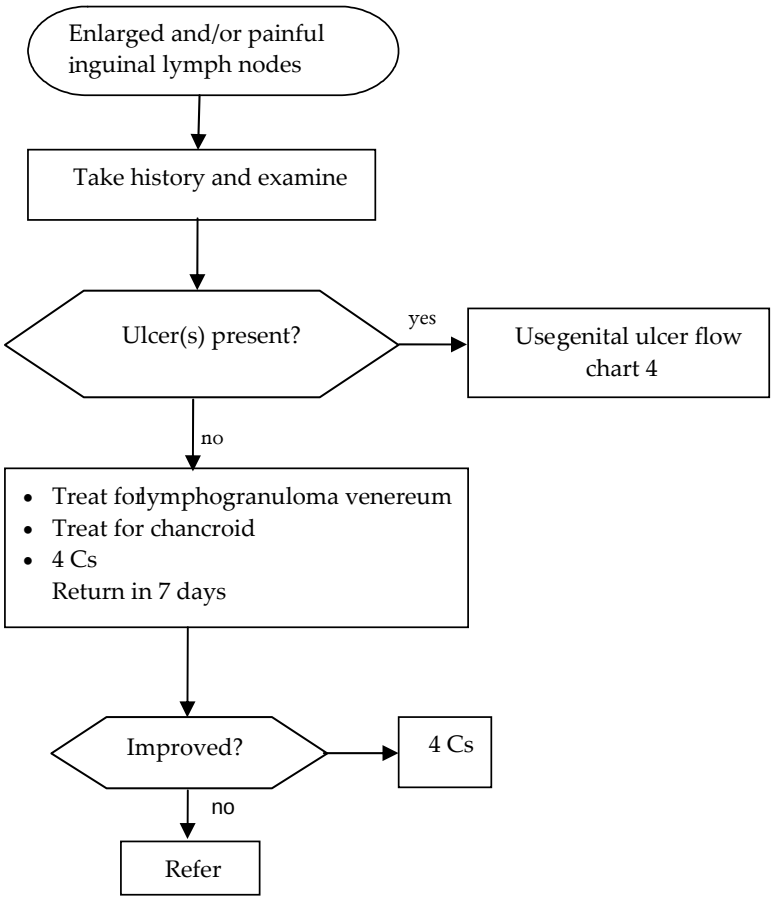
DOXYCYCLINE*, 100mg, two times daily for 14 days
Or

2. ERYTHROMYCIN, 500mg, four times daily for 14 days

**Contraindicated in pregnancy*

Flow Chart-6

FLOW CHART FOR THE CASE MANAGEMENT OF THE INGUINAL SWELLING (BUBO) SYNDROME



Note: *Fluctuant lymph nodes should be a spired by darge bore needle through skin. Neve incise*

3.5 Vaginal Discharge Syndrome (VDS)

The organisms cause infection of vagina and/or cervix with unusual or abnormal vaginal discharge in quantity, colour or odour.

Vaginal discharge can be due to vaginal infection only (vaginitis) such as trichomoniasis, candidiasis and bacterial vaginosis and/or cervical infection (cervicitis) caused by *N. gonorrhoea*e and *C. trachomatis* or mixed vaginal and cervical infection simultaneously. Vaginitis is the most common cause of vaginal discharge but it is important to distinguish vaginitis from cervicitis as cervicitis leads to serious complications such as PID, infertility, ectopic pregnancy and others.

Risk assessment and speculum examination may be helpful to determine whether the vaginal discharge is from vaginal or cervical infection.

A number of demographic and behaviour risk factors are associated with cervical infection and are used to assess the risk of cervical infection in formal risk assessment.

VAGINAL DISCHARGE SYNDROME

Symptoms
- Vulvo-vaginal irritation
- Vaginal soreness and smell
- Pain during intercourse

Signs
- Discharge from the vaginal opening
  - Thin to thick
  - Clear to purulent - scanty to profuse

Causative organisms

Vaginal infection is caused by:
- *Candida albicans*
- *Trichomonas vaginalis*
- Bacterial vaginosis

Cervical infection is caused by:
- *Neisseria gonorrhoeae*
- *Chlamydia trachomatis*

Treatment of Vaginal Discharge Syndrome (cervicitis & vaginitis

RECOMMENDED TREATMENT

Cervicitis Treatment

Azythromycin 1 gm oral single dose

or Doxycycline100 mg oral twice daily for 7 days

Plus

Cefixime 400 mg oral single dose

or Ceftriaxone 250 mg IM single dose

or Spectinomycin 2 gm IM single dose

Vaginitis Treatment

Metronidazole 400 mg oral three times a day for 7 days

or Tinidazole 2 gm oral single dose

Plus

Fluconazole 150 mg oral single dose

or Clotrimazole 200 mg vaginal pessary each nights for 3 nights

N.B.: In pregnant women, tinidazole and metronidazole are contraindicated in the first trimester. However, metronidazole 400 mg 3 times daily can be used after first trimester of pregnancy. Fluconazole is contraindicated in pregnancy. Patient taking tinidazole or metronidazole should be cautioned to avoid alcohol at least12 hour before and 24hour after taking it

It is important to distinguish which women presenting with vaginal discharge have cervicitis and vaginitis as opposed to those who with vaginitis alone. Vaginitis is more likely to produce symptoms but is unlikely to be associated with complications. In

contrast, cervicitis is a common cause of complications and sequelae and is therefore of very considerable clinical and public health importance.

In the absence of laboratory facilities for identifying specific organisms in the cervix, risk assessment is recommended for identifying which women are likely to have cervicitis. In making a risk assessment, the HCP asks 'What is the probability of this woman having a cervical infection?' The box below describes how this assessment may be made. It is very important to establish a tolerant and trusting relationship with the patient in order to obtain a reliable risk assessment.

RISK ASSESSMENT

International Workshop on STI Case Management in South Asia has recommended redefining the Risk Assessment. Risk Assessment is a method or tool to assess whether a woman with symptoms of vaginal discharge is likely to have cervical infection (gonococcal or chlamydial).

Positive Risk Assessment (RA +) is defined as women having
(I) Symptomatic partner &/or
(II) Having more than one partner in the last month &/or
(III) Partner having multiple partners.

The following may help the Health Worker to make an assessment of the probability of a woman having cervical infection (cervicitis)

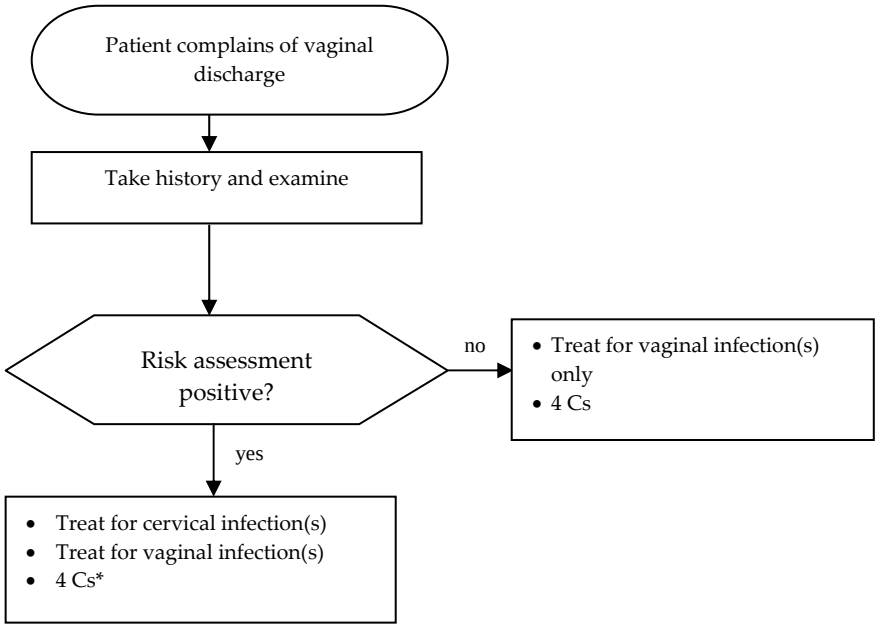
Personal knowledge of woman and her environment

If the health worker comes from the same area he/she may know something of the circumstances of the women and whether she or her partner is likely to have risk behaviors. They may be able to supplement or verify the above three questions.

If the risk assessment is negative, treat the patient for vaginitis only. If the risk assessment is positive treat for both vaginitis and cervicitis (presumptive treatment for cervicitis).

Flow Chart-7

FLOW CHART FOR THE CASE MANAGEMENT OF THE VAGINAL DISCHARGE – NO SPECULUM EXAMINATION POSSIBLE



If symptoms persists refer to the next higher level where speculum exam and lab. tests are available.

THE 4 Cs

Compliance
- completing all the treatment as prescribed

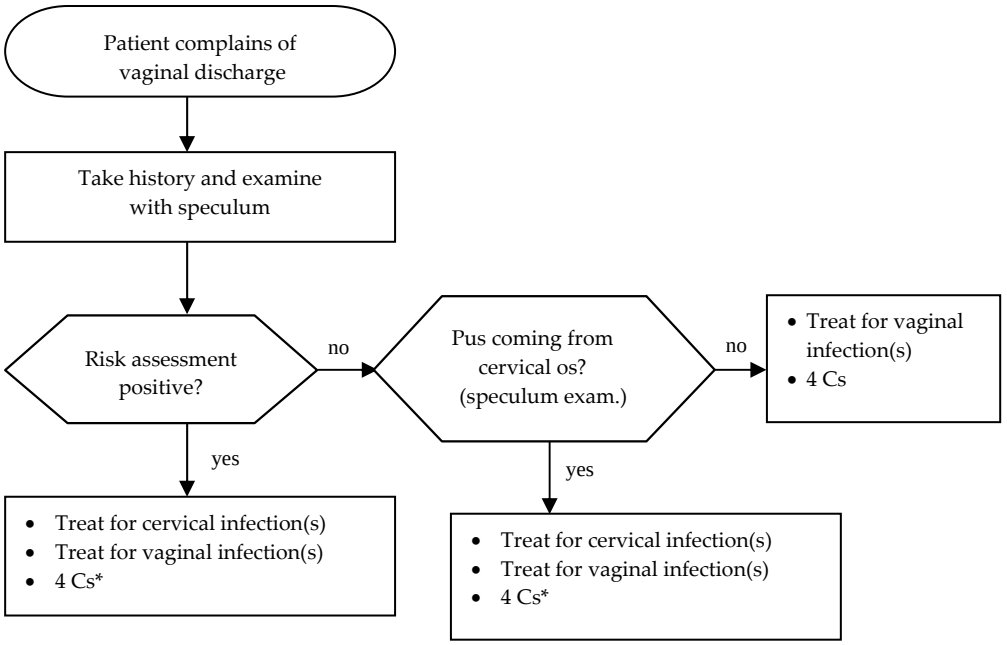
Counseling/Client Education
- about the disease
- about HIV

Contact tracing
- making sure all sexual partners are encouraged to get treatment

Condoms
- Providing and promotiing condom use
- Avoiding reinfection of STIs
- Ensuring correct and consistent use of condoms

Flow Chart-8

FLOW CHART FOR THE CASE MANAGEMENT OF VAGINAL DISCHARGE WHERE SPECULUM EXAMINATION IS POSSIBLE



THE 4 Cs

Compliance
- completing all the treatment as prescribed

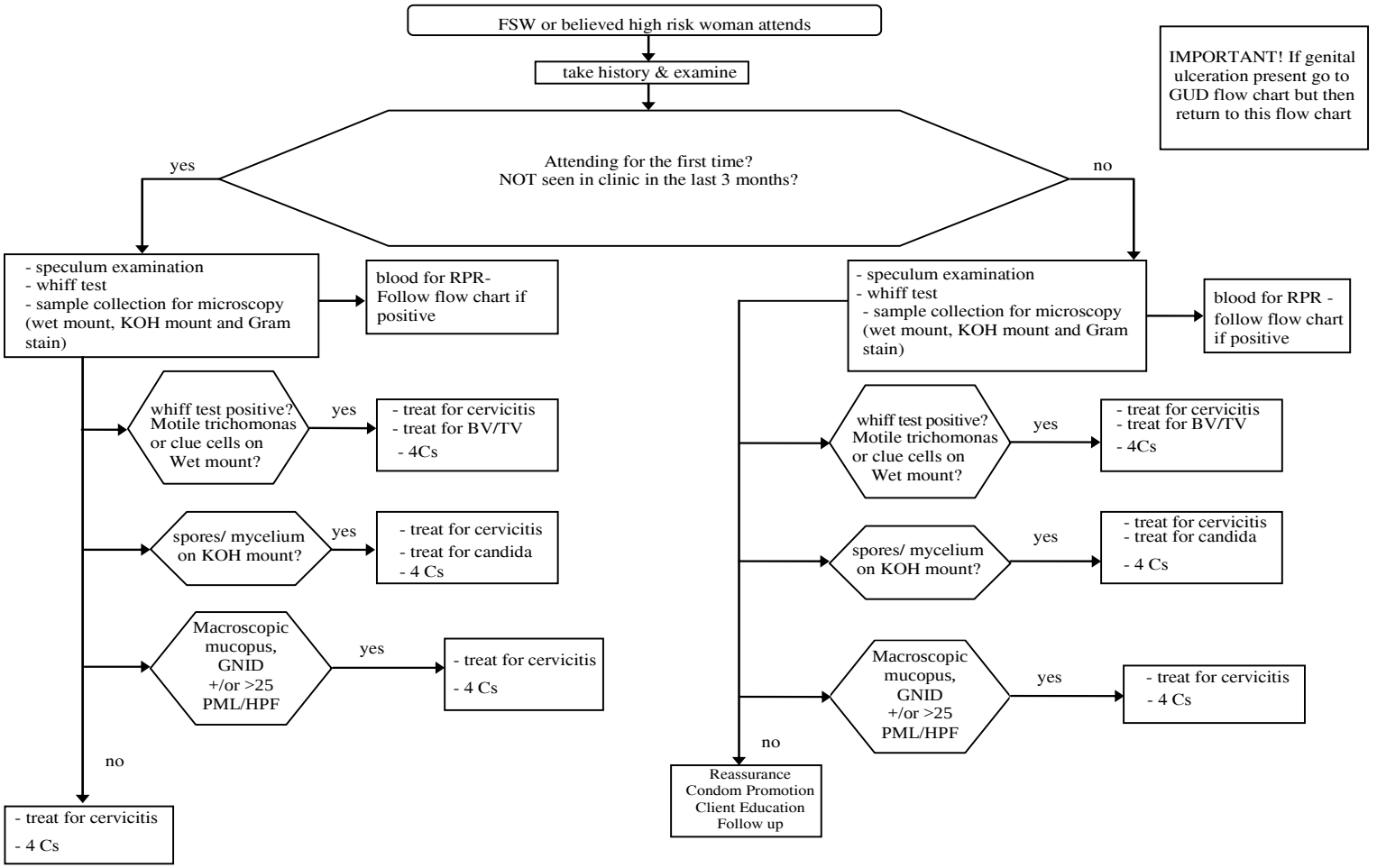
Counseling/Client Education
- about the disease
- about HIV

Contact tracing
- making sure all sexual partners are encouraged to get treatment

Condoms
- Providing and promotiing condom use
- Avoiding reinfection of STIs
- Ensuring correct and consistent use of condoms

Flow Chart - 9

MANAGEMENT OF STIS IN SEX WORKER OR BELIEVED HIGH RISK WOMAN



3.6 Lower Abdominal Pain Syndrome

Lower Abdominal Pain Syndrome describes a state of acute or chronic inflammatory condition involving pelvic organs such as the uterus (endometritis), Fallopian tubes (salpingitis), ovary (tubo-ovarian mass), adjoining peritoneum (peritonitis) caused as a complication of untreated cervical infection extending to the upper genital tract or with indigenous organisms such as anaerobic bacteria, streptococci (often following a surgical procedure).

This is one of the most difficult syndromes to assess. It is, however, very important to make an early diagnosis of pelvic inflammatory disease to reduce the chances of infertility and other sequelae.

Symptoms
- Pain in lower abdominal - episodic or continuous
- Fever low or high grade
- Vaginal discharge

Signs
- Tenderness in lower abdomen
- Fever ≥38^{o}C
- Vaginal discharge may be present

On Bimanual Examination
- Cervical excitation may be present

On speculum examination
- Pus discharge from the cervical *os* may be present

Causative organisms
- *Neisseria gonorrhoeae*
- *Chlamydia trachomatis*
- Anaerobic bacteria

Recommended Treatment at STI clinic

Out patient treatment (for mild to moderate PID)
- Cefixime 400mg oral stat **or** Ceftriaxone 250 mg IM stat **plus**
- Doxycycline100 mg oral twice a day for 14 days **plus**
- Metronidazole 400 mg thrice a day for 14 days
- Follow up in 3-7 days, if not improved refer to nearby hospital
- 4 "Cs"

In-patient Treatment (for severe PID)
- Ceftriaxone or other third generation Cephalosporin IV daily*

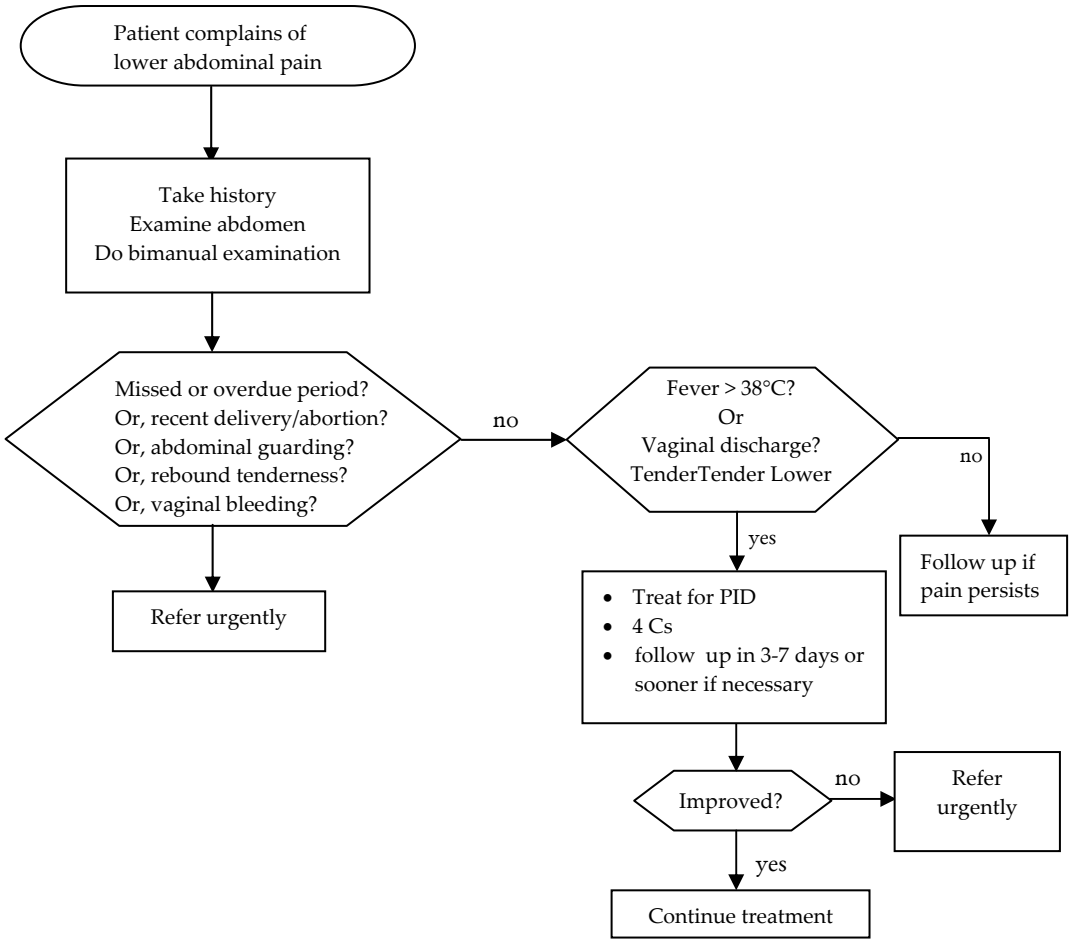
Plus
- Doxycycline100 mg oral twice a day for 14 days

Plus
- Metronidazole 400 mg thrice a day for 14 days

* (Dose and duration to be determined on the basis of severity and clinical judgment)

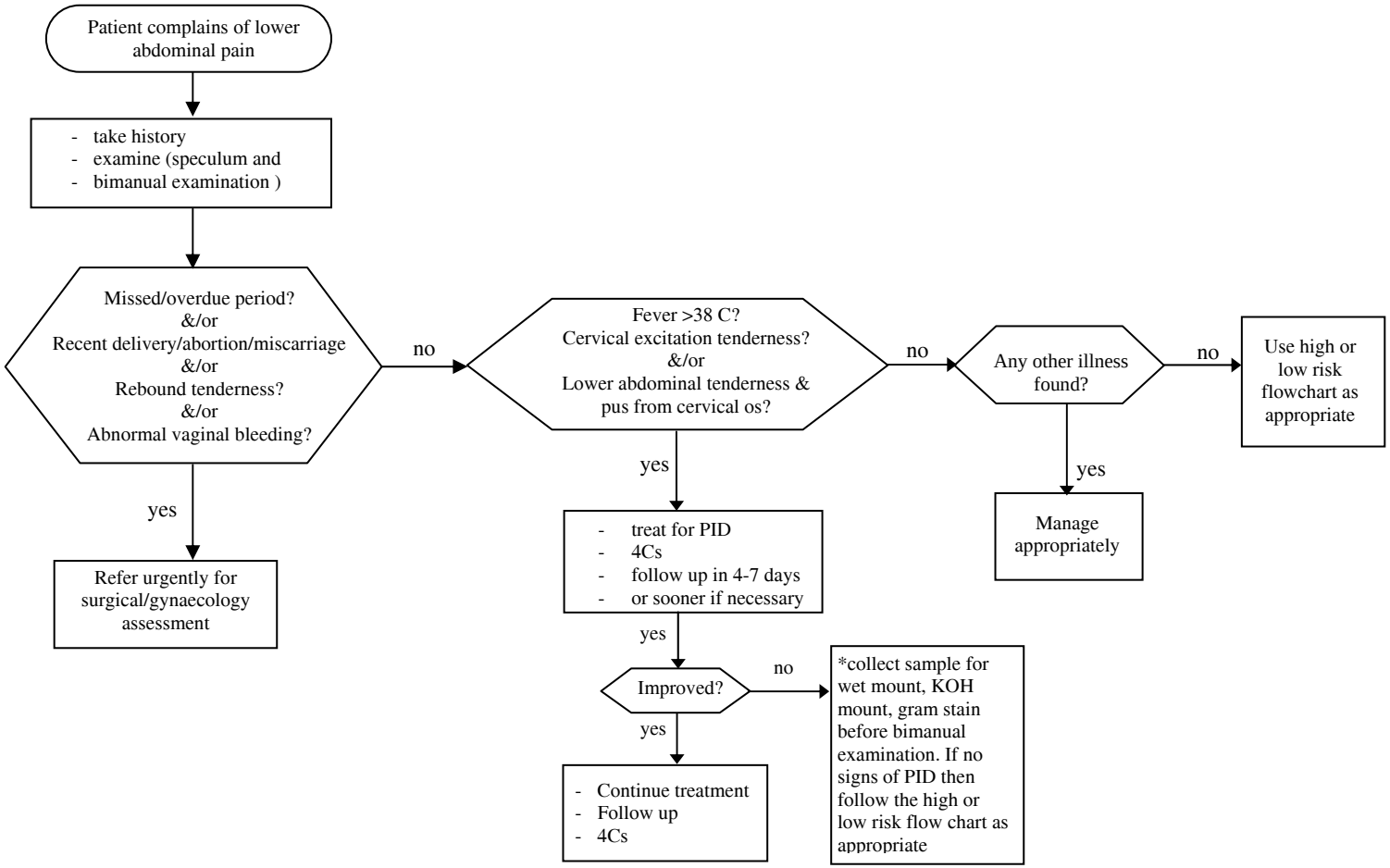
Flow Chart-10

FLOW CHART FOR THE CASE MANAGEMENT OF THE LOWER ABDOMINAL PAIN SYNDROME IN WOMEN (NO SPECULUM EXAMINATION EXAMINATION



Flow Chart–11

LOWER ABDOMINAL PAIN IN WOMEN WHERE SPECULUM EXAM IS POSSIBLE



Hospitalization is considered necessary when:

- The diagnosis is uncertain and PID is suspected;
- Surgical emergencies such as appendicitis and ectopic pregnancy cannot be excluded.
- A pelvic abscess is suspected;
- Severe illness precludes management on an outpatients basis;
- The patient is pregnant;
- The patient is unable to follow or tolerate an outpatient regimen;
- The patient has failed to respond to out-patient therapy.

3.7 Neonatal Conjunctivitis (*Ophthalmia neonatorum*)

Bilateral or unilateral swelling of eye-lids with purulent discharge (*ophthalmia neonatorum*) due to transmission of infection from infected mother is caused by *N. gonorrhoeae* and *C. trachomatis*. Neonatal conjunctivitis caused by *N. gonorrhoeae* can be lead to blindness. *C. trachomatis* can also cause pneumonia that may be serious in infants.

Ophthalmia neonatorum can be almost totally prevented by prophylactic eye treatment at birth. The eyes of all infants should be carefully cleaned immediately after birth with normal saline and 1% tetracycline ointment applied.

THE SYNDROME OF NEONATAL CONJUNCTIVITIS

Signs Swelling and/or discharge from one or both eyes within 21 days

Causative organisms

- *N. gonorrhoeae*
- *C. trachomatis*

Recommended Treatment

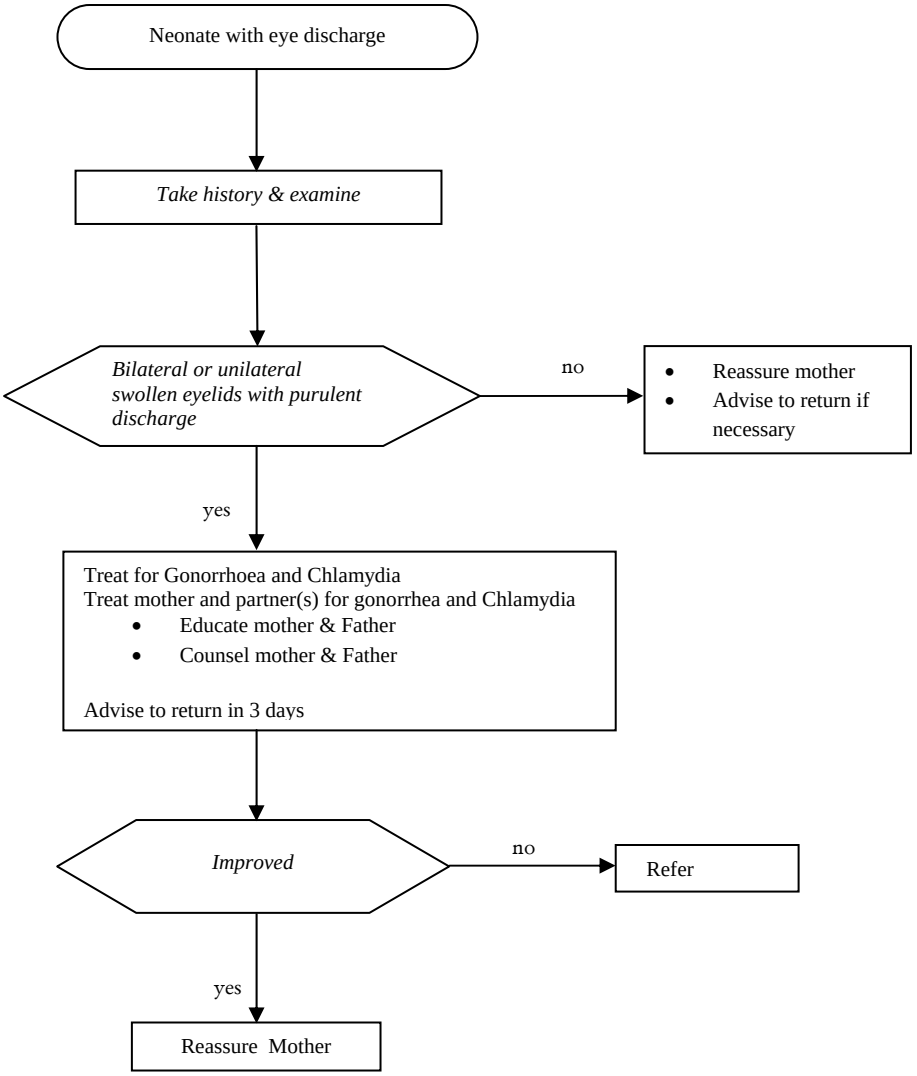
- *Inj. Ceftriaxone 50 mg/kg IM single dose not exceeding 125 mg*

Plus

- *Erythromycin syrup 50 mg/kg oral in 4 divided dose for 14 days*
- *Frequent clearing of eyes with normal saline*

Flow Chart 12

FLOW CHART FOR THE MANAGEMENT OF NEONATAL CONJUCTIVITIS SYNDROME



3.8 Management of STIs among MSW/MSM and Third genders (TGs)

MSM

MSM is the abbreviation used to define men who have sex with other men. They might have receptive, insertive anal and/or oral sex or other sexual behaviours. They might identify as heterosexual, bisexual or homosexual – or even have a "gay" identity as seen in Western countries and some may choose not to identify themselves as any of the sexual orientation mentioned. They might have a locally known identity (e.g., "ta" and "*dohori*")

Third Gender (Transgenders) (TGs)

Third Genders are men or women who feel different about their gender identitites regardless of their bilogical sex. A male child can feel feminine and a female child can feel masculine, hence a male to female thirdgender and female to male thirdgender. The risk of STIs is seen more in male to female thirdgenders who are also known in Nepal as "meti"

Characteristics of MSM/TGs

- Many MSM/TGs also have sex with opposite sex.
- Their common sexual practices include:
  - Receptive and/or insertive anal sex;
  - Receptive and/or insertive oral sex;
  - Insertive vaginal sex;
  - Mutual masturbation;
- Some MSM/TGs also have other risks e.g., alcohol or drug use, needle sharing for drug use etc.

MSM and third genders are at greater risk of STIs including HIV infection as evidenced by the IBBS study 2008 among this group. This is partly because of high rates of partner change and low rates of condom use. This situation is inevitably worse where there has been little intervention aimed at increasing condom use or improving both health seeking behaviour and the quality of clinical services for STIs.

Additionally, many infections remain asymptomatic. For example, the primary chancre of syphilis is typically painless. While patients with painless penile ulcer is very likely to be noticed quickly by them and may approach for the health services, a painless peri-anal ulcer is much less likely to be noticed and thus remain untreated. Gonococcal and chlamydial infections of the rectum are also commonly asymptomatic. Most syphilis in the community is latent (i.e. asymptomatic) and remains undetected unless serological tests are performed.

Laboratory tests for MSM/TGs

1. Screening for syphilis by RPR and confirmation by TPHA/TPPA
2. Screening for gonococcus and NGU by Gram stain (and culture if available)
3. Specimens should be taken from rectum and urethra (if there is history of discharge) even in asymptomatic MSM, where microscopy and/or culture is available (microscopy however is unhelpful for diagnosing pharyngeal infections)
4. Voluntary counselling and screening for HIV
5. Voluntary counselling and screening for HBV and HCV if available

Treatment of STIs in MSM

The drug treatments and the duration to treat STIs are the same as in other people with STIs.

Regular follow-up, partner notification (contact tracing) and treatment and motivation on consistent use of condoms are important aspects of the management so that the risk of acquisition and transmission of STIs can be reduced.

On anoscopy, if there is macroscopic pus or if there are >5 polymorphs/HPF on Gram stain of rectal swabs, treat MSM for both gonorrhoea and chlamydia:

- Tab. Cefixime 400 mg oral– one dose stat

Plus

- Tab. Azithromycin – 1 gm oral one dose stat

Plus

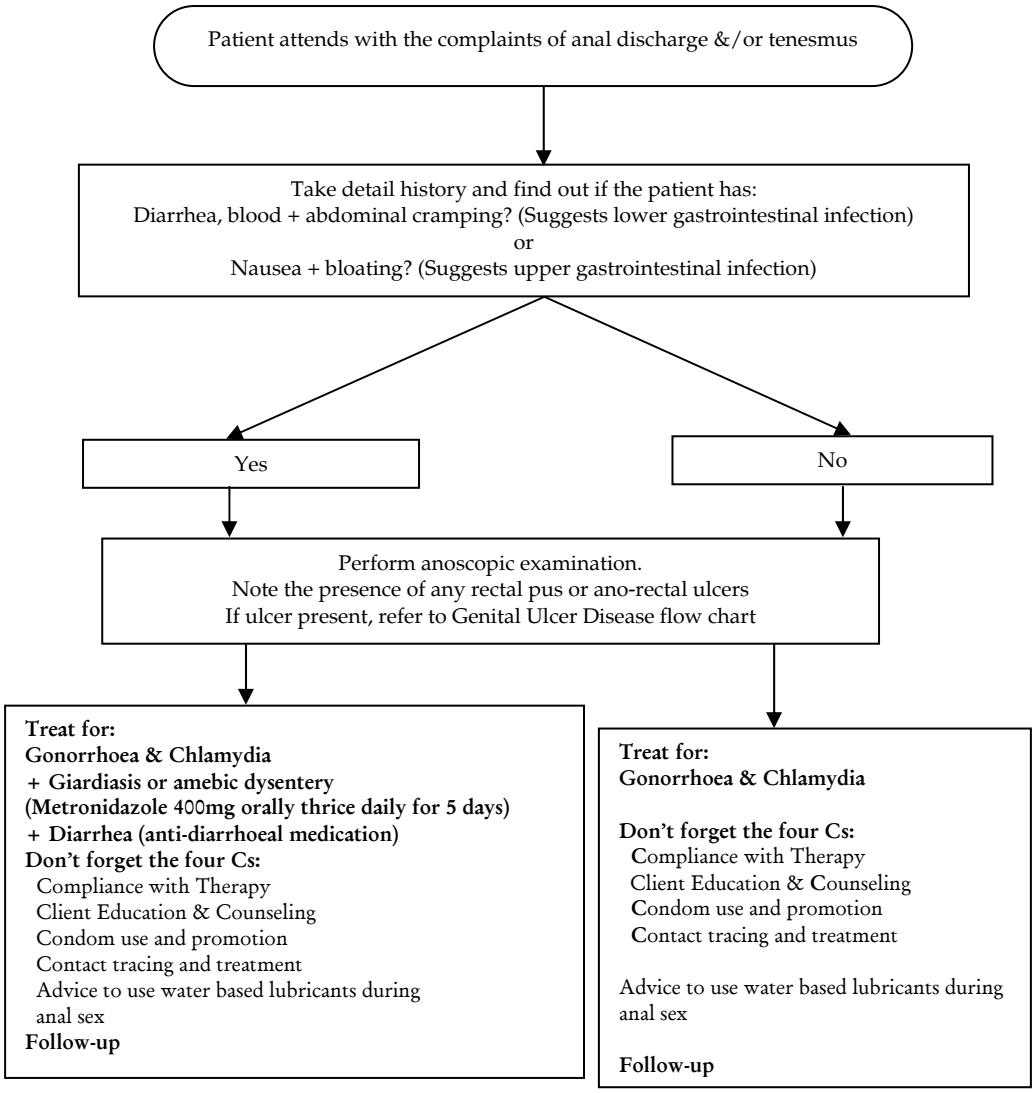
- Metronidazole 400mg oral 3 times a day for 7 days, if diarrhoea, blood and or history of abdominal cramping
- Emphasize 4 Cs for each STI patient.
- Ephasize to use condom with lubircants during sex. Emphasize to use the condom with lubricants during sex.
- Offer or refer for HIV testing and counselling

If the patient has pharyngeal gonoccoccal/chlamydial infections (diagnosed from the history, clinical findings (and lab support if available), treat both for gonococcal and chlamydial infections with same two drugs and doses as of above.

Note: Treatment of individual STIs such as Genital wart, Genital Herpes, Chancroid, Syphilis etc, among MSM/TG are same as for STIs in other persons. Syndromic approach of STI treatment among MSM/TGs are also the same. However, since MSM/TG have more frequent ano-rectal and oral symptoms of STIs specially of Gonococal and Chlamydial infection, special attention is given here to manage such symptoms.

Flow Chart – 13

MANAGEMENT OF ANORECTAL SYMPTOMS (Discharge &/or Tenesmus) IN MSM



3.9 Venereophobia

Introduction
The term venereophobia is used to define the fear of suffering from STIs without having an actual STI. Young people commonly present with it and the person suffering from it often goes from one doctor to another doctor without obvious improvement.

Causes
The common for venereophobia are anxiety and guilt associated with:
Risky sexual behaviour;
Pre-marital and extra-marital sexual contact;
Masturbation;
Use of sex toys;
Others (e.g., sharing same toilet, towels, bed etc).

Symptoms
Pain, itch or burning sensation on the genitalia;
Discharge per urethra – (sometimes normal and due to sexual arousal);
Sore, rash, growth;
Colour change;
Decreased size of the genitalia;
Decreased libido;
Bizarre symptoms.

Examination findings
No abnormalities will be detected.

Laboratory findings
Will be within normal limits repeated in several occasions.

Diagnosis
Should be based on a thorough history with special attention to sexual history, proper clinical examination including ano-genital examination and the available laboratory tests all of which should be negative.

Management
Proper education and counselling, anti-anxiety and refer for psychotherapy if necessary.

Note: Before labelling any patient with venereophobia, all the available tests to exclude STIs should be negative.

3.10 STI and HIV

Introduction
Since HIV is one of the STIs, both STIs and HIV have common mode of infection mainly through sexual contact and so co-infection is more likely. Both STIs and HIV can also impact on each other by increasing each other's susceptibility and infectivity.

STIs impact HIV
Both ulcerative and non-ulcerative STIs have been found to facilitate HIV transmission either by increasing HIV susceptibility or HIV infectiousness or both. Early and correct treatment of STIs along with the effective prevention program greatly reduces the risk of sexual transmission of HIV.

- People with STIs have 3-10 times greater risk of being infected with HIV
- In a single sex act, the STIs can increase HIV risk from 1:1,000 to more than 1:10
- In many countries, STIs are a major 'driving force' of the HIV epidemic

High STI rates are seen in people with behavioral risks, which could also greatly facilitate HIV transmission. Reducing this risk includes meeting the challenge of reducing sexual risk-taking behavior, and preventing, or successfully treating curable infections in time.
Successful STI management program has been found to be very effective in prevention and control of HIV transmission but the program needs high-level commitment on raising awareness of the general population and intervention targeting high-risk populations (sex workers, their clients, MSM and injecting drug users).

STIs Increases Infectivity of HIV
HIV is found in the genital fluid of both HIV infected male and female and also from the exudates of genital ulcers.
The shedding of HIV in genital fluids is increased by STI-related inflammatory responses and exudates from lesions, making men and women who are STI-infected and HIV-positive, more infective.
Studies have shown that, treating STIs reduces both the infectivity and the amount of HIV in ejaculate.

HIV impacts STIs
HIV lowers the immune status and thereby increases the susceptibility to STIs. It also alters the natural history of some STIs resulting in:

a. bizarre presentation
b. difficulty in making diagnosis

c. Abnormal serological tests results
d. not responding to the common drug in their normal doses and needing prolonged duration and
e. Increasing drug resistance and drug interactions.

3.11 Syphilis Management

Introduction
Syphilis is primarily a sexually transmitted disease caused by a slender spirochete (a bacterium called *Treponema pallidum)* having wide range of symptoms, signs and sequelae related to the involvement of different systems of the body.

Classification

I. Congenital (born with) syphilis
II. Acquired(infected later in the life) syphilis

Depending on the duration of the infection acquired by the individual both types are broadly grouped into two subtypes:

a. Early syphilis (< 2 years duration)
b. Late syphilis (> 2 years duration)

Acquired syphilis is further sub-classified as:
Early: i. Primary syphilis
ii. Secondary syphilis
iii. Early latent syphilis

Late: i. Late latent syphilis
ii. Tertiary syphilis
Neurosyphilis
Cardio-vascular syphilis
Gummatous syphilis

Management
Although most of the antibiotics are sensitive against the organism *Treponema pallidum*, their effectiveness is variable. The drug of choice and recommended treatment of syphilis is penicillin including in pregnancy.

Also refer to the flow charts of GUD and RPR management for the treatment of acquired syphilis

Other alternative drugs are recommended to be used only when penicillin is strongly contraindicated because of hypersensitivity in allergic individuals.

The dose and the duration of the drug for the treatment of syphilis are different for early vs. late syphilis.

Congenital syphilis
Inj. benzathine penicillin 50,000 million units/kg body weight and given as a single dose for early and same dose repeated for a total of three successive weeks for late syphilis.

Acquired early syphilis
A single dose of Inj. benzathine penicillin 1.2 million International Units (total 2.4 million units) in each buttock

Acquired late syphilis
The same drug in the same dose (total 2.4 million units) to be repeated over a total of three successive weeks (total of 7.2 million units). Most of the diagnosed syphilis in our country lies under latent syphilis of unknown duration. This type should also be considered as late syphilis and treated accordingly (Inj. benzathine penicillin 2.4 million units every week for a total of three consecutive weeks).

All suspected neurosyphilis or cardiovascular syphilis should be referred to the higher centres for proper management, since benzathine penicillin is not effective for neurosyphilis and cardiovascular syphilis may need urgent intervention.

Alternative drugs
As mentioned above, alternative drugs should only be used if the patient is hypersensitive to penicillin and desensitization to it is not possible.

Acquired early syphilis
1. Doxycycline 100 mg oral twice a day for 14 days (contra-indicated in pregnancy)

or

2. Erythromycin 500 mg oral four times a day for 14 days

Acquired late Syphilis
1. Doxycycline 100 mg oral twice a day for 28 days (contra-indicated in pregnancy)
2. Erythromycin 500 mg oral four times a day for 28 days

Follow-up

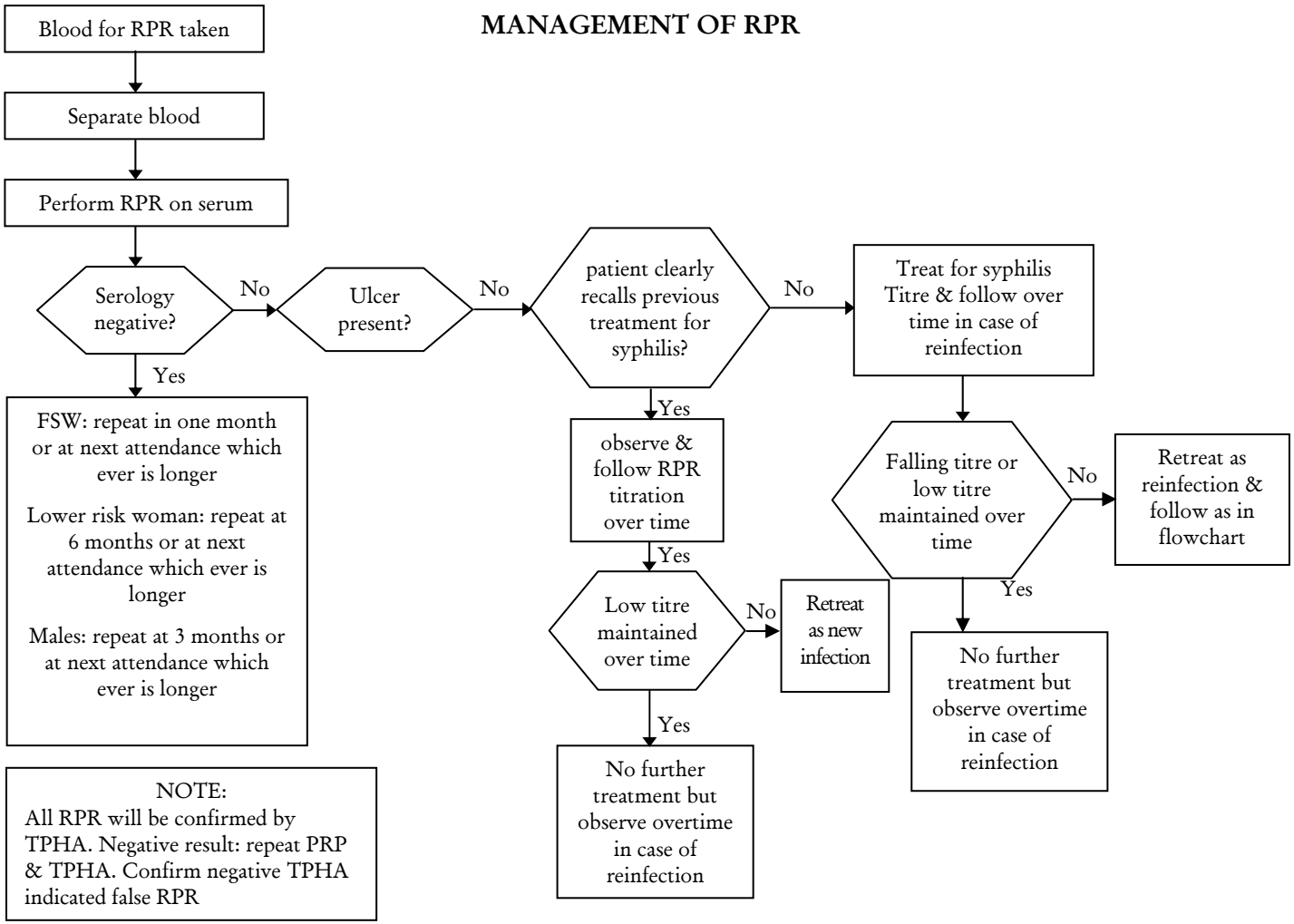
Once diagnosed and treated, every high-risk patient with syphilis should be followed up with VDRL/RPR titre at 3 months intervals and treatment repeated if the titre increases by 4 times (i.e. two-fold – e.g., from 1:4 to 1:16).

Partner Notification and treatment

All the sexual partners within the last 3 months should preferably be traced, screened and treated if found to be positive.

Flow Chart-14

MANAGEMENT OF RPR



4. Infection control

Universal precautions for the control of infection should be taken in any health care setting including setting where STI patients are being seen. This has become even more important with the appearance of HIV and its fatal sequel, AIDS.
Hepatitis B is transmitted in the same manner as HIV but very much more easily.

Universal precautions
Observation and application of general safety measures for the prevention of infection in the health care setting:

Universal precautions are necessary because
Every person should be considered potentially infections to another person - the infection may be viral, bacterial, and fungal.

Universal precautions require the HCP to

- Ensure and apply safety measures when handling body secretions and contaminated instruments
- Ensure and apply sterilisation and disinfection procedures
- Protect HCPs from getting infections - safety in the work place.

Box-10 describes the details of how universal precautions should be applied.

Box-15

APPLYING UNIVERSAL PRECAUTIONS

Apply safety measures

- Assure proper cleanliness and hygiene
- Use barrier/protective clothing, e.g., gloves
- Handle sharps with care
- Do not re-sheath needles
- Handle specimens of blood, discharge and body fluids with care
- Eliminate/dispose of contaminated materials/body specimens properly

Apply sterilization/disinfection procedures

- Sterilize all reusable instruments/equipments
- Disinfection of unsterilizable instruments/equipments

Follow instruction on Safety at the workplace-COPE

Create a barrier between HCPs and HIV – not between HCPs and patients
Observe safety precautions
Precautions in every step/procedure
Education of all HCPs

5. Safer sexual behaviour

As STIs are predominantly transmitted through the sexual contact, for the prevention and control of STIs, people who are especially at high risk should be well informed about safer sexual behaviours. Safer sexual behaviours are those in which no exchange of vaginal fluid, semen and blood can take place between the sexual partners during the sexual activities. Following activities can be included under safer sexual behaviours:

- Complete abstinence from sex
- Having sex with only one faithful uninfected partner
- Correct and consistent use of condoms in all types of sexual intercourse (vaginal, anal or oral sex)
- Practicing non-penetrative sex
- Avoid sex while intoxicated.

5.1 Condom promotion

A condom is a thin latex (synthetic rubber) covering that is placed on the penis during intercourse. If used correctly and consistently, condoms are an excellent means to prevent the sexual transmission of STIs and HIV from an infected partner to the uninfected one. It makes sex safer by not allowing the exchange of vaginal fluid, semen and blood between the sex partners. Clients should be well informed about the advantages of using condoms, the places where condoms are available and condom demonstration should be done for providing the skills to use it properly.

Advantages of Condoms

- Protects from STIs
- Protects from HIV
- Prevents from getting pregnant
- Prolongs sexual intercourse

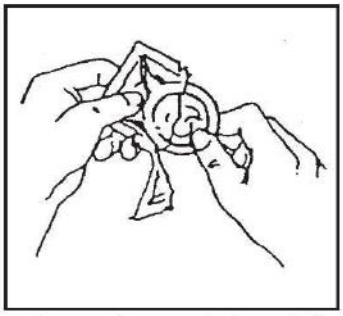
Sources of Condoms

- Health Post/Sub Health Post
- District Health Officer/District Public Health Officer
- Hospitals/Clinics
- Health Workers/Volunteers
- Medical Shops/Pharmacies
- *Paan Pasal*
- Groceries

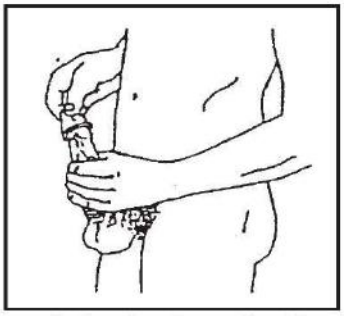
Proper care of Condoms

- Do not use condoms if packages are ripped or have a hole in them.
- Do not use condoms that are dirty, brittle, yellowed, sticky or damaged.
- Condom should be used before the expiry date stamped on it or within five years from the date of manufacturing.
- Store condom in a cool, dark and dry place because heat, light and humidity can damage condom.
- Do not keep condoms in a tight pocket or in a wallet for a long period.
- Do not use grease, oil, lotion or Vaseline® to make condoms slippery - these oils break the condom.
- Do not unroll a condom to check before putting it on.
- Tie the end of the condom to prevent spills or leaks and wrap it in paper. Burn or bury the condom with other garbage.

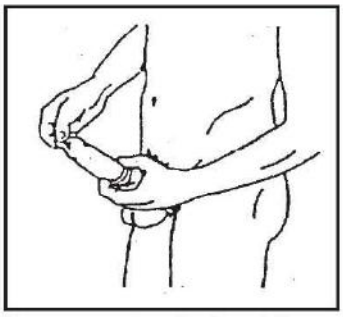
Stages for Proper use of Condom



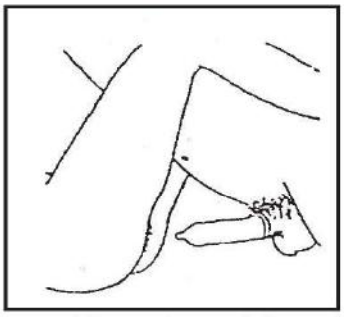
1. Open the condom packet carefully so that condom does not tear. **(If the condom was used from the wrong side do not use it again).**



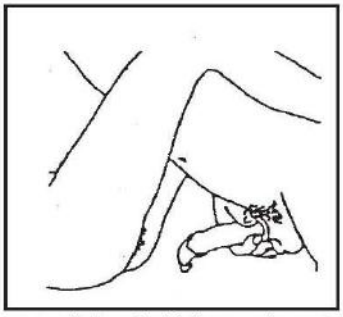
2. Squeeze the tip of condom and put it on the hard penis. **(Do not unroll the condom before putting it on the penis)**



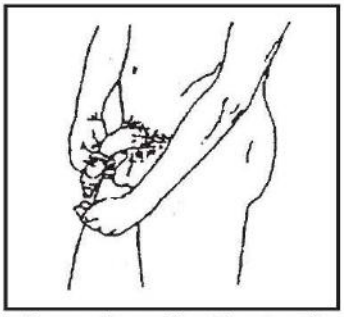
3. Continue squeezing the tip of the condom to prevent air form becoming trapped in the tip of the condom and unrolling it to cover the penis.



4. Always put the condom on before entering or coming in contact with your partners genitals, anus or mouth.



5. After ejaculation hold the condom at the base and take out the penis from the vagina before the penis becomes soft.



6. Slide the condom off without spilling liquid (semen) inside partner's vagina, anus or mouth.)

6. Quality assurance of laboratory investgations

Quality assurance (QA)
Quality Assurance is the total process that guarantees that the final results reported by a laboratory are as accurate as possible. This involves inspecting specimens, reviewing transcriptional measures, using the most reliable assays and verifying final reports.

Quality assurance is applied throughout the testing process at all testing sites. It is not a one time event. This is a continual process encompassing 3 phases: pre-analytical, analytical and post-analytical and there are multiple activities associated with each phase of testing.

Following procedures needs to be followed to prevent errors that may occur during the three phases of Quality Assurance Cycle:

1. **Pre-analytical phase**
- Monitor storage temperature for test kits and specimens
- Select an appropriate testing workspace
- Check inventory and expiration dates
- Review testing procedures
- Record pertinent information, and label test device
- Collect appropriate specimen

2. **Analytical phase**
- Perform and review Quality Control (QC)
- Follow safety precautions
- Conduct test according to written procedures
- Correctly interpret test results

3. **Post-analytical phase**
- Re-check patient/client identifier
- Write legibly
- Clean up and dispose of contaminated waste
- Package EQA specimens for re-testing, if needed

6.1 External Quality Assessment (EQA)

EQA is a system of objectively assessing the laboratory performance by an outside agency. This assessment can be retrospective and periodic but is aimed at improving the quality of laboratory services.

All RPR reactive sera and randomly selected 10% of all RPR non-reactive sera will be retained in the clinic and stored at -20°C in appropriate cryo-vials labelled with the patient number and date of collection. Thus retained and stored sera will be transported to National Public Health Laboratory (NPHL) at the end of each month for re-testing. The transportation of sera will be according to the requirements of the National Public Health Laboratory (NPHL).

National Public Health Laboratory will re-test the sera received from the sites; compare the test results of NPHL and sites; prepare the EQA report and send back the EQA reports to participating sites. If discrepancies occur between the site's test results and NPHL's test results; NPHL, jointly with the participating site, will try to find the root causes of the errors and solve the problem.

For Gram-stained slides of cervical and urethral specimens, sites will retain all the slides showing Gram-negative intracellular diplococci (GNID). These slides will be kept in slide boxes and stored at room temperature for up to three months in a dry, cool and dark area so as not to be exposed to direct sunlight. Similarly, equal number of Gram-stained slides of cervical or urethral specimens not showing GNID will also be retained and stored properly. Laboratory experts will be examine these slides during monitoring visit to the STI clinics and will provide feedback to the clinic.

6.2 Internal Quality control (IQC)

IQC denotes a set of procedures undertaken by the staff of health facility, medical as well as laboratory for continuously and concurrently assessing laboratory work so that the laboratory for supporting quality health care at patient produces quality results. ICQ comprises those measures that must be included during each test run to verify that the test is working properly. This includes ensuring correct temperature conditions and kit controls. Thus internal quality control indicates whether the test run was valid and has produced acceptable results. ICQ procedures are essential during daily routine work. They are applied to all work procedures and every test done in the laboratory. Applying IQC. procedures, errors can be removed or corrected immediately before the reports are dispatched. Sites will test RPR quality control samples in a frequency as recommended by the manufacturer of the test kit. Quality control results will be recorded and reviewed regularly.

General procedure for IQC

1. Strictly follow the kit leaflet (or Standard Operating Procedure) for each test
2. All specimens should be inspected before run the test to ensure that they are suitable.
3. Do not use haemolysed and contaminated samples.

4. Ensure that all specimens are properly labelled.
5. Bring all reagents and samples to room temperature and mix thoroughly before use.
6. Each batch of tests must include positive and negative controls.
7. Do not interchange reagents between different lots.
8. Reagents must be protected from any type of contamination.
9. The test kits must be stored at the required temperature.
10. Do not use expired kits.
11. Interpret the test result carefully using the test kits inserts.
12. Record the results with utmost care.

Smears will be taken and Gram-stained as part of the management of some patients. The slides, labelled with the patient's number, will be stored in each clinic in slide boxes in a cupboard. Separate boxes will be used for each category, i.e. male urethral, male rectal, female cervical and female rectal.

Reporting on external quality control

The National Public Health Laboratory will submit a written report on the results of each round of quality control.

Serious discrepancies between project reporting and external laboratory are to be discussed with the laboratory staff, and if necessary refresher training is to be provided.

Laboratory staff

Laboratory technician or laboratory assistant who has undergone STI laboratory training approved by National Public Health Laboratory (NPHL) can work as a laboratory staff in a STI clinic.

Note: All the laboratory staff should strictly follow the universal safety precautions during handling the specimens.

7. Disposal of Contaminated Waste

Much of the wastes from health care facilities are contaminated. Contaminated wastes may carry high loads of microorganisms, which are potentially infectious to any person who contacts or handles the waste, and to the community at large, if not disposed of properly. Contaminated wastes include blood, pus, urine, stool and other body fluids, in addition to items which contacted them, such as used dressings, cotton gauze, broken glassware and used needles.

Proper handling of contaminated waste is required to minimize the spread of infection to clinic personnel and to the local community. All contaminated materials should be decontaminated (by disinfecting or incinerating) before disposal. If materials are decontaminated or disposed of outside the health care center, they should be placed in a strong, leak-proof and puncture proof container to transport them from the health care center to the decontamination site.

Collection of different types of wastes

There should be different types of containers for collections depending on types of wastes generated in the health care settings. The person who generates the waste is responsible for putting it in the appropriate containers. Containers for collecting wastes should be designated using defined color-coding.

1. Red color: For collecting contaminated hazardous wastes other than sharps. Used test kits, pipette tips, infected dressing material etc. are solid wastes and collected separately from liquid wastes.
2. Yellow color: For syringes and other sharp wastes generated in the facility. Sharps can be kept in a puncture-proof container with a small hole on the top which allows personnel to put the materials, mainly syringes, into the container.
3. Blue color: For hazard free wastes like paper, plastic covers of syringes and other uninfected materials.
4. Liquid wastes are collected in a container with 0.5% hypochlorite solution. There must be enough solution in the container so that even when liquid waste is added, the concentration of the solution remains approximately the same.

Disposal of wastes

Utility gloves should be worn before handling and disposal wastes generated in health care settings. All the contaminated wastes from health care centers should be decontaminated before disposal.

Materials that are to be decontaminated or disposed of outside should be placed into a strong leak-proof covered container prior to transporting them outside. Sharp items should be transported in puncture – resistant containers.

Decontaminated liquid wastes can be poured down a utility drain or flushable toilet. Contaminated solid wastes should be incinerated or burnt in an incinerator (Incinerator can be made locally).

Needles and other sharp objects may not be destroyed by burning, and may later cause injuries, which can lead to a serious infection. Sharps should be decontaminated by dipping in 0.5% hypochlorite solution and then buried. Medical wastes which cannot be burnt should be disposed by onsite burial. Used needles of syringes can be destroyed by using needle destroyer. After disposal of infectious wastes, hands, gloves and containers should be washed.

8. Recording, Reporting and surveillance

One of the important components of STI Case Management process is recording, reporting and surveillance of STIs. STI case reports and surveillance results provide important information for the planning of STI prevention and control programmes, allocation of resources and monitoring the trends of STI/HIV. STI Case Management facilities in hospital and clinics can also be useful sites for conducting operational research and surveillance about STI and HIV.

All health care providers should therefore know the process and importance of record keeping/reporting of patients treated for STIs and realise their roles, responsibilities and contribution in STI/HIV Sentinel Surveillance.

Recording & Reporting
The NCASC provides a specific STI register and records which must be filled for each patient by all service delivery sites. Every month, the clinician in-charge of the service centre must ensure that the STI report form from the STI register is completed and sent to National Centre for AIDS & STI Control.

For each case, a report of diagnosis, treatment must be made and reported according to STI register. The diagnosis can be aetiological or syndromic.

Examples of monthly (periodic) and daily reporting form and STI register in given in **Annex-IV** and **Annex-V**

STI Surveillance
The ongoing and systematic collection, analysis, interpretation and dissemination of data to describe and monitor rates and trends of sexually transmitted infections to guide STI control efforts. STI surveillance is also useful for HIV programme as : 1) STIs facilitate HIV transmission and 2) STIs are markers of high-risk behaviours that also spread HIV. For these reasons, STI, HIV and behavioural surveillance are often combined and known as 'second-generation surveillance'. In Nepal HIV sentinel surveillance was conducted through 6 sentinel sites up to 2002. According to Second Generation Surveillance (SGS), HIV epidemic is classified into 3 stages:

1. **Low Level Epidemic**
   HIV prevalence consistently below 5% in any sub-populations.

2. **Concentrated Epidemic**
   HIV prevalence consistently over 5% in at least one sub-population.

3. **Generalized Epidemic**
   HIV prevalence consistently over 1% in pregnant women nationwide.

Nepal falls in the low and concentrated epidemic category as HIV prevalence among some high-risk core groups such as FSWs and IDUs has already reached over 5%, while prevalence remains below 1% among general population

Three primary components of STI surveillance are complementary. They are:

1. STI case reporting
2. STI prevalence assessment and monitoring
3. Specific STI surveillance activities such as:
   - laboratory assessment of antimicrobial resistance
   - validation of syndromic STI management
   - other special surveys and functions

In all three Low-level, Concentrated, and Generalized Epidemics, STI surveillance serves as:

- an early warning system for HIV infection and emergence of HIV in new groups or new geographical areas; and
- an evaluation tool for HIV prevention programmes.

1. STI case reporting

Nepal follows *"universal case reporting"* where all cases of a particular STI disease or syndrome are reported to the HMIS as well as NCASC. NCASC reviews, verify all reports received from implanting partners and collate then as one national report.

2. STI prevalence assessment and monitoring

The second major component of STI surveillance is prevalence assessment and monitoring in sentinel sites and population groups. The primary objective is to measure the burden of STIs and monitor trends. STI prevalence data can be especially useful for determining patterns of spread of STIs and where risk of HIV is greatest. High syphilis prevalence in pregnancy is an important cause of spontaneous abortion, stillbirth and congenital syphilis. It is also an indicator of HIV risk in the community. If STI surveillance data show that STI transmission is occurring, then HIV transmission may be occurring as well. STI prevalence data, especially syphilis data, are often available through antenatal clinics (ANCs) and *could be* compile, analyse and report syphilis prevalence. The same blood samples are often tested for HIV as part of HIV *serosurveillance*

3. Specific STI surveillance activities

Specific STI surveillance activities are supported with special funding used to supplement the other components of STI surveillance. Some are most useful for the management of STI control programmes, and others are useful for HIV programmes. These activities include:

- monitoring aetiologies for STI syndromes by conducting laboratory tests to find out which STI organisms are present in the most important STI syndromes
- measuring *antimicrobial resistance* patterns to find out if the organisms causing certain STIs have become resistant to antimicrobial therapies
- *Behavioural surveys* and especially behavioural surveys that are combined with STI and HIV testing to find out what behaviours are associated with STI and HIV infection in various groups)
- Research studies to address aspects of STI epidemiology that cannot be addressed by routine surveillance

Annexes

Annex - I

TREATMENT RECOMMENDATIONS FOR SPECIFIC INFECTIONS

1.0 GONOCOCCAL INFECTIONS

1.1 Uncomplicated ano-genital infections (Infection of urethra, cervix, rectum)
Cefixime, 400 mg oral single dose
Or
Ceftriaxone, 250 mg IM, single dose

Alternate regimen
Spectinomycin, 2 gm IM, single stat dose
or (either of the following single dose cephalosporin)
Cefotaxime 500 mg IM
Or
Cefpodoxime 400 mg oral

For Pharyngeal infection
Inj. Ceftriaxone 250 mg IM Stat
Plus
Treatment for chlamydial infection

For Epididymitis:
Inj. Ceftriaxone 250 mg IM Stat
Plus
Treatment for chlamydial infection (doxycycline 100 mg twice a day for 7 days)
Follow-up after one week

Advice sexual abstinence for up to 1 week after initiation of therapy provided symptoms have resolved and partner is also adequately treated

Note: Persistence of pain, discomfort or irritation during voiding urine beyond three months is a feature of chronic prostatitis and or chronic pelvic pain syndrome

1.2 Disseminated infection

Ceftriaxone, 1 gm IV, once daily
Or
Spectinomycin, 2 gm, IM two times daily
Or
Inj. Cefotaxime 1 gm IV every 8 hourly

Treatment should be continued for 24-48 hours after clinical improvement then switched to one of the following oral regimes to complete at least one week of antimicrobial therapy

Cefixime 400 mg oral twice a day or Cefpodoxime 400mg oral twice a day
Meningitis - As above but for 2 weeks
Endocarditis - As above but for 4 weeks

1.3 Gonococcal ophthalmia

In adults - As for ano-genital infections
In Neonates - Ceftriaxone, 50mg/kg IM, single dose to a maximum of 125 mg
Or
In addition, careful cleaning of the infected eye with sterile saline should be carried out at two to three hour intervals until discharge ceases to form. Care should be taken not to transfer infection from an affected to an unaffected eye.

1.4 Infants born to mothers with gonococcal infection

Ceftriaxone, 50mg/kg, as a single dose by IM to a maximum of 125 mg
Or
Spectinomycin, 25 mg/kg, as a single dose by IM to a maximum of 75 mg.

2.0 CHLAMYDIA TRACHOMATIS INFECTIONS

2.1 Uncomplicated ano-genital infections (adults)

Azithromycin, 1 gm, as a single oral dose
Or
Doxycycline[1], 100 mg, two times daily for 7 days
Or
Tetracycline[1], 500 mg, four times daily for 7 days
Or
Erythromycin, 500 mg, four times daily for 7 days

Neonatal -Conjunctivitis[2]
Erythromycin syrup, 50 mg/kg, per day in 4 divided doses for 2 weeks.
Chlamydial Pneumonia
Erythromycin syrup, 50mg/kg, per day in 4 divided doses for 3 weeks.

3.0 LYMPHOGRANULOMA VENEREUM

Doxycycline[1], 100mg, two times daily for 14 days
Or
ERYTHROMYCIN, 500mg, four times daily for 14 days
1. Contraindicated in pregnancy

4.0 SYPHILIS

4.1 Early Syphilis (Primary, secondary, latent syphilis of <2 years duration)

Benzathine penicillin, 2.4 million international units (IU) IM Stat, 1.2 million unit in each buttock

Or

Aqueous procaine penicillin, 1.2 million IU IM for 10 consecutive days
If penicillin allergic but non-pregnant patients:
Doxycycline[1], 100mg, two times daily for 14 days

Or

Tetracycline[1], 500mg, four times daily for 14 days
1. Contraindicated in pregnancy

4.2 Latent syphilis > 2 years duration

Benzathine penicillin, 2.4 million units, IM, weekly for 3 weeks
Or
Aqueous procaine penicillin, 1.2 million IU IM for 20 consecutive days

4.3 Cardiovascular Syphilis

Aqueous procaine penicillin, 1.2 million IU IM for 20 consecutive days
If penicillin allergic but non-pregnant, patients
Doxycycline[1], 100mg, two times daily for 30 days
Or
Tetracycline[1], 500 mg, four times daily for 30 days.
1. Contraindicated in pregnancy

4.4 Neurosyphilis

Aqueous crystalline penicillin, 2 million IU, intravenous injection, every 4

hours for 14 days.
Or
Aqueous crystalline penicillin, 1.2 million IU IM, daily for 10-14 days
Plus
Probenecid, 500 mg, four times daily, for 10 - 14 days

If penicillin allergic but non pregnant, patients
Doxycycline[1], 200 mg, two times daily for 30 days
Or
Tetracycline[1], 500 mg, four times daily for 30 days
1. Contraindicated in pregnancy

4.5 Syphilis in pregnancy
As above except in penicillin allergic patients
For penicillin allergic pregnant patients
Early syphilis (primary, secondary or latent < 2 years duration)
Erythromycin, 500 mg, four times daily for 15 days
Late syphilis (late latent > than 2 years duration or of indeterminate duration, late benign syphilis, cardiovascular syphilis or neurosyphilis)
Erythromycin, 500 mg, four times daily for 30 days

The effectiveness of erythromycin in all stages of syphilis is questionable.

All infants born to mothers who are sero-reactive for syphilis should be treated with a single intramuscular injection of *benzathine penicillin, 50,000 IU/kg* whether or not mother has been treated during pregnancy

4.6 Congenital syphilis
Early congenital syphilis: < 2 years of age and infant with clinical CNS involvement or abnormal CSF
Aqueous procaine penicillin, 50 000 IU/kg body weight, single daily dose IM for 10 days
With normal CSF
Benzathine penicillin 50,000 IU/kg, body weight by IM route stat
Congenital syphilis of more than 2 years duration
Aqueous crystalline penicillin, 300 000 IU/kg, daily IM, in divided doses, for 10 days – not to exceed 1.2 million units daily.

For penicillin allergic children after the first month of life
Erythromycin, 10 mg/kg, four times daily for 30 days.

5.0 CHANCROID

Ciprofloxacin, 500 mg, twice daily for 3 days
Or
Azithromycin, 1 gm, as a single oral dose
Or
Ceftriaxone, 250 mg IM, single dose
Or
Erythromycin, 500 mg, four times daily for 7 days

6.0 GRANULOMA INGUINALE (Donovanosis)

No controlled treatment trials have been published.
Azithromycin, 1 gm stat and then 500 mg as a single oral dose daily until the lesions have healed

Doxycycline[1], 100 mg, two times daily until the lesions have healed.
Since the causative organism cannot be cultured, treatment is empirical.
Numerous anecdotal reports suggest that chloramphenicol and erythromycin are also effective.
1. Contraindicated in pregnancy

7.0 GENITAL HERPES:

First clinical episode:
Acyclovir, 200 mg orally 5 times a day for 7 days
Recurrences: Acyclovir, 200 mg orally 5 times a day for 5 days for frequently occurring outbreaks more than six times a year

For suppressive therapy: Acyclovir, 400 mg 2 times a day continuously for 6 months to 2 years or more

8.0 GENITAL WARTS*

Podophyllin*, 10-25% in compound tincture of benzoine, applied carefully to the warts avoiding normal tissue (Not used in pregnancy). Wash off after 4 hours. Podophyllin applied to vaginal or anal warts should be allowed to dry before removing the speculum or anoscope. Retreat at weekly intervals.
Treat < 10 sq cm per session. Limit the total volume of podophyllin solution applied to < 0.5 ml per treatment session

Or
Trichloracetic acid (30-50%) (Can be used in Pregnancy)
Apply only to warts followed by powdering of the treated area with talc or sodium bicarbonate to remove unreacted acid. Repeat application at weekly intervals.
Note: ***Do not give these drugs to patients to apply at home.***

9.0 TRICHOMONAS VAGINALIS

Tinidazole*, 2 gm, in a single oral dose
Or
Metronidazole*, 400 mg, three times a day for 7 days

Patients taking Tinidazole or Metronidazole should be cautioned to avoid alcohol

10.0 BACTERIAL VAGINOSIS

Tinidazole*, 2 gm, as a single oral dose
Or
Metronidazole*, 400 mg, three times a day for 7 days
. Contraindicated in the first trimester of pregnancy

11.0 GENITAL CANDIDIASIS

Fluconazole, 150mg, oral single dose stat. (Not given in pregnancy)
Or
Clotrimazole, 100mg, vaginal pessary for 6 nights locally

IMPORTANT NOTE

Concomitant HIV infection can aversely affect the response to treatment of conventional sexually transmitted diseases. In patients, with HIV infection the response to treatment should be carefully monitored particularly if alternative regimes are used.

12.0 SCABIES

Adults and children ≥ 10 years of age
Gamma-Benzene Hexachloride, 1% lotion/cream applied to all areas of the body from neck down and washed off the next day. Can be repeated after one week if necessary

Children < 10 years of age, pregnant or lactating women
Benzyl Benzoate, 25% applied to all areas of the body from the neck down nightly for 3 nights
Or
Crotamition, 10% as above
Or
Permethrin cream, 5% as above

Failure of nodules to resolve after topical treatment should be treated with intra-lesional injection of Triamcinolone, 10-40 mg. Failure to resolve after this should be referred to a dermatologist.

13.0 PEDICULOSIS PUBIS[2]

Gamma-Benzene Hexachloride[1], 1% lotion/cream applied to all hairy areas of the body excluding the scalp and washed off after 8 hours.

Pregnant and lactating women
Crotamition, 10% applied to all hairy areas of the body nightly for 2 nights
Or
Permethrin, 5% as above
1. Contraindicated in the first trimester of pregnancy

Annex – II

REVIEW COMMITTEES FOR THE NATIONAL GUIDELINES FOR CASE MANAGEMENT OF STI PATIENTS (2000)

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Annex - III

REQUIREMENTS FOR PUBLIC OR PRIVATE FACILITIES PROVIDING STI SERVICES

Referral Clinics/Laboratories	Peripheral Facilities
1. Sterile Swabs	1. Microscope + Microscopic Oil
2. Glass Slides	2. Glass Slides
3. Cover slips	3. Cover Slips
4. Inoculating Wire Loop and Stand	4. Sterile Swabs
5. Petri Dishes	5. Tray
6. Incubator	6. Staining Rack
7. Autoclave + Ordinary Heater	7. Forceps
8. Distillation Plant (glass)	8. Spirit Lamp/burner
9. Weighing Machine with Accessories	9. Steel or Plastic Buckets/Container
10. CO2 Jar or CO2 Incubator	10. Glass Wares - Test Tube
	- Serological Pipettes
11. Serological Pipettes	11. Micro Pipettes
12. Micro Pipettes	12. Test Tube Rack
13. VDRL Shaker	13. Centrifuge
14. ELISA Reader	14. Dropping Pen
15. Microscope + Microscopic Oil	15. Diamond Pen
16. Glassware - tubes, Pasteur Pipettes	16. Table Lamp
17. Steel or Plastic Buckets	17. Refrigerator
18. Water Bath	18. Cold box
19. Burner	19. Serum container
20. Refrigerator	20. Serum container box
21. Tray	
22. Test Tube Rack	
23. Centrifuge	

24. Forceps	
25. Dropping Bottles	
26. Hot Air Oven	
27. Diamond Pen	
28. Glass Marker	
29. Table Lamp	
30. Test Kits/Regents	
• RPR/VDRL	
• TPHA	
• Set of Gram Staining Reagents	
• pH paper	
• Normal Saline	
• Distilled water	
• KOH	
• HIV rapid test kits	

Annex – IV

National Centre for AIDS and STD Control
STI Patients Reporting Form

1 STI Unique ID
2 Name of the reporting institution
3 District
4 Municiipality/VDC
5 Region
6 Name of the facility incharge
7 Date of reporting DD MM
8 Reported by

		Socio Demographic Information						STI Diagnosis			Syphilis screening & routine STI Test						Other information			
Data ID	Date of Registration	Age(Year completed)	Sex	Marital Status	Occupation	Education	District of Residense	Type of case	Syndromic diagnosis & Treatment	Risk Assessment(Group)	Person screened for Syphilis for the first time of his/her visit to the clinic	Person RPR(Rapid Plasma Reagin) positive and cofirmed by TPHA (Treponemapallidum Haemagglutination Assay)	Person tested with Wet Mount for the first time of his/hervisit to the clinic	Person found to be positive for TV(Trichomonas Vaginalis)	Person found to be positive for Yeast cells	Person tested with KOH(Potassium Hydroxide) for the first time of his/her visit to the clinic	Presumtive treatment to sex worker	Asymtomatic treatment of partner	In Referred from	Out Referred to
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29

Coding

Marital Status

1 Unmarried
2 Married/Partner
3 Divorced/Separated
4 Widowed
5 Not Applicable

Sex

1 Male
2 Female
3 Third Gender (TG)

Occupation

1
2
3

Education

Syndromic diagnosis & Treatment

1. Urethral Discharge Syndrome (UDS)
2. Scrotal Swelling Syndrom (SSS)
3. Vaginal Discharge Syndrome (VDS)

a) Vaginitis
b) Cervictis
c) Both

4. Lower Abdominal Pain Syndrome (LAPS)
5. Neonatal Conjunctivitis Syndrome (NCS)
6. Genital Ulcer Disease Syndrome (GUDS)

a) Herpes Genitalis
b). Syphilis/Chancoid

7. Inguinal Bubo Syndrome (IBS)
8. Anorectal STIs
9. Specified STIs

a).Secondary syphilis

b) Latent Syphilis

c). Genital Wart

d) Others (e.g. scabies, lice infestation, balanitis, hepatitis etc)

Type of case

1 New
2 Old

Risk Assessment(Group)

1 FSW
2 MSW
3 IDU
4 MSM
5 Client of FSW
6 Migrant
7 Spouse of Migrant
8 Other

1 Yes
2 No

Person RPR positive and and cofirmed by TPHA

1 Yes
2 No

1 Yes
2 No

Person found to be positive for TV

1 Yes
2 No

Person found to be positive for Yeast cells

1 Yes
2 No

1 Yes
2 No

Presumtive treatment to sex worker

1 Yes
2 No

Asymtomatic treatment of partner

1 Yes
2 No

In Referred from

1 Other health care facilities for STI management
2 VCT

Out Referred to

1 Other health care facilities for STI management
2 VCT

Annex - V

National AIDS Programme (NCASC)
Monthly STI report from

STI unit Unique ID				
Master facility unit ID				
Name of the reporting institution:				
District:				
Region				
Name of the facility incharge				
Month and Year of reporting:	MM		YYYY	

Syndromic Management No. of Patients Attending the STD Clinic/OPD

Syndromic diagnosis	Age/Gender wise break up of cases																								Total		
	New Cases			OLD Cases			New Cases			OLD Cases			New Cases			OLD Cases			New Cases			OLD Cases			New + Old Cases		
	<15			<15			15-24			15-24			25-49			25-49			50+			50+					
	M	F	TG	M	F	TG	M	F	TG	M	F	TG	M	F	TG	M	F	TG	M	F	TG	M	F	TG	M	F	TG
1. Urethral Discharge Syndrome (UDS)																											
2. Scortal Swelling Syndrome (SSS)																											
3. Vaginal Discharge Syndrome (VDS)																											
a) Vaginitis																											
b) Cervicitis																											
C) Both																											

4. Lower Abdominal Pain Syndrome (LAPS)																									
5. Neonatal Conjunctivitis Syndrome (NCS)																									
6.Total no. of Genital Ulcer Disease Syndrome (GUDS)																									
a) Herpes Genitalis																									
b) Syphilis/ Chancoid																									
7. Inguinal Bubo Syndrome (IBS)																									
8. Anorectal STIs																									
9. Specified STIs																									
a.Secondary syphilis																									
b) Latent Syphilis																									
c). Genital Wart																									
d) Others (e.g. scabies, lice infestation, balanitis, hepatitis etc)																									
Total OPD cases																									

Note : Syndromic diagnosis is not unique head count of the patients, One patient can have multiple syndromes

	MARPs							
Syndromic diagnosis	FSW	MSW	MSM	IDU	CL of FSW	Migrants	Others	Total
1. Urethral Discharge Syndrome (UDS)								
2. Scortal Swelling Syndrome (SSS)								

3. Vaginal Discharge Syndrome (VDS)								
a) Vaginitis								
b) Cervicitis								
C) Both								
4. Lower Abdominal Pain Syndrome (LAPS)								
5. Neonatal Conjunctivitis Syndrome (NCS)								
6.Total no. of Genital Ulcer Disease Syndrome (GUDS)								
a) Herpes Genitalis								
b) Syphilis/ Chancoid								
7. Inguinal Bubo Syndrome (IBS)								
8. Anorectal STIs								
9. Specified STIs								
a.Secondary syphilis/latent syphilis								
b) Latent Syphilis								
c). Genital Wart								
d) Others (e.g. scabies, lice infestation, balanitis, hepatitis etc)								
Total OPD cases								

Information on Syphilis screening and routine STI tests										
Type of Disease	Gender wise breakup			Risk groups						
	Male	Female	TG	ANC	FSW	MSW	MSM/TG	IDU	CLof FSW	Migrants
Total number of persons screened for syphilis for the first time of their visit to the clinic										
Total number of persons who are RPR positive and confirmed by TPHA										
Total number of person tested with wet mount for the first time of their visit to the clinic										
Total number of persons found to be positive for TV										

Total number of persons found to be positive for Yeast cells										
Total number of persons tested with KOH for the first time of their visit to the clinic										
Total										

Other Information			
Type of Disease	Male	Female	Total
Number of sex workers provided presumptive treatment			
Number of asymptomatic partners treated			
Number of patients referred			
a) To other healthcare facilities for STI management			
b) VCT			
Number of referred patients provided treatment			

Prepared by:

Name/ Designation:

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