



DRAFT COPY

SEXUALLY TRANSMITTED INFECTIONS

TREATMENT GUIDELINES FOR USE BY

SELECTED HEALTH SERVICE PROVIDERS

IN THE

OUTPUT BASED AID (OBA) PILOT PROJECT

IN MBARARA DISTRICT



2006

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ACRONYMS

ACP	AIDS Control Programme
AIDS	Acquired immuno-deficiency syndrome
ART	Anti retroviral therapy
ARV	Anti retroviral
BV	Bacterial vaginosis
ELISA	Enzyme linked immuno-sorbent assay
FP	Family planning
FTA	Fluorescent treponemal antibody
GUD	Genital ulcer disease
HBV	Hepatitis B Virus
HCI	Health Consult International
HIV	Human immuno-deficiency virus
HSV	Herpes simplex virus
IU	International units
IUCD	Intra uterine contraceptive device
KFW	
LCR	Ligase chain reaction
LGV	Lymphogranuloma venereum
MCH	Maternal Child Health
MSI-U	Marie Stopes International Uganda
MU	Mega units
NGU	Non gonococcal urethritis
PCR	Polymerase chain reaction
PHC	Primary Health care
PID	Pelvic inflammatory disease
RPR	Rapid plasma regain
STD	Sexually transmitted Disease
STI	Sexually transmitted infection
TOM	Tubo-ovarian mass
UDS	Urethral discharge syndrome
VCT	Voluntary counseling and HIV testing
VDRL	Venereal Disease Research Laboratories
HPV	Human Papilloma Virus

ACKNOWLEDGEMENTS

INTRODUCTION

The control and prevention of **Sexually Transmitted Infections (STIs)** remain a major global public health problem. Although control of STIs has essentially been achieved in some regions, the incidence of STIs is high or still increasing in others, especially in parts of the developing world and other regions where the resources needed to provide prompt, effective STI diagnosis are limited.

Developing, integration, and effective use of simple and rapid STI diagnostic tests will result into a reduction of STIs and ultimately decreased HIV/AIDS transmission, since a link between STIs and increased transmission or acquisition of HIV infection has been identified. Where concentrated efforts to control STIs have been made as in Mwanza, Tanzania, a significant decrease in the incidence of new cases of HIV infection has resulted.

In addition to HIV/AIDS control, prompt diagnosis and effective treatment of STIs is needed to reduce its overall transmission. The need for simple and rapid diagnostic tests is especially urgent for women, since the health consequences and complications of unrecognized, untreated disease may be severe and can result in PID, Infertility, complications in pregnancy and low birth weights and congenital infections in their children. Appropriate laboratory test methods for diagnosis of STIs also are needed for case finding to identify and treat asymptomatic individuals capable of transmitting disease. STI control must continue to be a high priority for international health programs.

A clinical laboratory for diagnosis of STIs should be an integral part of STI control programmes. This is not often possible, however, because many healthcare systems and providers lack adequate facilities, resources, personnel, and time needed to perform effective laboratory diagnosis. In addition, since laboratory diagnosis often takes hours or even days to obtain results, many patients cannot or do not return for their results, and are lost to therapy and follow-up. Therefore, providers are forced to rely on clinical symptoms, risk assessment, or Syndromic algorithms for diagnosis. Unfortunately, many clinical signs and Syndromic protocols, especially in women, lack sufficient accuracy to be effective, result in patient over treatment, and do not address the greater pool of asymptomatic patients that may represent the core transmitters of disease.

The Government of Uganda through Ministry of Health (**MoH**) has continued to prevent and control Sexually Transmitted Infections even with the limited resources available. The MoH has always harnessed working in collaboration with health partners/stakeholders. Marie Stopes International Uganda in conjunction with KFW are working with the Ministry of Health on a pilot project namely; Output Based Aid (OBA) voucher system in Mbarara. This project aims at improving STI diagnostic capacity and care seeking behaviour among others. This is in line with the MoH goal of prevention and control of STIs and subsequently a reduction in HIV/AIDS prevalence.

This trainee's manual has been developed to serve as training and reference literature for healthcare providers participating in this pilot project.

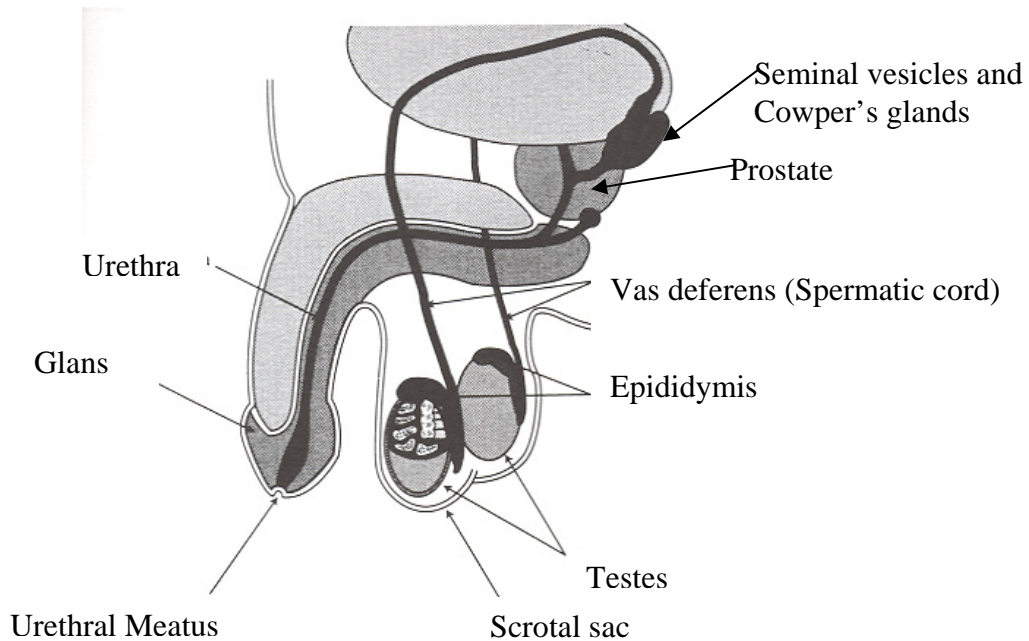
UNIT 1
BASIC CLINICAL ANATOMY AND PHYSIOLOGY OF THE GENITAL TRACT

Knowledge of the reproductive organs is necessary for providing sex education, STI diagnosis and management. Local names of the reproductive and sex organs and local sexual terminology should be encouraged and used.

The male reproductive organs consist of the:

- Penis with the shaft, prepuce and glans penis
- Glands (Cowper's glands, prostate, seminal vesicles)
- Urethra which opens into a meatus
- Scrotum
- Testes
- Epididymis
- Vas deferens

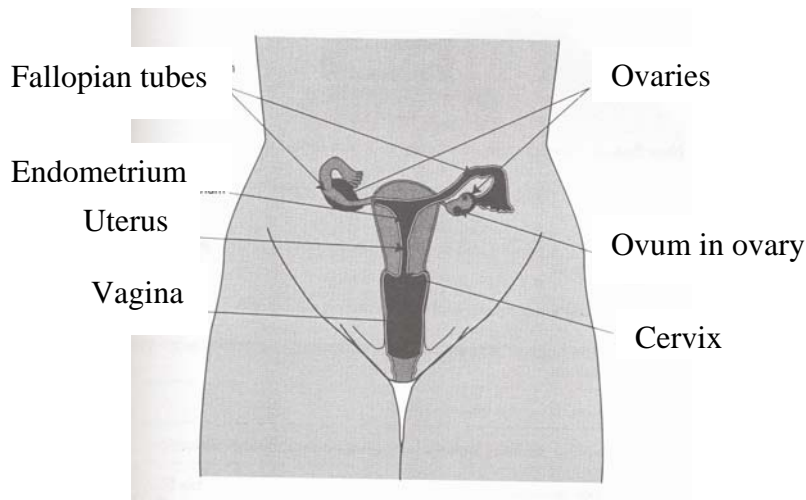
An outline of the male reproductive organs in section is shown below:



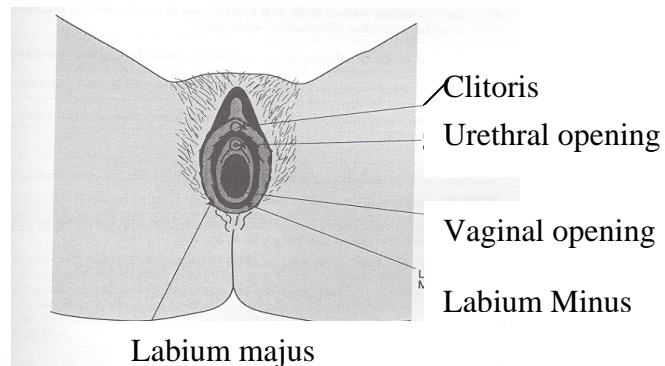
The female reproductive organs consist of:

- Vulva consisting of labia majora and minora, vaginal introitus and urethral meatus
- Clitoris
- Mons pubis and the pubic hair
- Bartholin's glands
- Perineal body
- Vagina with the vaginal canal, the anterior and posterior fornices.
- Cervix and uterus
- Fallopian tubes
- Ovaries

The internal female reproductive organs are shown below.



The vulva is the external part of the female sex organs shown below:



The normal functions of the reproductive organs:

The reproductive organs function to propagate the human species, a function that requires sexual union of the male and female organs.

The male reproductive organs

The male reproductive organs are responsible for production and maturation of sperms. The system produces stores and delivers the sperms into the female sex organs during sex with the aim of fertilising the ovum.

The testes hang on the outside in a sac called the scrotum. They manufacture the sperms and are responsible for their maturation. They also produce hormones that are responsible for the male sex characteristics.

The epididymis is attached to the posterior and upper portion of each testis. It contains ducts in which the sperms are stored and through which they pass into the vas deferens. Vas deferens transport sperms from the epididymis to the ejaculatory duct.

The prostate and seminal vesicles are glands that produce seminal fluid, a viscous fluid, which nourishes the spermatozoa and serves as a transport medium.

The urethra is a tube through which semen is discharged during ejaculation. It opens at the urethral meatus.

The penis is the organ, which takes part in sexual intercourse. It is the organ of copulation. When stimulated, it gets engorged with blood leading to erection. It consists mainly of an erectile and a spongy body. It terminates at the glans, which in the uncircumcised is covered by a fore skin - the prepuce

The female reproductive organs

The Vulva consists of the labia majora (outer lip of the vagina) and the labia minora (inner lip of the vagina).

The Clitoris consists mainly of sensitive and erectile tissues.

Bartholin's glands are located near the vaginal introitus and produce lubricating fluids.

The vagina is a tubular structure leading from the uterus to the vaginal introitus. Sexual intercourse takes place in this tube and it acts as the passage for the baby during delivery. It has anterior and posterior fornices.

The cervix is the lower part of the uterus projecting into the vagina and is the external opening of the uterus.

The uterus takes part in menstruation during which its lining is shed. It holds the foetus during gestation and the placenta, which nourishes the foetus.

The Ovary produces hormones that are responsible for the female secondary sexual characteristics and also periodically produces the ovum.

The Fallopian tubes are the passage through which the ovum passes to reach the uterus and it is here that fertilization usually occurs.

Development changes associated with sexual maturity:

Prior to puberty, the growth of the reproductive organs proceeds at the same rate as the rest of the body. However, at the stage of puberty, which occurs from 11 - 18 years in girls and from 12 - 21 years in boys, there are significant changes in the reproductive systems that prepare the body for sex, reproduction and child rearing. These changes constitute the secondary sexual characteristics, brought about by hormonal changes.

Secondary sexual characteristics in the male include:

- Deepening of the voice.
- Hair growth in the pubic area, armpits, beards.
- Growth in general body size i.e. height and weight.

- Increase in size of the sexual organs mainly the penis and testes.
- Ejaculation may start with experiencing of “wet dreams”.

Secondary sexual characteristics in the female include:

- Increase in size of the breasts and darkening of the areola.
- Growth of pubic hair and hair in the armpits.
- Increase in body size i.e. the height and weight with the rounding of the figure.
- Changes in the voice.
- Menstruation usually commences.

These physiological changes are accompanied by psychological changes. It is important that the sexual organs fully develop before the body is ready for sex and reproduction. In adolescents, the body is still developing and is not yet ready for sex and reproduction.

Physiological and psychological changes associated with sex.

During puberty, the sexual organs are developing in readiness for sex, reproduction and child rearing. When the individual is ready for sex, he undergoes certain physiological and psychological changes.

In the male, stimulation comes from various sources such as sight, touch, sound or smell or even mere imagination or thinking about someone. The higher centres are stimulated and relay messages via the spinal cord to the sexual organs resulting in sexual stimulation. The penis erects in anticipation for penetration of the vagina. This is brought about by engorgement and filling of the blood in the spongy and erectile tissues of the shaft of the penis. There is a slight secretion of fluid at the glans penis, which serves a lubricating function. During coitus, the penis penetrates the vagina. During orgasm (the point of maximum physical and psychological excitement), ejaculation of the semen is achieved by contraction of the epididymis and seminal vesicles with expulsion of the semen via the ejaculatory ducts. This is followed by both physical and mental exhaustion and the penis relaxes and becomes flaccid.

In the female, the same factors may precede stimulation. In anticipation for sex, the vaginal walls and the glands in the vulval area secrete lubricating fluids and the size of the vagina is slightly increased. There is in addition engorgement of the vagina and vulva with resultant erection of the clitoris. At the point of orgasm in the females, there is a nervous release that results in muscular tightening and relaxation of the perineal muscles, which is accompanied by a pleasurable sensation. This too is followed by a period of both mental and physical relaxation.

Further reading:

1. Graney D, Vontver L. Anatomy and Physical Examination of the Female Genital tract. In Holmes K, Mardh P-A, et al, Eds. Sexually Transmitted Diseases. New York: McGraw-Hill 1999: 685-697
2. Krieger J, Graney D, Clinical anatomy and Physical Examination of the Male Genital tract. In Holmes K, Mardh P-A, et al, Eds. Sexually Transmitted Diseases. New York: McGraw-Hill 1999: 600-721

UNIT 2
BASIC FACTS ABOUT SEXUALLY TRANSMITTED INFECTIONS

One or more microorganisms that are mainly transmitted cause sexually transmitted infections from one infected person to another during unprotected sexual intercourse. The table below summarises the most common STDs.

STD	Main Clinical Features	Causative agent	Incubation period
Gonorrhoea	Pus discharge from the urethra or the cervix, dysuria, frequency.	<i>Neisseria gonorrhoea</i>	2 - 6 days
Genital candidiasis	White curd like discharge coating the walls of the vagina that is itchy. Soreness, excoriation and cuts.	<i>Candida albicans</i>	May be endogenous and recurrent
Trichomoniasis	Greenish itchy discharge from the vagina with offensive smell	<i>Trichomonas vaginalis</i>	Variable
Chancroid	Dirty painful ulcer, Usually one that is undermining	<i>Haemophilus ducreyi</i>	1 - 3 weeks
Herpes genitalis	Recurrent small multiple painful ulcers which begin as vesicles	<i>Herpes Simplex Virus (HSV)</i>	2 - 7 days (initial infection)
Lymphogranuloma venereum (LGV)	Swollen painful inguinal glands (buboes) occasionally with an ulcer and may occasionally be bilateral	<i>Chlamydia</i> organisms - <i>LGV serovariants L1-L3</i>	3 - 30 days.
Granuloma inguinale	Heaped up (beefy) ulcer, usually painless which may be associated with inguinal lymph node swellings	<i>(Calymatobacteria)</i> <i>Klebsiella granulomatis</i>	1 - 10 weeks
Syphilis	Primary chancre is a painless, well-demarcated ulcer. Other features depend on the clinical stage.	<i>Treponema pallidum</i>	2 - 4 weeks
Non gonococcal urethritis / cervicitis	Thin non itchy discharge from the cervix or urethra	<i>Chlamydia trachomatis</i> <i>Mycoplasma hominis</i> and others	7 - 14 days
Bacterial vaginosis	Thin discharge with a fishy smell from the vagina	Overgrowths of <i>Gardnerella vaginalis</i>	May be endogenous
Hepatitis B virus infection (HBV)	Jaundice with inflammation of the liver	<i>Hepatitis B Virus (HBV)</i>	
HIV / AIDS	According to WHO clinical criteria for the case definition for AIDS	<i>Human Immuno deficiency Virus (HIV)</i>	Months – 10 years or more
Scabies	Vesicles containing the mites in pubic area	<i>Sarcoptes scabiei</i>	30 days
Venereal warts	Finger like growths on the genitals	<i>Human Papilloma Virus (HPV)</i>	Weeks - months
Pediculosis	May see nits in pubic hair, itching in pubic area.	<i>Phthirus pubis (pubic lice)</i>	Days
Ring worm	Patches of hypo / hyper-pigmentation in the pubic area.	<i>Tinea organisms</i>	

In most instances, STIs present asymptotically or mildly symptomatic. However, individuals with such infections are infectious and at risk of complications. That is why the term STI is recommended to cater for both symptomatic and asymptomatic infections. Some of the STIs listed above, mainly vaginal candidiasis and bacterial vaginosis are not always sexually transmitted. They can be endogenous infections. This has implications on partner notification. This fact should always be explained to patients to avoid uncalled for discord in marriage or relationships.

Etiological classification of STIs:

STIs can be grouped into 5 groups according to causative agents namely:

- i. Bacterial STIs: This category includes: gonorrhoea, syphilis, chancroid, LGV, non gonococcal genital infection and bacterial vaginosis
- ii. Viral STIs: This category includes: Genital herpes, viral warts, HIV, HBV.
- iii. Protozoa STIs: This includes trichomoniasis
- iv. Fungal infections: e.g. genital candidiasis and ring worms
- v. Infestations e.g. pubic lice and scabies.

Common complications of STIs

Complications of STIs are long-term outcomes or sequelae of untreated or poorly treated STIs. Most STIs are associated with serious complications that can be avoided if early and appropriate treatment is provided to patients. STI complications include:

1. Complication of gonorrhoea and non gonococcal genital Infections:

The complications of gonococcal and non-gonococcal genital infections vary by sex and anatomical site affected.

a) Complications in the male include:

- Urethra: urethral stricture
- Seminal Vesicles: seminal vesiculitis
- Epididymis and testes: epididymorchitis

These complications can result in reduction of spermatozoa in semen and male infertility.

b) Complications in the female include:

- Bartholin's gland: Bartholinitis and Bartholin's abscess
- Fallopian tubes: Salpingitis. This may be further complicated by:
 - Pelvic inflammatory disease (PID).
 - Tubo - ovarian masses (TOM)
 - Irregular and painful and heavy menstrual bleeding
 - Ectopic pregnancies
 - Secondary infertility

c) Complications in the babies:

- Eyes: - Ophthalmia neonatorum with risk of corneal ulceration and blindness

2. Complications of Syphilis:

Untreated or poorly treated syphilis can lead to:

a) Secondary syphilis (4 weeks to months)

Lesions on different parts of the body characterize secondary syphilis, such as:

- Skin: - non itchy skin rash extending to the palms and soles
- Alopecia
- Lymph nodes: - painless enlarged discrete lymph nodes especially behind the ears (post auricular) and above and behind the elbows (epitrochlear)
- Wet areas: Flat topped swellings (condylomata lata or syphilitic warts)

b) Latent syphilis:

This may occur from two years, characterized by asymptomatic infection and may only be detected by blood test such as VDRL or RPR.

c) Late syphilis:

This stage may occur from four years. It can affect any part of the body and lead to:

- Skin with characteristic lesions referred to as gummata
- Bone leading to swelling and thickening of affected bones
- Eyes characterized by iritis and choroidoretinitis
- Cardiovascular system lesions e.g. aortic valve incompetence and aortic aneurysm
- Nervous system characterized by “general paralysis of the insane”, and loss of sensation of the feet leading to painless sores of the feet.

d) Syphilis and pregnancy outcomes:

The complications of syphilis on pregnancy are characterised by an apparent “improving obstetric performance” i.e. if a mother infected with syphilis is not treated, she can experience the following pregnancy outcomes in a consecutive order.

- Late abortions
- Intra uterine foetal deaths with macerated still births
- Premature delivery
- Intra uterine foetal growth retardation
- Live child born with congenital syphilis

e) Congenital syphilis (Discussed in more detail in Unit 12):

The features of a baby with congenital syphilis are similar to secondary syphilis together with other congenital abnormalities, growth retardation and mental sub-normality.

3. Complications of other STIs:

Other STIs are also associated with complication that may include:

1. Genital ulcers can lead to fibrosis of affected organs
2. Venereal warts due to HPV are associated with cancer of the cervix
3. HBV can cause chronic hepatitis that may predispose to hepatocellular carcinoma
4. LGV often results in fistulae, sinuses and fibrosis

Further reading:

Holmes K, Handsfield H. Sexually Transmitted Diseases. In Harrison's Text Book of Medicine

UNIT 3
PUBLIC HEALTH IMPORTANCE AND EPIDEMIOLOGY OF STIs

STIs constitute a significant cause of morbidity and mortality world wide, particularly in developing countries. However, their importance had not been realized till only recently, in the wake of the HIV epidemic.

Why should STIs be a public health priority?

There are several reasons in favour of prioritizing STIs on the public health agenda world wide, particularly in developing countries. Some of the most important include the following:

1. **Magnitude:** The burden of STIs is high world wide in terms of their associated morbidity, mortality and socio-economic impact. WHO estimates about 333 million new cases of curable STIs each year, the disproportionate share of which is in Sub Saharan Africa. In Uganda, STI or related complications have consistently ranked among the leading causes of out patient consultations in public health facilities, accounting for about 20% of adult out patient consultations in public health facilities for many years. At population level, one study in rural Uganda found high prevalence of STIs, with up to 50% of adults 15-49 having at least one STI.
2. **Complications:** Untreated or poorly treated STIs lead to very serious complications particularly among women where they are associated with adverse reproductive health consequences. Among children STIs cause blinding eye infections, congenital malformation, premature deliveries, low birth weight, growth retardation, mental sub-normality, etc. Among men and women, they can lead to secondary infertility and chronic debilitating conditions. The psychological consequences of such complications to affected individuals can be very disturbing.
3. **Socio-economic consequences:** It is indisputable that STIs are associated with significant socio-economic consequences. These include costs of treatment, cost of absenteeism from work, social stigmatization, psychological consequences of complications such as secondary infertility, etc. The World Bank estimates that STIs excluding HIV rank second only to maternal causes as the leading cause of healthy years of productive life lost among women of reproductive age in developing countries.
4. **STIs are infectious and transmissible.** As such, effective public health interventions are necessary to break the chain of transmission.
5. **STIs are preventable and many are curable:** The realization that the serious consequences of STIs can be averted through preventive interventions and effective case management renders it incumbent on all public health managers to accord to high priority to STI control.

6. Cost effectiveness of interventions: Interventions for STI control have been proved to be cost effective. STI control interventions directly benefit the individual and the community. A cost effectiveness analysis by the World Bank group showed that STI control interventions were comparable to tuberculosis control and measles immunization since their impact is felt beyond the affected individual. STI case management is therefore a public health measure, whose cost should not be born only by the affected individual.
7. Enhancement of HIV transmission: This fact has been demonstrated in many epidemiological and biological studies. Many symptomatic STIs enhance the transmission of HIV through increased viral shedding as well as providing a weakened barrier for acquisition of HIV. Effective case management of STIs not only reduces viral shedding in genital secretions, but also was demonstrated in a community randomized longitudinal study in Mwanza region to reduce HIV incidence by 42%.
8. Stigma: In many societies, STIs are associated with stigma, a fact that reduces health seeking behaviour. However, this only serves to drive the epidemic even more underground. Public investment and involvement is vital to break this conspiracy of silence.

Determinants of STI Epidemiology in Sub Saharan Africa:

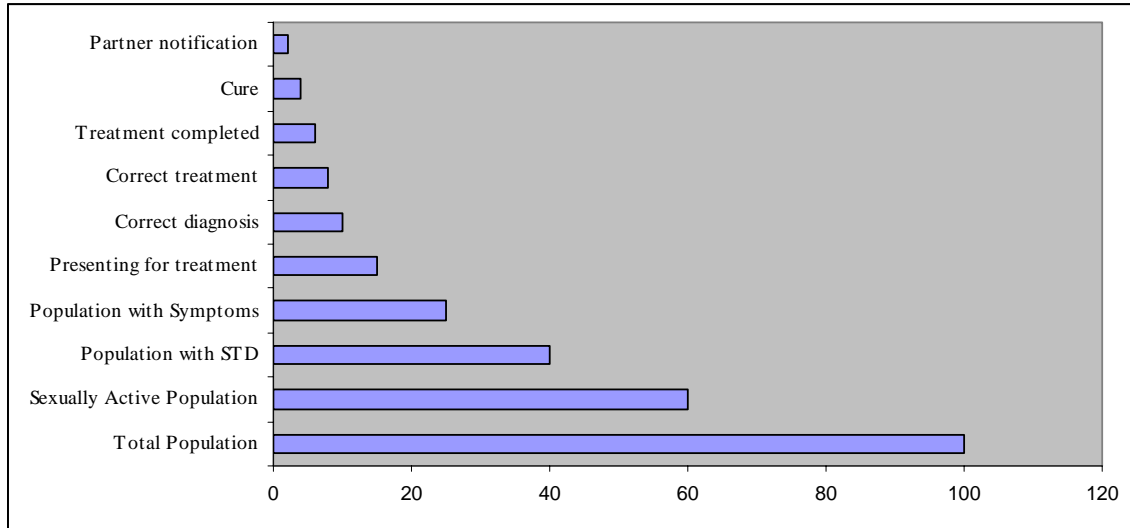
The high incidence and prevalence of STIs in developing countries is partly explained by the prevalence of many risk factors. They include the following:

1. Young age structure: Youth constitute the majority of the population in Sub Saharan Africa. Young people are more likely to engage in multiple sexual relationships with a concomitant increased risk of HIV/STI. In addition, they are more likely to lack access to barrier methods and STD care services, which increase the period of infectiousness. In addition, young women are more susceptible to STI acquisition due to hormonal changes.
2. Gender inequalities, poverty, wars and urbanization all combine to lead to break down in traditional social values with a resultant increase in such high risk activities as commercial sex that are associated with high rates of partner change and attendant increase in risk of STIs.
3. Poor health seeking behaviour and lack of effective services for STD care in most developing countries imply that the period of infectiousness is increased which ultimately leads to increased incidence and prevalence of STIs.
4. Social and cultural beliefs, attitudes and customary practices that encourage risky sexual behaviour such as multiple sexual partnerships by men are highly prevalent in African communities.
5. Sub clinical or asymptomatic infection especially among women which results in delayed treatment while at the same time infectious to others.

STI Epidemiological/Operational Model:

While effective STI case management represents the cornerstone of STI control, STI control efforts must go beyond case management, given that only a small proportion of people with STIs actually access health care services. The epidemiological model of STIs developed by Oval and Piot summarises this situation.

Operational model of STDs in a community:



The model clearly shows that the proportion of people in any community who have or at the risk of STDs exceeds those seen in clinics.

Implications of the model for STD Control:

The scenario presented by the STI operational model mandates various interventions to contain the STI epidemic. They include:

- Reduce risk through education to communities and specific groups
- Condoms promotion through improving their availability to the sexually active
- Case finding through partners notification and screening programmes such as routine antenatal syphilis serological screening.
- Promotion of health seeking behaviour through early STI symptom recognition.
- Provision of user friendly services and increase accessibility of services particularly for youth and other vulnerable groups
- Other innovative approaches for STD service delivery e.g. training pharmacists, traditional healers, birth attendants etc in STI recognition and referral.
- Social marketing of STI treatment kits e.g. urethral discharge treatment kits
- Improve STI case management in health facilities through training and supporting health workers to make correct diagnosis and provide correct treatment
- Provision of full package of STI case management including partner notification

Further reading:

1. Over M. The Public Interest in a Private Disease: Why should government play a role in STD control. In Holmes K, Mardh P-A, et al, Eds. Sexually Transmitted Diseases. New York: McGraw-Hill 1999: 3-14
2. Holmes K, Delay P, et al. STD Control, a public Health Priority. In Delabeta G, Laga M, Lamprey P. Eds. Control of Sexually Transmitted Diseases: A Handbook For The Design And Management Of Programs: AIDSCAP/Family Health International

UNIT 4

BASIC FACTS ABOUT HIV / AIDS AND RELATIONSHIP WITH STIs:

The Acquired immunodeficiency syndrome (AIDS) is caused by a retro virus of the lenti virus family known as the Human immunodeficiency virus (HIV). The HIV epidemic which was first reported in the early 1980s in the United States and later in Africa is now widespread, with over 60 million people infected since then, of whom about 20 million have since then died. In Sub Saharan Africa HIV mainly sexually transmitted unlike other parts of the world where intravenous drug use and gay sexual relationships are the leading modes of transmission. The length of the interval between HIV infection and manifestation of AIDS is varied. However studies done in developed countries show that 50% of infected people develop full-blown AIDS in 10 years. The rate is thought to be faster in Africa, perhaps due to interaction with endemic infections and infestations, malnutrition, stress and other factors. Use of anti retroviral drugs alters the clinical course of the disease, although at the moment, there is still no definitive cure or vaccine for HIV.

After primary infection with HIV, the infection goes through the following distinct stages.

- i. Window period, lasting several weeks or months, average 6 weeks. The infected individual is still antibody negative on serological tests for HIV.
- ii. Asymptomatic phase, lasting from several months to several years but individuals are HIV sero positive, median 7 years in the absence of without anti retroviral therapy
- iii. Symptomatic and HIV positive (AIDS), lasting from several months to few years.

Epidemiology of HIV / AIDS in Uganda:

Uganda has been experiencing a severe HIV epidemic for over 2 decades to date. The first cases were reported towards the end of 1982 in Rakai district. From this epicenter, the epidemic spread very rapidly throughout the country, so that by early nineties, every district had reported cases AIDS. It is estimated that as of the end of 2003, about 2 million people in Uganda had been infected, with about 800,000 people were living with the infection and over one million deaths. The main source of HIV data in the country is sentinel surveillance of HIV based on sero-prevalence among antenatal mothers attending selected antenatal clinic surveillance sites. According to the available data, HIV prevalence is higher in major urban areas currently estimated at 5-10% of adults relative to rural areas where it is less than 5%.

Trends: The HIV prevalence in most antenatal sites represents a decline of over 50% since 1992. This is most marked in urban areas and more particularly among the younger women aged less than 25 years. This is likely to be due to declining HIV incidence.

Age and Sex: The males: female ratio is nearly 1:1, but there are age group specific differences. Most affected is 15 - 49 years, followed by 0 - 4 years. AIDS cases and HIV prevalence are higher among young women, with men catching up 5-10 years later.

Among young people 15-24 years, HIV prevalence among girls is 5-6 times higher than males in the same age group. This is due to cross-generational sex with girls becoming sexually active at an earlier age and having sex with older men.

Modes of HIV transmission:

HIV is found in blood, semen, vaginal and cervical sections, sweat, tears, saliva, and breast milk. However it is infective mainly in the blood, semen, vaginal, and cervical secretions. The three main modes of HIV transmission are:

- i. Sexual intercourse - i.e. from an infected person to his or her sexual partners.
- ii. From exposure to infected blood, blood products or transplanted organs or tissues. Exposure to HIV - infected blood may occur as a result of the transfusion of unscreened blood and the re-use of contaminated piercing instruments
- iii. From an infected mother to her foetus during or shortly after birth (vertical and peri-natal transmission)

The Efficiency of transmission of HIV is: Blood transfusion, 90%, perinatal transmission, 20 - 40%, sexual contact, 0.1 - 1%, needle sticks injury, < 0.5%

Clinical features of AIDS:

The clinical criteria for the case definition of AIDS in adults:

A: Major signs / symptoms:

- i. Fever of over 1 month duration - intermittent or constant
- ii. Weight loss of over 10% of body weight
- iii. Chronic diarrhea of over 1 month duration.

B: Minor signs / symptoms:

- i. Cough of over 1 month without evidence of TB
- ii. Generalized pruritic dermatitis
- iii. Herpes zoster
- iv. Oral thrush
- v. Chronic and ulcerative and aggressive herpes simplex
- vi. Persistent generalized lymphadenopathy

AIDS is diagnosed if at least 2 major and 1 minor signs are present. AIDS is also diagnosed on the basis of either of the definitive signs/symptoms below. A serological test should be done to confirm the diagnosis.

C: Definitive signs/symptoms among others include:

- i) Disseminated Kaposi's sarcoma
- ii) Cryptococcal meningitis

Clinical criteria for diagnosis of AIDS in Children:

Paediatric AIDS is suspected in children presenting with at least 2 major signs /symptoms and at least 2 minor signs / symptoms in the absence of other known causes of immuno suppression such as severe malnutrition.

Major signs / symptoms:

- i) Weight loss or failure to thrive
- ii) Chronic diarrhea of over 1 month
- iii) Fever for more than a month

Minor signs and symptoms:

- i) Generalised lymphadenopathy
- ii) Oral pharyngeal thrush
- iii) Repeated common bacteria infection e.g. otitis media, tonsillitis, pneumonia, skin infections.
- iv) Persistent cough for more than a month
- v) Generalised dermatitis
- vi) Confirmed maternal HIV infection.

The presence of disseminated Kaposi's sarcoma and or Cryptococcal meningitis also confirms AIDS. A serological HIV especially in children above 18 months should be done.

WHO Clinical stages of HIV/AIDS

WHO Clinical Stage 1:

- No clinical symptoms
- May have persistent generalised lymphadenopathy (PGL)
- Normal activity, Performance scale 1

WHO Clinical Stage 2:

- Weight loss < 10%
- Minor skin rash
- Herpes zoster
- Recurrent upper respiratory infection
- Symptomatic but normal activity, Performance scale 2

WHO Clinical Stage 3:

- Weight loss > 10%
- Chronic diarrhea > 1 month
- Recurrent fevers > 1 month
- Oral thrush
- Pulmonary tuberculosis
- Bedridden < 50% of day, Performance scale 3

WHO Clinical Stage 4:

- Cryptococcal meningitis
- Toxoplasmosis of the brain
- Kaposi' sarcoma
- Dementia
- Bedridden > 50% of day, Performance scale 4

HIV prevention and control:

In the absence of a cure or a vaccine, prevention is the cornerstone in the control of HIV transmission. This is done through:

1. For sexual transmission:

- i) Total abstinence from sex
- ii) Zero grazing or mutual monogamy.
- iii) Correct and consistent use of condoms and other safer sex methods.
- iv) Early diagnosis, prevention and treatment for STDs.

2. For transmission through blood and blood products:

- i) Screening of blood and blood products prior to transfusion and limiting blood transfusion to cases that really need it for saving life.
- ii) Observing universal precautions of infection control including correct sterilisation of instruments and needles used in clinical settings and traditional practices
- iii) Screening of donors organs, tissues and semen.

3. For mother to child transmission:

- i) Use of sterile instruments during labour and delivery
- ii) Providing voluntary contraception to HIV infected mothers of reproductive age
- iii) Prevention of HIV in women of reproductive age especially use barrier methods during pregnancy and puerperium
- iv) Administration of delivery to the mother during labour and to the newborn shortly after delivery significantly reduces perinatal transmission
- v) Safe breast-feeding practices for HIV infected mothers, either through exclusive breast-feeding with early weaning or no breast-feeding.

INTERACTION BETWEEN HIV AND OTHER STDs

The relationship between STIs and HIV/transmission has been described as an epidemiological synergy. In addition, HIV and STIs share the same risk factors.

1. STDs enhance the sexual transmission of HIV through:

- a) STDs that primarily cause ulcers, disrupt the integrity of the skin barrier enabling HIV easy access through such defects in the skin. The presence of genital ulcers is known to increase the risk of HIV transmission from 0.1% -1% to nearly 100%
- b) STDs that primarily cause inflammation such as gonorrhoea, trichomoniasis, and chlamydial infections present a weak barrier to HIV.

- c) In both a and b above, infected lymphocytes among HIV infected individuals are attracted to the lesions and hence increase likelihood of infection to the partner.
- d) Increased viral shedding has been reported in genital fluids of patients with STIs and STI treatment has been demonstrated to significantly reduce viral shedding.

2. *HIV infection affects STIs through:*

- a) Altering susceptibility of STD pathogens to antibiotics. This has been reported for chancroid and syphilis
- b) Clinical appearance and natural history of STDs may be grossly altered as in genital herpes and syphilis.
- c) Increased susceptibility to STDs among immune suppressed individuals

In conclusion, STDs both as a marker of contact with increased number of sexual partners and high risk partner selection, and in their own right are associated with increased heterosexual HIV transmission. Conversely, HIV infection alters the clinical presentation and anti microbial susceptibility of STIs. This epidemiological synergy has been followed by public health action in many countries with STI control considered as a key strategy in the primary prevention of HIV transmission. At community level, one randomized community study in Mwanza region of Tanzania demonstrated a reduction in HIV incidence of 42% after STI Syndromic treatment in health facilities.

Other cofactors for HIV sexual transmission:

Other factors related to sexual activity, which may enhance HIV transmission, include:

- a. Rough sex especially with insufficient lubrication, sometimes with bruising and bleeding and can lead to micro-ulcers, which can facilitate HIV transmission. Such situations include rape, sex with virgins or young people and sex without fore play.
- b. Cervical ectopy: This occurs when the usually weaker mucosal lining within the endocervical canal extends outside the cervical opening towards the vaginal walls. HIV crosses this weak mucosa more easily. This can happen in females around puberty and those taking combined contraceptive pills.
- c. ***Intrauterine contraceptive devices: (IUCD):*** Although no conclusive data exists on the relationship between HIV transmission and IUCDs, some concerns abound. This might be due to the micro trauma to the glans penis caused by the projecting threads. Alternatively, IUCDs cause chronic inflammation of the cervix leading to a cervicitis and presenting a weakened barrier. Women who are using IUCDs and who are at high risk should be advised to use condoms with their partners.
- d. ***Lack of male circumcision:*** There is increasing evidence suggesting this as an independent risk factor for HIV transmission. Reasons postulated include the prepuce presenting a larger surface area through which HIV may traverse and it also increases the risk of trauma. The circumcised penis has a harder surface, which reduces the risk.
- e. ***Sex during menstruation*** or shortly after delivery exposes raw bleeding areas, which increases the chances of transmission.

Care of people with AIDS:

This is an area that has seen dramatic changes over the last few years as more breakthrough in knowledge about HIV has emerged. There is currently a paradigm shift to care in most countries. However, there is still no cure, currently available care and support measures significantly improve the quality of life and delay onset of AIDS.

Diagnosis: History and physical examination to establish presence of HIV/AIDS and to identify associated complications. Serological tests for HIV are increasingly available through VCT programme. VCT is now considered a cornerstone in HIV control through promotion of behaviour change and opening avenues to prevention and care.

Levels of care for HIV/AIDS

- i) Home and community based care: Aims at not to disrupt normal life, reduce hospital burden and to promote early detection of problems
- ii) General clinics and specialized HIV clinics
- iii) In-patient care indicated for very sick patient, with no isolation required. But standard guidelines for infection control e.g. safe and proper handling of sharps should be followed on the ward.

Treatment of HIV/AIDS:

Treatment of HIV/AIDS takes several forms including:

- i) Supportive care e.g. counseling, good nutrition
- ii) Early diagnosis and treatment of opportunistic diseases
- iii) Counseling and psycho social support
- iv) Health promotion: education of patients to prevent deterioration, prevention and early treatment of infection, avoidance of cofactors e.g. malnutrition and use of Insecticide treated mosquito net (ITNs) for prevention of malaria.
- v) Prophylaxis against opportunistic infections such as with PCP prophylaxis, TB prophylaxis, Cryptococcal prophylaxis etc.
- vi) Anti retroviral drugs: Are becoming increasingly accessible and more convenient dosing schedules with low toxicity are increasingly available
- vii) Terminal care: This requires laying down good plans for death. Introduce the topic of death through counseling. Help clients in deciding whether to die, either at home or hospital, by balancing social, cultural and economic considerations

Treatment, care and support are the responsibility of every health worker. Regular follow up is often necessary.

Support in the care of AIDS patients can be from various sources including:

- i. The patient providing own care, just like diabetics and hypertensives
- ii. Health workers

- iii. Traditional healers who share common socio-cultural environment, provide medication and some form of counseling
- iv. Non governmental and Community based organisations
- v. Extended family members and community members. These need education and counseling especially in home care, nursing care and prevention, psychosocial and material support, protective wear and other clinical supplies.

Further reading:

1. Wasserheit JN: Epidemiological Synergy. Interrelationships between human immunodeficiency virus infection and other Sexually Transmitted Disease. *Sex. Transm. Dis* 1992, **9** 2565-2569
2. Wasserheit JN: From Epidemiological Synergy to public Health policy and practice - the contribution of other sexually transmitted diseases to sexual transmission of HIV infection. *Sex Transm Infect.* 1999 Feb;**75**(1):3-17
3. Laga M, Diallo M, et al. Inter-relationship of sexually transmitted Diseases and HIV: where are we now? *AIDS* 1994, **8** (Suppl 1): S119-S124

UNIT 5
SYNDROMIC APPROACH TO STD MANAGEMENT:

Most developing countries including Uganda have adopted the Syndromic approach to STI management that was recommended by WHO in the nineties as the cost effective approach to the management of STIs.

Definition of STD syndrome

STD syndromes refer to a group of consistent symptoms and/or easily recognisable signs caused by two or more STD agents. Syndromic diagnosis is based on identification of a group of consistent symptoms and easily recognized signs (syndromes) and the provision of treatment that deals with the majority or most serious organisms responsible for producing the syndrome, rather than for specific STDs.

Rationale for syndromic Approach:

In most health care settings in developing countries, health care providers lack time and/or equipment to diagnose STDs with laboratory tests. In addition, the sensitivity and specificity of the available STI tests and competence of the laboratory staff affect the reliability of test results in most setting. In addition, use of laboratories is time consuming for patients and clinicians. In fact, it is common for many patients not to return for test results that are usually not available on the day of consultation and the opportunity to treat them is lost. For these reasons, many health workers often diagnose STDs basing on clinical judgment alone. However, in most cases, such clinical impressions turn out to be wrong for various reasons. First, mixed infections with STI agents that produce similar signs and symptoms are common which would require many laboratory tests not only to confirm the causative organisms, but also to rule out the other possible co-infections. Secondly, the clinical presentations of STIs can be altered by prior medication or immunosuppression.

The syndromic approach overcomes the above set backs and makes diagnosis more accurate without extensive laboratory tests and allows treatment on a single visit. Considered with improved drug supply, the approach can make STD services more widely available through primary care clinics.

Traditionally, health care providers relied on two approaches to diagnosing STDs.

- i. Aetiological diagnosis: Identifying the organism causing the symptoms with laboratory tests is not only expensive, manpower intensive, but also time consuming.
- ii. Clinical diagnosis: Identifying the STD based on clinical experience. However, even experienced STD service providers often make wrong diagnoses of STDs when they rely only on their clinical experiences.

A third approach, i.e. the Syndromic approach is still recommended. However, for this pilot project (OBA) Voucher system, the basic laboratory diagnostic tests are going to be provided, therefore diagnosis and treatment shall be based on laboratory findings. In situations where the results cannot be obtained within an hour, or, where diagnosis cannot be based on the laboratory e.g. lower abdominal pain (LAP), patients should be treated basing on the Syndromic approach.

STD SYNDROMES AND CAUSATIVE ORGANISMS

STD Syndromes	Causative Organisms
1. Urethral discharge (urethritis) Gonococcal Non gonococcal	<i>Neisseria gonorrhoeae</i> -common <i>Chlamydia trachomatis</i> - common <i>Trichomonas vaginalis</i> -uncommon <i>Ureaplasma urealyticum</i> - common <i>Herpes simplex</i> – uncommon
2. Vaginal discharge i) Vaginitis / vaginosis Trichomoniasis Candidiasis Bacterial vaginosis ii) Cervicitis Gonococcal Non gonococcal	<i>Trichomonas vaginalis</i> <i>Candida albicans</i> <i>Gardnerella vaginalis</i> <i>Neisseria gonorrhoeae</i> <i>Chlamydia trachomatis</i>
3. Genital Ulcer Disease (GUD) Syphilis Chancroid Genital herpes Granuloma inguinale Lympho granuloma venereum	<i>Treponema pallidum</i> <i>Haemophilus ducreyi</i> <i>Herpes Simplex Virus</i> <i>Klebsiella granulomatis</i> <i>Chlamydia LGV strain</i>
4. Lower abdominal pain (Pelvic Inflammatory Disease)	<i>Neisseria gonorrhoeae</i> <i>Chlamydia trachomatis</i> <i>Mycoplasma hominis</i> Anaerobic bacteria Other miscellaneous bacteria
5. Inguinal adenopathy (buboes) Lymphogranuloma venereum Chancroid Syphilis	<i>Chlamydia LGV Strains</i> <i>Haemophilus ducreyi</i> <i>Treponema pallidum</i>
6. Painful scrotal swelling (Epididymorchitis)	<i>Neisseria gonorrhoeae</i> <i>Chlamydia trachomatis</i> Other miscellaneous bacteria
7. Bartholin's abscess	<i>Neisseria gonorrhoeae</i> <i>Chlamydia trachomatis</i>
8. Conjunctivitis with pus in the New born (ophthalmia neonatorum) Gonococcal Non gonococcal	<i>Neisseria gonorrhoeae</i> <i>Chlamydia trachomatis</i>
9. Genital growths (warts) Syphilitic (condylomata lata)	<i>Treponema pallidum</i>

Viral (condylomata acuminata) Molluscum Contagiosum	<i>Human papilloma virus</i> <i>Molluscum Contagiosum Virus</i>
10. Balanitis	<i>Candida albicans</i> <i>Chlamydia trachomatis</i>

Advantages and disadvantages of Syndromic approach

The advantages of the syndromic approach to STD management:

1. Improved clinical diagnosis, avoids wrong diagnosis and ineffective treatment.
2. It is easy for primary health care workers to learn
3. It enables treatment of symptomatic patients in one visit; otherwise patients would spend time queuing or being referred for laboratory tests, results of which may not be available the same day necessitating a return visit.
4. Treatment is provided at the first point of contact with the health care delivery system enabling treatment for STIs to be provided even in peripheral health units. Referrals are limited to complicated cases since the same kind of treatment is provided at most health units in the country.

The disadvantage of the syndromic approach to STD management include:

1. It doesn't adequately care for people with STDs who have no symptoms, especially women with STDs as they are often asymptomatic
2. Wasting drugs, on treatment for STDs that patients do not actually have.
3. In some cases, especially women, the symptoms and signs are poorly predictive of STI e.g. vaginal discharge for gonococcal and chlamydial infections.

In our current circumstances, the advantages outweigh the disadvantages. A theoretical comparison of the cost effectiveness of the three approaches to diagnose 500 patients with genital ulcer, 500 patients with urethral discharge, and 500 with vaginal discharge found that the clinical and laboratory approach to diagnosis and management, each cost 2 - 3 times as much as syndromic diagnosis. The cost of personnel and consequences of incorrect diagnosis accounted for most of the difference. By treating for all STDs that cause a syndrome, syndromic diagnosis avoids many complications. Even in developed countries, many health care providers prefer to use the syndromic approach to avoid delay in treating their patients while waiting for laboratory results. In the OBA Voucher system pilot project, patients will be treated basing on laboratory findings. However, in circumstances where the healthcare provider anticipates a delay or when the client is unable to wait for results, treatment will be based on the Syndromic approach using the Syndromic algorithms.

STD treatment flow charts (Algorithms):

Diagnosis and treatment flow charts have been developed. They provide health workers with step-by-step instructions to diagnose and treat STDs with recommended drugs. The advantages of STD treatment algorithms are:

- i) They are problem oriented and improve clinical diagnosis
- ii) Can be used as a training tool for primary care providers
- iii) Enable standardisation of treatment
- iv) Enables disease surveillance
- v) Enables evaluation of training

vi) Enables treatment in one visit.

Further reading:

1. World Health Organisation: Guidelines for the Management of Sexually Transmitted Infections. WHO, Geneva, Switzerland. 2001

UNIT 6
COMPONENTS OF THE SYNDROMIC APPROACH TO STI CASE
MANAGEMENT AND THE CLINICAL ASSESSMENT OF STI PATIENTS

Case management of STIs refers to the care of a person with an STI syndrome or with a positive laboratory test result for one or more STIs. The goal of STI case management is not only to cure the client, but also to break the chain of transmission and avoid complications. For this reason, the STI case management package that goes beyond diagnosis and prescription, to include patient education and partner treatment as well as provision of condoms.

Goals of STD case management:

1. To make a correct diagnosis based on appropriate clinical assessment
2. To provide proper antimicrobial therapy in order to, obtain cure, decrease infectivity and avoid complications
3. To reduce and prevent future risk taking behaviour
4. To treat sexual partners in order to break the transmission chain.

Components of STD case management:

- i) Clinical assessment based on appropriate history taking and physical examination (to be seen shortly)
- ii) Syndromic diagnosis as previously discussed
- iii) Specific antimicrobial therapy for STD syndromes as will be seen under each syndrome.
- iv) Education / counseling on:
 - a. Treatment compliance for patients to take all the prescribed medication even when the symptoms resolve before completing medication
 - b. Nature of infection
 - c. Mode of transmission of infection
 - d. Risk reduction
 - e. Proper use of condoms and other safer sex methods
 - f. Early STD care seeking behaviour
- v) **Provision of condoms:** All STI patients should receive from the attending clinician, advice on condom use in the future. In addition, clinicians must demonstrate condom use to all STI clients using a penis model or other material. Lastly, health workers must provide condoms to all STIs patients as part of their prescription.
- vi) **Partner notification:** All recent sexual contacts of STI patients should be treated for the syndrome corresponding to that of the index patient. Index patients should be encouraged to contact their recent sexual partners and notify them about the need for treatment. Partner notification cards may be used whenever available and where appropriate. All recent sexual partners should be treated irrespective of whether they have symptoms or not. However, when the index patient has a

diagnosis of an endogenous reproductive tract infection, health workers should exercise caution in notifying partners.

- vii) Counsel and provision or referral for HIV Voluntary counseling and testing. STI patients should be counseled about their increased risk of HIV and encouraged to seek HIV VCT services if their HIV status is not already known.
- viii) Follow up examination - only if such a visit will be convenient for the patient.

The patient should be advised to avoid sexual contact until:

- He / she has completed taking all prescribed medication
- The STD symptoms have completely resolved
- All the sexual partners have been properly treated
- If possible, he/she has been re-evaluated by the clinician.

Here, we deal in detail with the first component of case management i.e. clinical assessment of patients. Appropriate antimicrobial treatment and other aspects of STI case management are dealt with in subsequent units.

CLINICAL ASSESMENT OF STD PATIENTS:

The aim of clinical assessment is to make a correct diagnosis necessary for choosing the correct treatment option for the patient. It comprises of taking appropriate history, performing clinical examination and if necessary laboratory investigations.

In order to make the correct diagnosis, the patient should be questioned carefully about the nature of symptoms such as a “discharge, sores, warts, swollen lymph nodes, abdominal pain. In addition, history relating to the duration of the complaints and the recent sexual partners is necessary.

Physical examination should commence with a general examination and conclude with a genital examination. Remember that many patients will incorrectly describe their symptoms or fail to report a symptom, so the examination is extremely important part of clinical assessment. Mixed infections with different STDs are common, any patient reporting symptoms of one STD should be examined for presence of other STDs.

Conditions necessary for proper clinical evaluation of STD patients include:

- i. The setting should have adequate privacy for sensitive information to be solicited from the patient. A room separated from the waiting area or screens will suffice.
- ii. The clinical facility where the assessment is conducted should have adequate light
- iii. Good communication between patient and clinician and confidence setting
- iv. Adequate time for attending to the patient
- v. Informed consent for clinical examination
- vi. An assistant or chaperon of the same sex of the patient should be around throughout the assessment. This is essential to meet medical legal requirements.

- vii. Adequate facilities for examination such as examination couch, speculum, gloves

A: History taking.

If the health worker is seeing the patient for the first time, a comprehensive history should be taken. The following points should be noted and the clinician should appreciate the reason for each question.

a) Questioning technique: Beginning by asking open-ended questions, which allow the patient to express his/her problems to the clinician. Close-ended questions should be used at the end to clarify issues as necessary.

b) Format for history taking: The following order is recommended:

- i. Names, Age, address, sex, marital status, occupation, date of consultation.
- ii. Presenting complaint, nature of symptoms and their duration
- iii. History of previous medication for the complaint and duration of treatment
- iv. Previous history of STDs
- v. Past medical history and treatment for allergies.
- vi. Recent sexual partners:
 - a. Last sexual intercourse, with who, when, and condom use.
 - b. Previous sexual intercourse with another person before the one above, with who, when and condom use.
 - c. Number of sexual partners in the last one and three months.
 - d. Whether any of the partners have an STD complaint

In addition, for females:

- i. Last normal menstruation period and pregnancies
- ii. Regularity of flow and the amount of blood
- iii. Number of children with their ages from the youngest to oldest.
- iv. Number of abortions with ages of gestation in order of occurrence.

Clinical Examination:

Before commencing the physical examination, the patient should be informed and permission sought. The following should be included in the clinical examination.

General Physical Examination:

Look for important findings in: hair and skin and the palms and soles, pre auricular and epitrochlear lymph nodes, eyes, mouth, abdomen and inguinal lymph nodes

Genital examination: Important findings in the genital examination may be in:

- i) ***Males:*** pubic hair, scrotum, inguinal lymph nodes, testes, epididymis, shaft of penis, prepuce (circumcised / uncircumcised), glans / coronal sulcus, urethral meatus, genital discharge after milking the penis, and lastly, the perineum
- ii) ***Females:*** pubic hair, inguinal lymph nodes, labia, vulva, urethral opening, bimanual palpation, cervical excitation, tenderness, masses, discharge on examining finger (color, smell, consistency), and perineum.

Further reading:

1. World Health Organisation: Guidelines for the Management of Sexually Transmitted Infections. WHO, Geneva, Switzerland. 2001

UNIT 7

URETHRAL DISCHARGE SYNDROME

Urethral discharge is one of the commonest STI syndromes among men, and is associated with serious complications. It is characterized by purulent urethral discharge with or without dysuria. The amount of discharge varies depending on the causative pathogens as well as prior antibiotic treatment.

Patients with this syndrome often complain of a discharge from the urethra. They may have symptoms of burning sensation while passing urine and frequency of micturition. Examination might reveal a purulent discharge from the urethra. If the discharge is not readily apparent, it may be necessary to milk the penis and massage it forwards before the discharge becomes apparent. If the discharge is copious, do not milk or squeeze the penis. If the patient is not circumcised, you should examine with the fore skin retracted so that you ascertain whether the discharge is from the urethra or from beneath the prepuce. The discharge may be frank pus or may be mucopurulent.

Case definition: Urethral discharge in men with or without dysuria

Aetiology: This syndrome is commonly caused by *Neisseria gonorrhoeae* and *Chlamydia trachomatis* in over 98% of cases. Other infectious agents associated with urethral discharge include *Trichomonas vaginalis*, *Ureaplasma urealyticum* and *Mycoplasma* spp. Mixed infections especially of *Neisseria gonorrhoeae* and *Chlamydia trachomatis* occur.

Management of Urethral Discharge: All male patients with urethral discharge are managed according to the syndromic approach as recommended by the Ministry of Health. Treatment should be provided to cover the commonest causes. The drugs of first choice are ciprofloxacin for *N.gonorrhoea* and Doxycycline for Chlamydia. In the absence of these, Co-trimoxazole may be given to cover gonorrhoea while tetracycline could be used to cover chlamydial infections. However, increased resistance to Co-trimoxazole has been reported in the region. See chart on the next page.

For the OBA pilot project however, all patients with Urethral discharge will be assessed using laboratory testing for the causative agent. Specific treatment will be given depending on the laboratory results. See chart on page 75.

Besides antibiotic treatment, all the other components of STD case management package should be provided to patients presenting with this syndrome. They include: i) Education on treatment compliance ii) Promotion and provision of condoms and demonstrating their use, iii) Partner notification and offering treatment, iv) Offering or referring for HIV VCT services if necessary

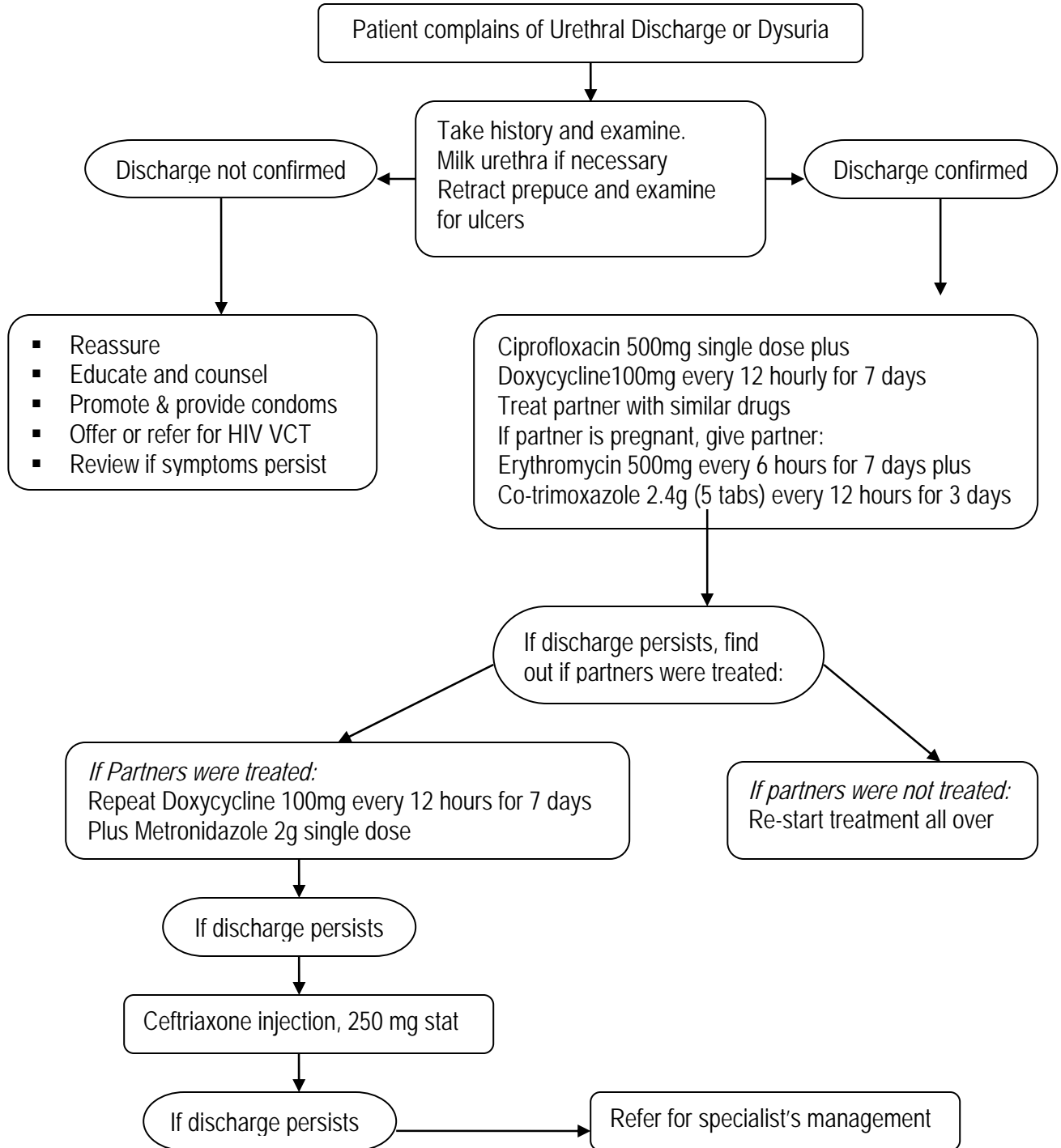
Partners should be treated irrespective of whether they are symptomatic or not. Persistent or recurrent urethritis may be due to drug resistance, poor compliance or re-infection.

There is increasing evidence of high prevalence of *Trichomonas vaginalis* among men in Sub Saharan Africa, for which patients with recurrent urethritis should be treated.

Further reading:

1. World Health Organisation: Guidelines for the Management of Sexually Transmitted Infections. WHO, Geneva, Switzerland. 2001

MANAGEMENT OF URETHRAL DISCHARGE



Counsel and educate all clients on:

- Treatment compliance
- Condom use and provide condoms
- Partner management
- Offer or refer for HIV VCT services if necessary
- Schedule a return visit
- Abstinence from sex till all symptoms have resolved

UNIT 8

GENITAL ULCER SYNDROME

Genital ulcer disease is one of the commonest syndromes that affect men and women. The aetiology of the syndrome varies in different geographical areas and can change over time. Single or multiple ulcers can present. In addition, the clinical manifestations are quite variable and can be altered by HIV infection. Furthermore, mixed infections are common.

Genital ulcers have an epidemiologically synergistic relationship with HIV. There are reports that HIV alters the natural history of syphilis as well as increasing treatment failure with single dose therapies. For chancroid, the natural history is also altered where more aggressive lesions may manifest as well as treatment failure especially with single dose therapies. Genital herpes can also be affected by HIV resulting in more persistent lesions. On the other hand, the evidence of enhanced HIV transmission in presence of STIs is more conclusive for ulcerative STIs.

In Men, genital ulcer disease occurring under the prepuce may present as a discharge, similarly, GUD in women may also present as a discharge underlying the importance of clinical examination. Uncircumcised Male patients with a genital discharge should have the prepuce retracted and examined for ulcer lesions, while female patients should have the labia separated and inspected. Speculum examination may be necessary.

Case definition: Non-vesicular Genital ulcer: Ulcer on penis, scrotum or rectum in men and on labia, vagina or rectum in women with or without inguinal adenopathy. Vesicular ulcers is an ulcer with the presence or history of vesicles

Non-vesicular ulcer syndrome is typically caused by syphilis, chancroid, lymphogranuloma venereum, granuloma inguinale or atypical cases of genital herpes on the other hand are caused by HSV infection. In Uganda, the aetiology of genital ulceration has not been ascertained recently. However, the most frequent causes are Herpes genitalis, syphilis and chancroid.

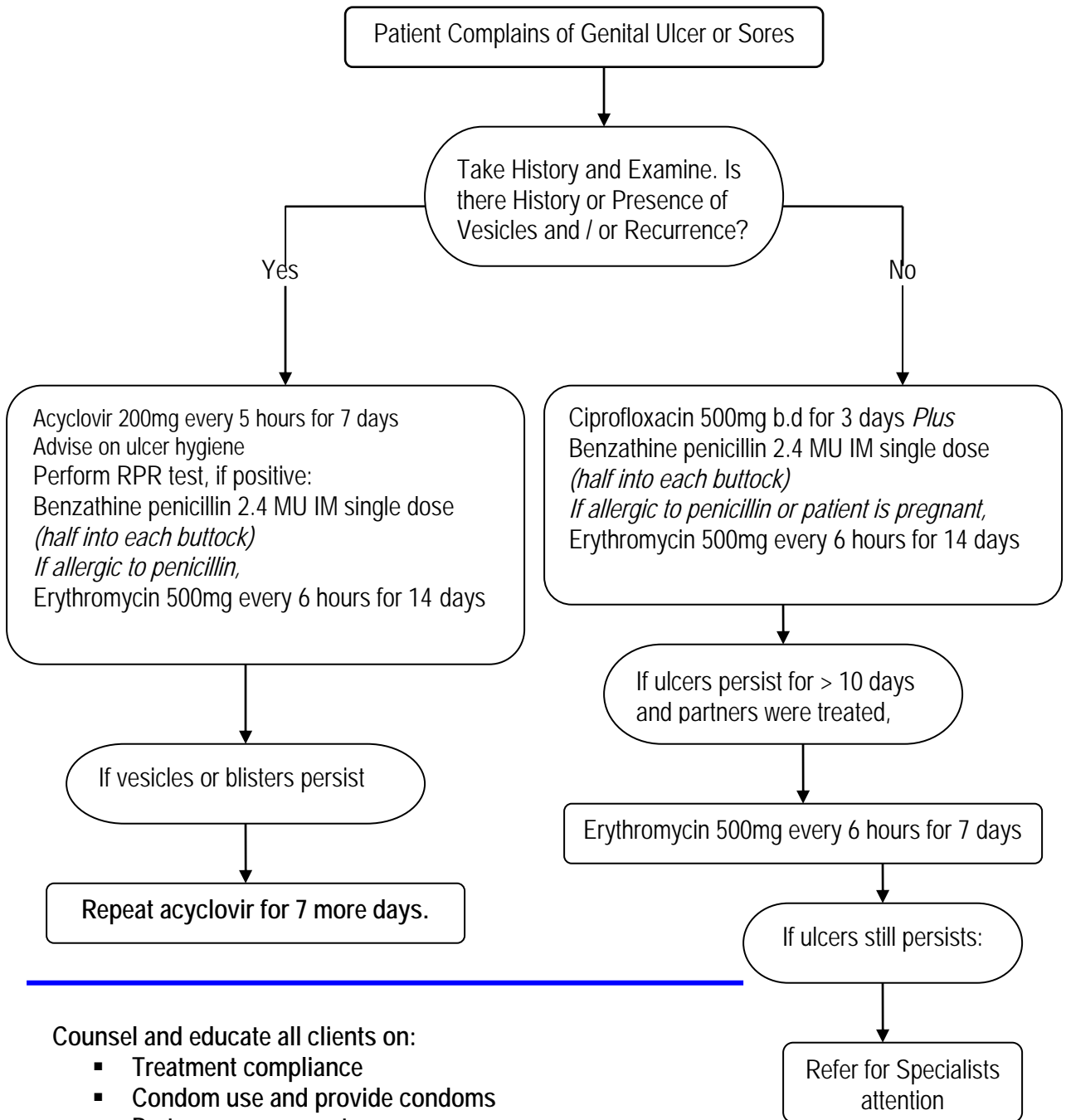
Management of Genital ulcer:

Treatment should be given as soon as possible owing to the increased risk of HIV transmission. The treatment for this syndrome is similar for both males and females. Treatment should be based on the local epidemiology of genital ulcers. In Uganda, treatment should be according to the flow chart on the next page. Distinction should be made between vesicular and non-vesicular genital ulceration. Because of the increased risk of HIV transmission, treatment for genital herpes is now strongly recommended. Besides antimicrobial therapy, the other components of STI case management including partner notification and treatment should be given. The OBA pilot project, recommends that treatment of clients be based on laboratory findings

Further reading:

1. World Health Organisation: Guidelines for the Management of Sexually Transmitted Infections. WHO, Geneva, Switzerland. 2001

MANAGEMENT OF GENITAL ULCER DISEASE



Counsel and educate all clients on:

- Treatment compliance
- Condom use and provide condoms
- Partner management
- Offer or refer for HIV VCT services if necessary
- Schedule a return visit if feasible
- Abstaining from sex symptoms resolve
-

UNIT 9

ABNORMAL VAGINAL DISCHARGE SYNDROME

All women have a physiological vaginal discharge, which may increase during certain situations. Normally, women will only complain if they perceive the discharge to be abnormal. Abnormal vaginal discharge is one of the most common STI syndrome among women, but also one of the most complicated to manage. The commonest causes of the syndrome are endogenous vaginal infections (bacterial vaginosis and vaginal candidiasis) that are not sexually transmitted.

Case definition: Abnormal vaginal discharge (indicated by amount, colour and odour) with or without lower abdominal pain (LAP) or specific risk factors.

Aetiology: Abnormal vaginal discharge is usually due to infection of the vagina (Vaginitis and vaginosis) and rarely due to mucopurulent cervicitis, although the later is more serious. Bacterial vaginosis, vulvovaginal candidiasis and trichomoniasis are the commonest causes of vaginitis. Gonococcal and chlamydial infections cause cervicitis. Distinction between the two on clinical grounds is usually not possible.

The symptom of vaginal discharge is highly indicative of vaginitis and poorly predictive of cervicitis, which is in most cases asymptomatic. Thus all women with vaginal discharge should receive treatment for trichomoniasis and bacterial vaginosis. Since cervicitis is in most cases asymptomatic, an attempt may be made to identify women with increased likelihood of cervical infection by using a locally validated risk score assessment. However, this has not yet been standardized for Uganda. Microscopy of a cervical smear and speculum examination have not been convincingly shown to increase the likelihood of identifying cervical infections, but are highly recommended to rule out early lesions of cervical carcinoma.

Management of vaginal discharge:

Women with vaginal discharge should be managed according to the flow chart on the next page. The flow chart differentiates between candidiasis and other vaginal discharges. However, all women with abnormal vaginal discharge are treated for bacterial vaginosis and trichomoniasis and candidiasis. At the moment, it is not possible in this country to identify women with cervicitis, and all women with a non-curd like discharge should be treated for cervicitis. For the OBA Pilot project, management will be based on specific laboratory tests for Bacterial Vaginosis, Trichomoniasis and Candidiasis. Identification of *Neisseria gonorrhoea* and *Chlamydia* (which are the major causes of cervicitis) is still difficult basing on laboratory testing therefore healthcare providers will, in addition, use the risk assessment to make an informed decision in making a diagnosis. Refer to chart on page 72.

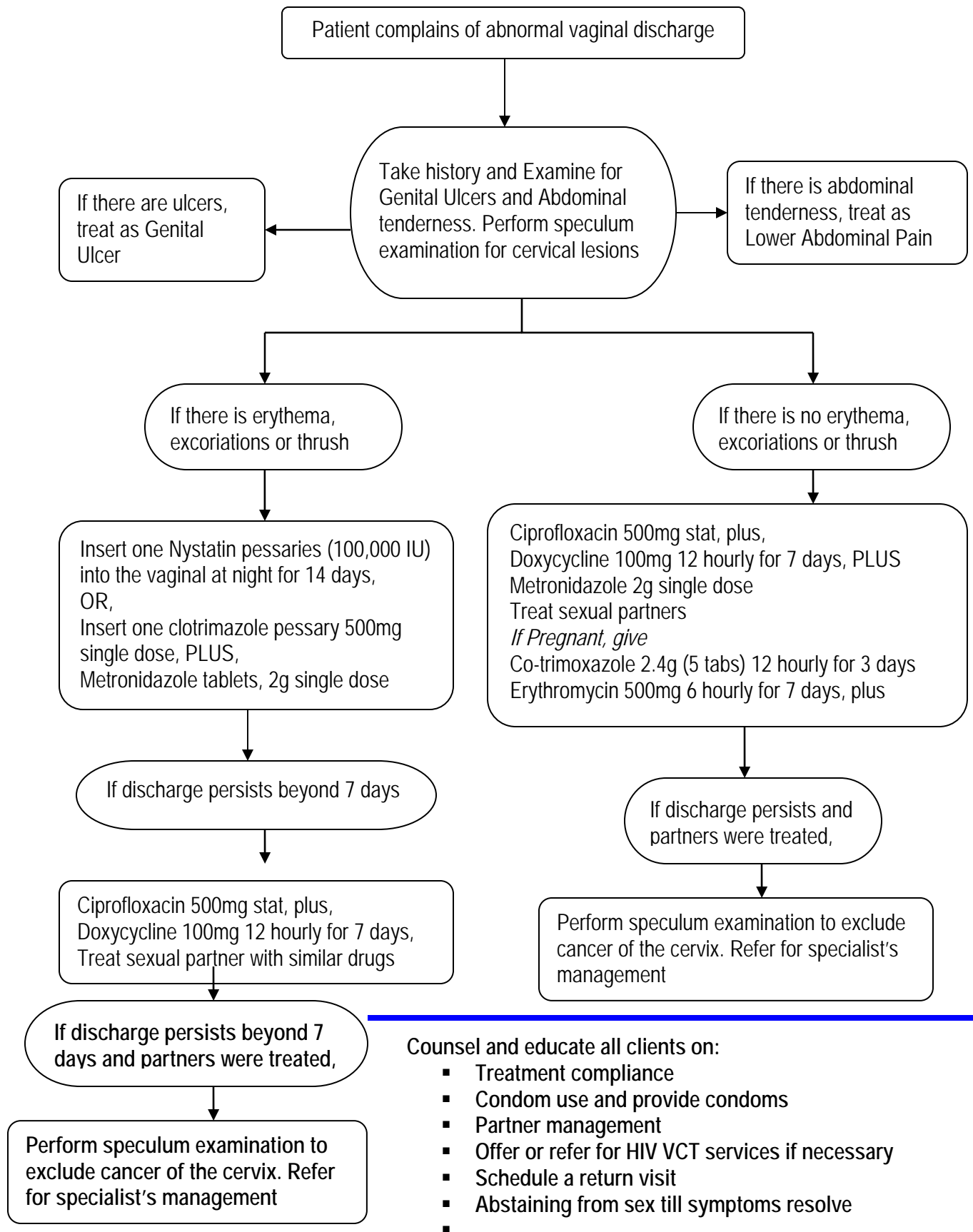
While other components of the syndromic management package should be promoted in management of abnormal vaginal discharge, patients should be explained endogenous and recurrent nature of vaginitis to avoid marital discord. Women whose partners have urethral discharge should be treated for cervicitis.

Persistent abnormal vaginal discharge should be evaluated to exclude cervical cancer. Speculum examination and referral for specialist management may be necessary.

Further reading:

1. World Health Organisation: Guidelines for the Management of Sexually Transmitted Infections. WHO, Geneva, Switzerland. 2001

MANAGEMENT OF VAGINAL DISCHARGE SYNDROME



UNIT 10

LOWER ABDOMINAL PAIN SYNDROME

This is perhaps one of the commonest and most serious STI syndromes among women with very serious reproductive health and socio-economic consequences. It can present acutely or chronically and is often very difficult to diagnose given the many differential diagnoses.

Patients will often complain of abdominal pain, bleeding, dyspareunia, menometrorrhagia, fever and sometimes, vomiting. Patients should be carefully evaluated for abdominal tenderness, cervical motion and adnexial tenderness, enlargement of uterine tubes, and tender pelvic masses. The temperature may be elevated. Female patients with other STIs should be carefully evaluated to exclude this condition since some may not complain of abdominal pain. This requires bimanual vaginal examination.

A thorough history and examination to exclude other surgical emergencies which present in a similar way must be done, and if necessary, referral for specialist attention done

Case definition: Symptoms of lower abdominal pain and pain during sexual intercourse, with examination showing vaginal discharge, lower abdominal tenderness on palpation, or temperature > 38 degrees Celsius.

Aetiology:

This syndrome is suggestive of pelvic inflammatory disease (PID), i.e. salpingitis and or endometritis. It may be caused by gonococcal, chlamydial, or anaerobic infection.

Management of Lower Abdominal Pain:

Patients with other surgical emergencies should be referred immediately for in patient admission and management. Lower abdomen pain syndrome is treated with ciprofloxacin, metronidazole and ciprofloxacin.

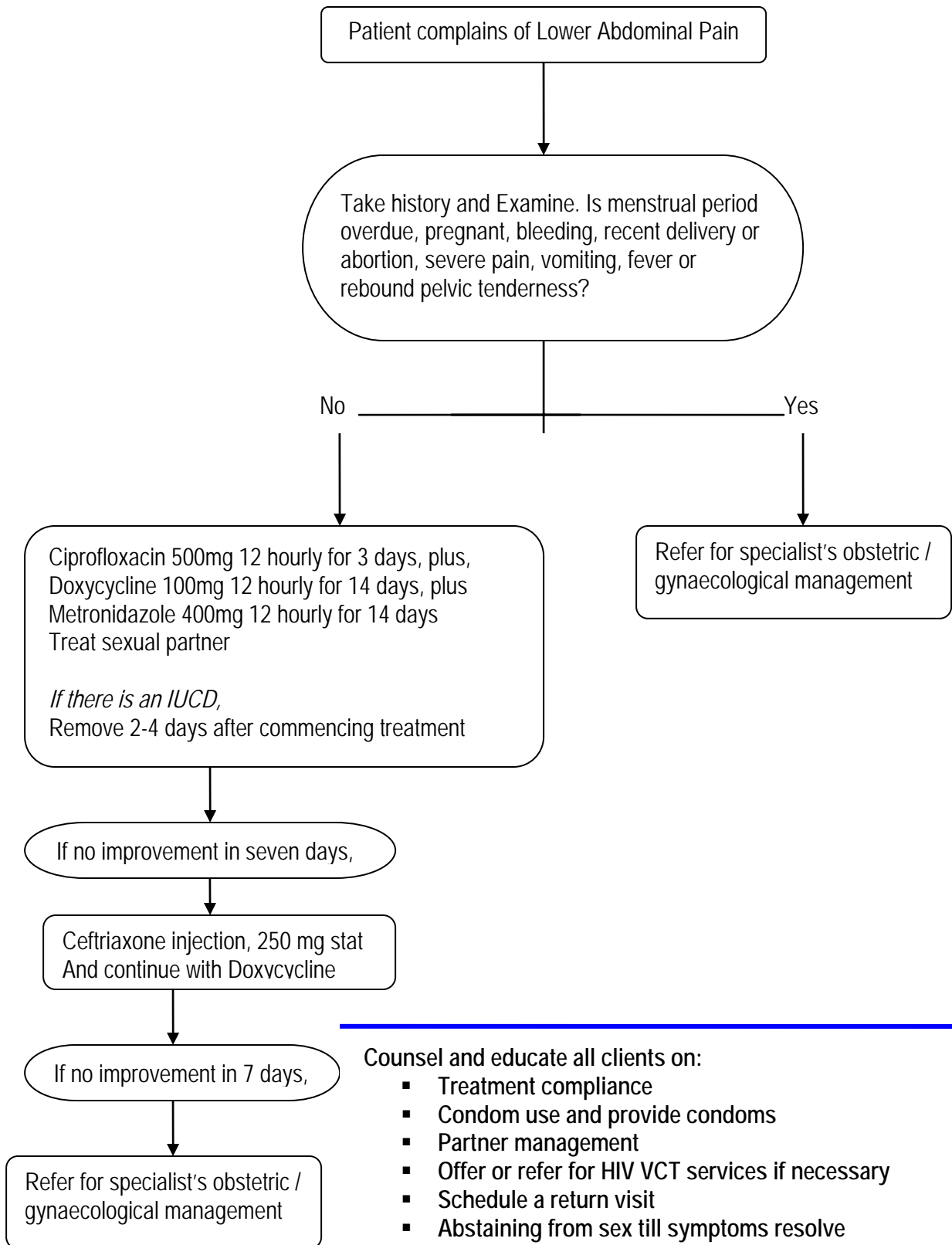
Antibiotic treatment is clearly syndromic and is directed at the aetiological agents since specific diagnosis is not possible. Out patient treatment should be prolonged due to the chronicity of the condition.

Patients with Intrauterine Contraceptive Devices, that are themselves predisposing factors for PID should have the device removed after initiating treatment for at least 2 days. Such patients will require contraceptive counseling. The other components of STI case management should also be provided to patients with Lower abdominal pain syndrome.

Further reading:

1. World Health Organisation: Guidelines for the Management of Sexually Transmitted Infections. WHO, Geneva, Switzerland. 2001

MANAGEMENT OF LOWER ABDOMINAL PAIN IN WOMEN



UNIT 11

OTHER STI SYNDROMES

In addition to the STI syndromes discussed previously, other less common but nevertheless important STI syndromes include:

1. Inguinal Bubo:

These are localized swellings or enlarged lymph glands in the groin and femoral area, hence the local term “*grenade*” used to describe this syndrome. They may be painful and fluctuant. They are usually associated with LGV and chancroid. In the case of chancroid, an associated ulcer may be visible.

Non-sexually transmitted local and systemic infections (e.g. infection of the lower limb or gluteal region) can also cause swellings in the inguinal region and should be excluded.

Management is according to the flow chart below. Fluctuant swellings should be aspirated daily with a large bore needle passing through normal skin, but they should never be incised as this can result in sinus.

2. Painful Scrotal swelling

Sexually transmitted epididymitis or epididymo-orchitis is inflammation of the epididymis and/or testis, usually unilaterally. It is of acute onset and painful and may be accompanied by urethral discharge. This condition if not treated early can cause secondary male infertility.

It is important to exclude other non-STI causes of scrotal swelling such as trauma, testicular torsion and tumours, which should be referred for surgical attention. Other causes of epididymo-orchitis especially older men include *E.coli*, *Klebsiella spp*, *Pseudomonas aeruginosa*, *Brucella spp* and Mycobacteria tuberculosis. In children, mumps epididymo-orchitis may accompany parotid enlargement.

3. Balanitis

Balanitis refers to inflammation of the glans penis and the prepuce. There may be discharge, erythema and erosion of the glans, however, the prepuce is retractable.

This syndrome is often caused by infection with candidiasis and rarely by trichomoniasis. Treatment should be according to the flow chart below including improvement of local hygiene. In recurrent cases or if symptoms don't resolve, the partner should be treated as well. Circumcision may be recommended in recurrent cases, but should be done only after symptoms have resolved.

4. Bartholin's abscess

This complication of gonococcal or chlamydial infection of the Bartholin's gland in women presents as an extremely painful swelling at the vaginal introitus. It should be managed as a surgical emergency. Initiate treatment as for cervicitis and refer the patient immediately for incision and drainage in hospital.

5. Genital warts

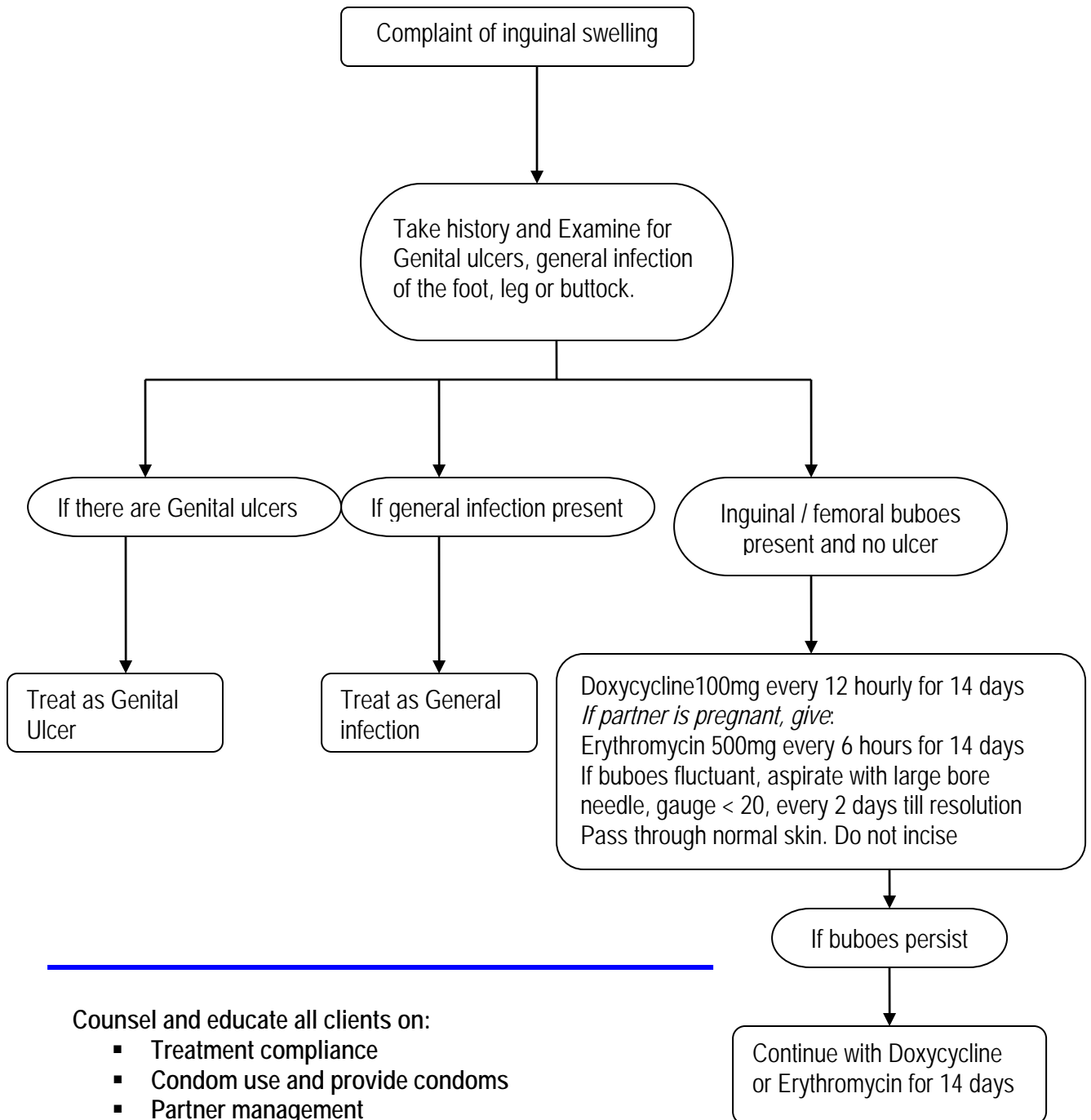
A virus – Human papilloma virus, causes genital warts. They usually have the appearance of flesh-coloured cauliflower-like growths on the genitals. The penis and foreskin (prepuce) of men and the labia or vagina are the most common sites of the warts. The warts can be variable in number and size, either few or multiple, small to very large.

Warts are treated with local application of podophyllin (10 - 25% solution) once a week. After treatment of warts, the medication must be washed off in 2 - 4 hours after it is applied to the warts or the patient risks developing sores at the site of treatment. If used too frequently and extensively, podophyllin can lead to severe blood and liver damage. Podophyllin is toxic and can be absorbed through the skin, so it should not be used in pregnant women. Genital warts often require more than one course of treatment. If the patient fails to respond to the three weekly treatments, he/she should be referred.

Further reading:

1. World Health Organisation: Guidelines for the Management of Sexually Transmitted Infections. WHO, Geneva, Switzerland. 2001

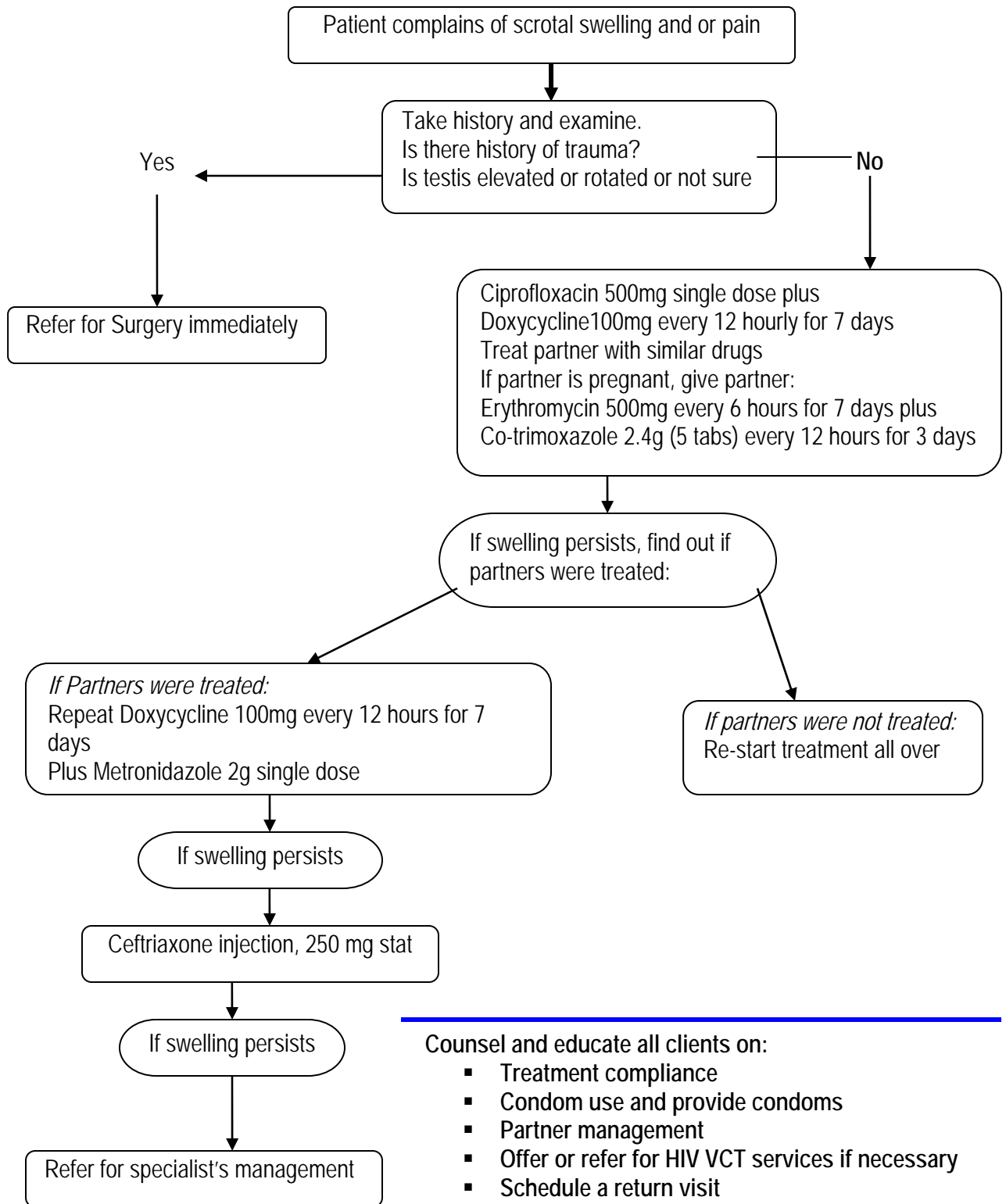
MANAGEMENT OF INGUINAL BUBO



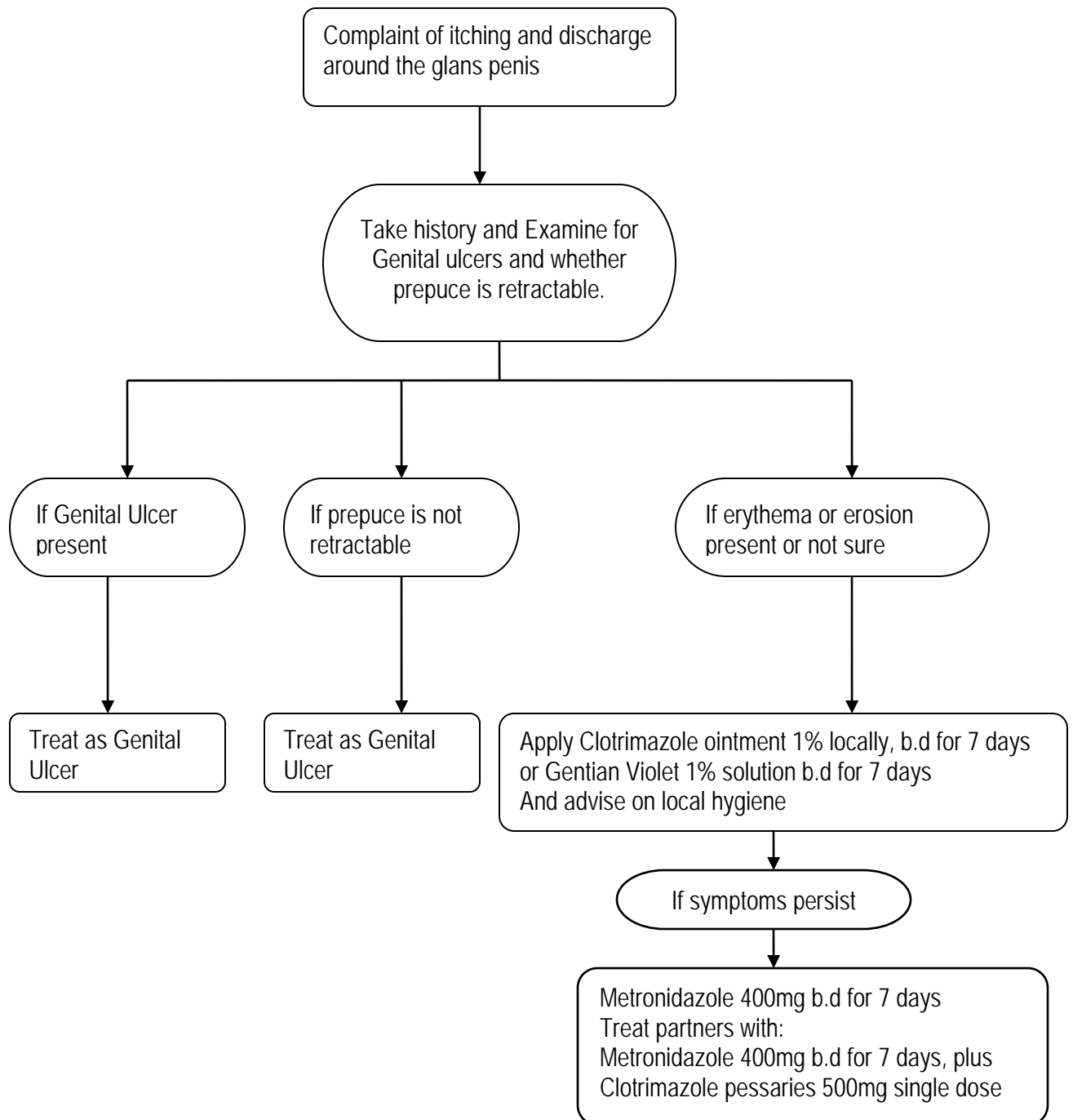
Counsel and educate all clients on:

- Treatment compliance
- Condom use and provide condoms
- Partner management
- Offer or refer for HIV VCT services if necessary
- Schedule a return visit
- Abstaining from sex till symptoms resolve

MANAGEMENT OF ACUTE SCROTAL SWELLING IN MEN



MANAGEMENT OF BALANITIS IN MEN



UNIT 12

CONGENITAL STI SYNDROMES

Infection of babies in utero or during delivery is one of the leading complications of untreated STIs among mothers. This can result in congenital STIs among newborns. Among the most serious congenital infections are infections with syphilis, HIV gonococcal and chlamydial organisms and herpes simplex.

1. Neonatal Conjunctivitis:

This refers to conjunctival infection of neonates by STI organisms in the infected mother's birth canal. Neonates acquire this infection during passage through an infected birth canal during delivery. It is a very serious condition that can lead to corneal ulceration and ultimately to blindness. Blindness in children is associated with high infant morbidity and mortality.

Main clinical Presentation:

This disease begins during the initial thirty days after birth. It is often characterized by bilateral purulent eye discharge. The conjunctiva is inflamed and eyelids swollen. If untreated, the cornea may be affected giving rise to corneal ulceration that can lead to perforation and blindness. Corneal scarring may occur if treatment is delayed.

Case definition: A purulent conjunctivitis with at least one polymorphonuclear leucocyte per high power field on a Gram stain of a smear of the eye discharge of an infant less than 30 days old.

Aetiology: Ophthalmia neonatorum may be caused by a number of organisms but the most common are *N.gonorrhoea* and *C. trachomatis*. However, there are other non STI causes of neonatal conjunctivitis predisposed by difficulty labour such as early rupture of membranes, vacuum extraction or other assisted vaginal delivery.

Antibiotic treatment of choice:

Treatment should be given to cover both STI causative organisms. Attempts to differentiate between the two based on clinical grounds can be counter productive. Systemic treatment is recommended as well as irrigation of the eyes. Staff should use gloves and wash their hands thoroughly after handling the eyelids. The recommended treatment is Ceftriaxone injection, 125 mg single dose intramuscularly

Alternative treatment to cover gonococcal infections is Spectinomycin 25 mg per kg to a maximum of 75 mg as a single IM injection, Kanamycin 25mg per kg to a maximum of 75 mg as single IM injection may also be used. This treatment will also cover Chlamydia.

Topical Tetracycline eye ointment has been shown to have no added benefit. However, local irrigation of the eye with saline or sterile water should be carried. Staff should cover the eye with gauze while opening the eyelid as pus may be under pressure. Staff handling the eyes must use gloves at all times.

Other components of the case management package:

Parents of babies diagnosed with ophthalmia neonatorum should be treated for cervical infection of *N.gonorrhoea* and *C. trachomatis*.

Prevention of ophthalmia neonatorum through screening and treatment of infected mothers and ocular prophylaxis of all newborns in high prevalence areas with 1% silver nitrate or 1% tetracycline eye ointment at the time of delivery is strongly recommended.

Management flow chart for Ophthalmia neonatorum:

The syndromic management flow chart for ophthalmia neonatorum is shown below.

2. Congenital syphilis:

Congenital syphilis is a serious debilitating and disfiguring condition that can be fatal. About one third of syphilis infected mothers have adverse pregnancy outcome, one third give rise to a health baby, while the remaining third may result into congenital syphilis infection, although the stage of syphilis may confound these outcomes.

Main clinical Presentation: Some cases of congenital syphilis can be asymptomatic, while others may present with early congenital syphilis, and others may manifest symptoms of late congenital syphilis after two years. Early syphilis begins to show after 6-8 weeks of delivery and manifests with snuffles, palmar and plantar bullae, hepatosplenomegally, pallor, joint swelling with or without paralysis and cutaneous lesions. These signs are non-specific. Late signs include microcephally, depressed nasal bridge, arched palate, and perforated nasal septum, failure to thrive, mental sub normality and musculoskeletal abnormalities.

Management of congenital syphilis:

Penicillin is the drug of choice for congenital syphilis. Procaine penicillin, 50,000 IU per Kg body weight daily for 10 days is recommended. Symptomatic patients should be admitted. Treatment for all babies less than 2 years should assume cerebrospinal involvement. Aqueous benzyl penicillin should be administered, 50,000 IU/kg body weight every 12 hours for a total of 10 days. Alternative treatment is procaine benzyl penicillin, 50,000 IU/kg body weight, single dose daily for 10 days.

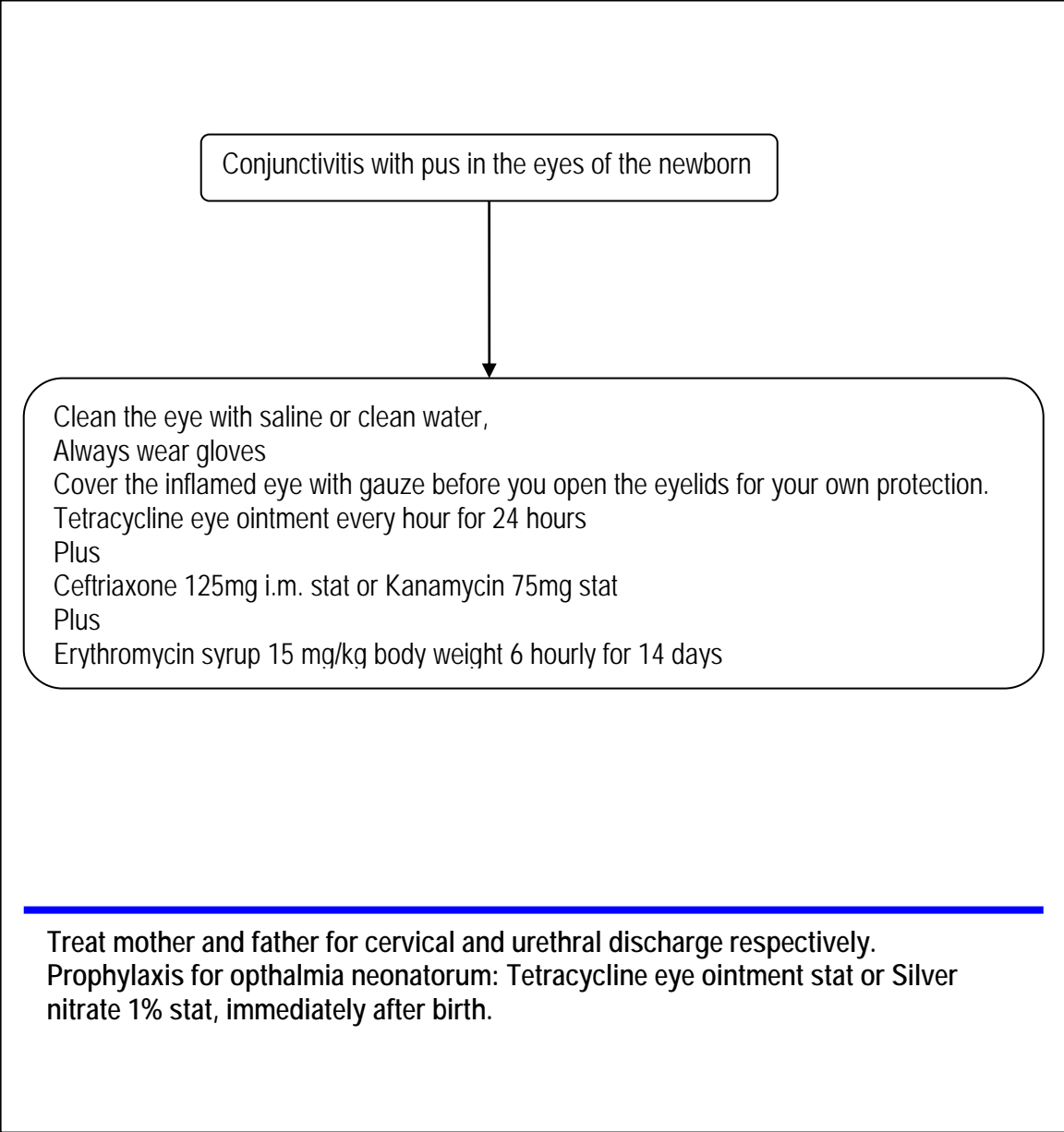
Both parents should be treated for syphilis with Benzathine penicillin. Programmes of routine screening and treatment of syphilis-infected mothers can prevent the adverse effects of syphilis on pregnancy.

Further reading:

1. World Health Organisation: Guidelines for the Management of Sexually Transmitted Infections. WHO, Geneva, Switzerland. 2001

MANAGEMENT (OPHTHALMIA NEONATORUM):

Conjunctivitis with pus in the eyes of the newborn



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graph TD; A[Conjunctivitis with pus in the eyes of the newborn] --> B[Clean the eye with saline or clean water, Always wear gloves Cover the inflamed eye with gauze before you open the eyelids for your own protection. Tetracycline eye ointment every hour for 24 hours Plus Ceftriaxone 125mg i.m. stat or Kanamycin 75mg stat Plus Erythromycin syrup 15 mg/kg body weight 6 hourly for 14 days];
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Clean the eye with saline or clean water,
Always wear gloves
Cover the inflamed eye with gauze before you open the eyelids for your own protection.
Tetracycline eye ointment every hour for 24 hours
Plus
Ceftriaxone 125mg i.m. stat or Kanamycin 75mg stat
Plus
Erythromycin syrup 15 mg/kg body weight 6 hourly for 14 days

Treat mother and father for cervical and urethral discharge respectively.
Prophylaxis for ophthalmia neonatorum: Tetracycline eye ointment stat or Silver nitrate 1% stat, immediately after birth.

UNIT 13

PREVENTION AND CONTROL OF STIs:

Introduction:

Although most STDs can be treated and cured, it is more cost effective to prevent them. Furthermore, some of the STDs have no cure. Prevention and control of STDs relies heavily on intervention by way of community education on the risk factors and promotion of behaviour change. STDs prevention measures revolve around intervention on sexual behaviour of the individuals. Remember that different people have different desired outcomes of sex and one intervention measure may not satisfy all. In facilitating behaviour change, it is therefore necessary to provide options to individuals.

Primary Preventive measures:

Some of the measures one can employ to avoid STDs include the following:

- i) Abstinence: This might be total abstinence from sex or for groups such as students and youths not yet married, one should encourage, “postponed sex” till one is ready for marriage.
- ii) Mutually faithful sexual relationship or “Mutual monogamy” or what is usually termed as “Zero grazing” if both partners are not already infected.
- iii) Correct and consistent use of condoms and other safer sex practices. This intervention is recommended for those who cannot abstain and yet cannot have mutually faithful relationship.
- iv) Safer Sex practices. Safer sex practices are many and varied but all revolve on the principle of avoiding exchange of sexual or body fluids of the partners, yet enabling the individual(s) to obtain what they desire out of sex. Some of the safer sexual practices include:
 - Correct and consistent use of condoms
 - Masturbation of self or with objects
 - Intimate romance
 - Sex with clothes on (romance)
 - Sex with other parts of the body that don't produce body fluids.

Secondary prevention includes:

- i) Early diagnosis and prompt and correct treatment of STDs
- ii) Promotion of STD care-seeking behaviour including reduction of barriers to care.
- iii) Notification of partners and treatment
- iv) Screening for asymptomatic cases such as pregnant mothers treatment

CONDOM USE:

Condoms are penis shaped thin walled sheaths molded from natural rubber. Like a surgeons gloves, they are designed to provide a barrier against microorganisms without significantly reducing the sense of feel. If used correctly and consistently, they provide good protection against STDs, HIV and unwanted pregnancies.

Dipping a glass mold into a liquid made up primarily of water and natural latex makes modern rubber condoms. All of the operations are performed automatically on a conveyor containing thousands of these glass molds.

The latex films, still on their glass molds, pass through an oven, which “vulcanizes” the thin latex into a thin but tough elastic film. After further processing each condom is rolled back on to another large penis shaped form made of metal and subjected to an electric charge. If the condom contains a pinhole anywhere, an electric current flows through and triggers a switch, which causes the condom to be rejected. Even after this thorough screening, the condoms are sampled and other tests carried out for pinholes, strength, size, and other characteristics.

How to use a condom - Demonstration and discussion:

Note: It is absolutely necessary to demonstrate the use of a condom to STI patients. A penis model or soft drink bottle can serve as the erect penis. Provide a sample of condom to each participant and let each open the package and roll the condom on the model.

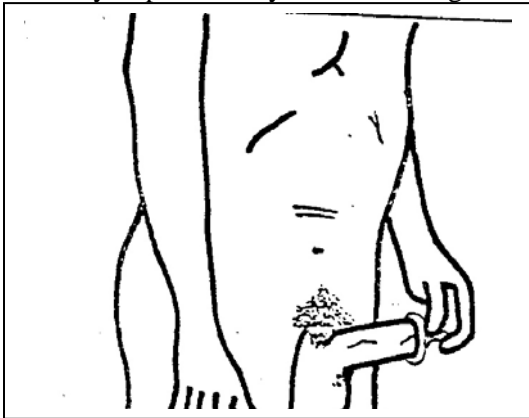
Hints for effective condom use:

- i) Know your condom: Get used to handling it and opening the package. Don't wait for a sexual encounter to try the condom on. Try one on in the privacy of your own room. Get used to the way it rolls on.
- ii) Keep enough condoms with you if you think you may need to use them.
- iii) Put the condom on: The condom should be rolled onto the erect penis. Use two hands; use one to squeeze the tip of the condom (to expel air) as you roll it on.
- iv) Handle the condom with reasonable care (watch out for fingernails and jewelry). Roll the rim all the way to the base of the penis.
- v) Take the condom off: Do this while the penis is erect. One of the most frequent causes of condom failure results from the condom slipping off the limp penis while it is still inside the vagina. Grasp the ring top of the condom and hold it tightly around the penis that is still in the vagina. Withdraw the penis with condom still firmly grasped. Slide the condom off, pinching shut the grasped ring top end.
- vi) Dispose off the condom. Condoms cannot be reused. They should be disposed of in such a way that they will not be found by children who might play with them. You could be put them in a pit latrine, or bury them in a pit or burn them.

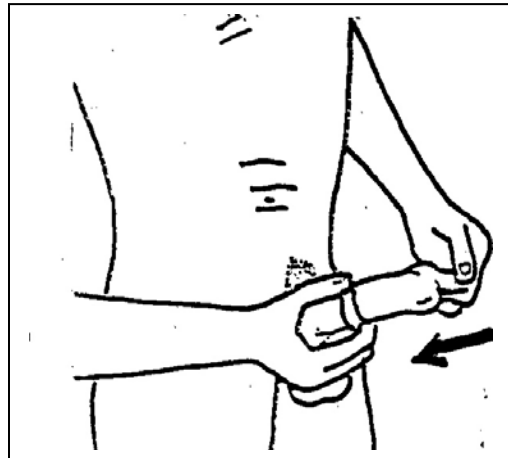
Illustrations of how to use condoms:



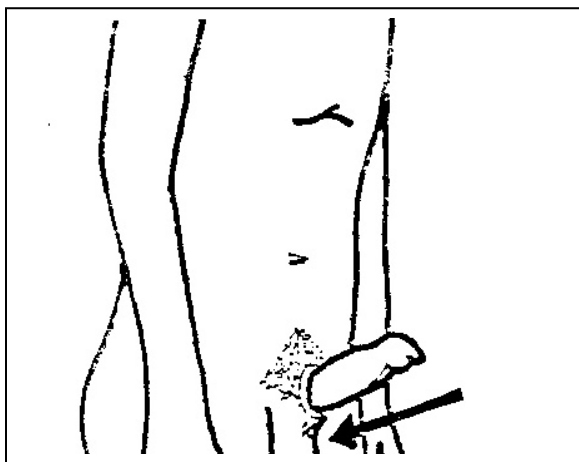
1. A condom in its Pack.
carefully to prevent any tears or damage.



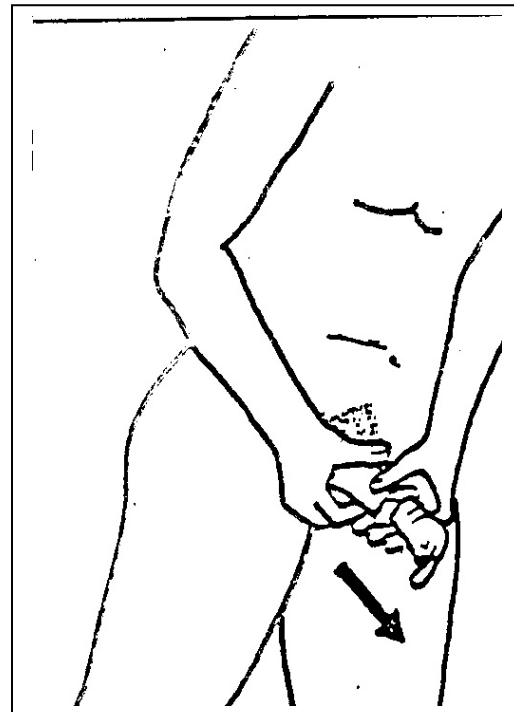
2. Remove the condom from the packet



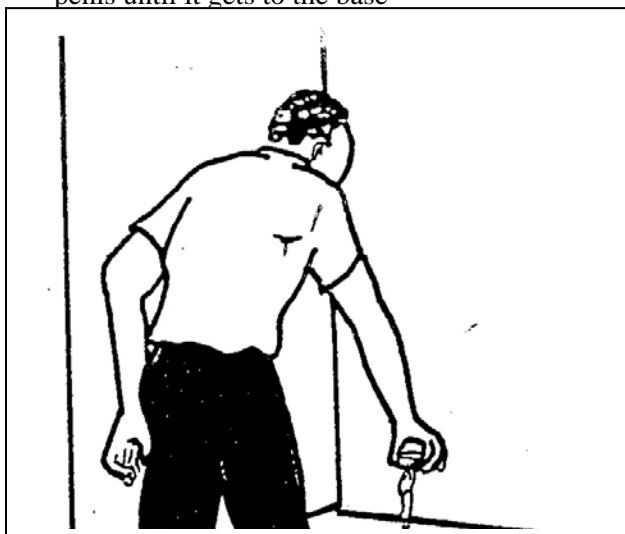
3. Hold the tip of the condom to squeeze out air
make room for sperms.



4. Unroll the condom onto the erect
Penis. Continue to hold the tip of the
penis and unroll



5. Keep unrolling the condom the whole length
penis until it gets to the base



6. After orgasm, hold onto the edge of
the condom and pull out of your partner
while the penis is still erect. Remove the
condom by carefully rolling it down the
penis.

7. Throw it away into a latrine or burn or bury it in the ground.

Local sexual practices, attitudes and taboos:

It is important that the trainer understands that there are no right or wrong answers to the discussion questions. The purpose of the discussion is to sensitise the trainees to various opinions about sex and to help them understand the wide variety of personal responses to sex. What follows are examples of answers that have been given at previous workshops in Uganda. They are listed here in order to give the trainer an idea of how the discussion is likely to proceed.

1. What is sex?

- i. “Sex is a process by which a man inserts his erect penis into the vagina so as to satisfy ones sexual desire.”
- ii. “A pleasurable act through which an individual reaches an orgasm (man), after penile / vaginal penetration.”
- iii. “A natural behaviour and marital act between male and female by introducing a penis into the vagina intended for expression of love and affection.”
- iv. “It shows the pinnacle of love and relaxation to nature’s desires”

2. What is abnormal sex?

Examples that have been suggested are: Oral and anal sex, sex with a covered penis i.e. condoms, sex without penetration, lesbianism, masturbation, coitus interruptus, etc.

3. What are your feelings about sex?

Examples from previous discussions include:

- i. “Sex should be done in privacy”
- ii. “Sex is for reproduction”
- iii. “Sex known to a third party is shameful”

4. Two people are having sex, what do you feel about them?

Examples of responses from previous discussions include:

- i. “They have enjoyed each other”
- ii. “They are just common lovers”
- iii. “Not serious”
- iv. “I would feel jealousy”
- v. “One was paid money”
- vi. “It would not bother me”
- vii. “I would feel like doing the same”

5. What do you think of someone who asks you for sex?

Examples from previous workshops include:

- i. “May be wanting money”
- ii. “May be teasing me”
- iii. “Not serious”
- iv. “I would feel shy or embarrassed”
- v. “May be infected with STD / HIV”
- vi. “Loves me so much”

6. How do people ask for sex?

Examples from previous workshops include:

- i. “Can I have the goods?”
- ii. “Let us go to sleep together”
- iii. “They tell the wife to turn around in bed”
- iv. “I love you”
- v. “You are beautiful”
- vi. “Let’s go for a drink”
- vii. “They tickle the woman’s breasts”
- viii. “They touch her genitals”

7. What social activities may promote or result in sexual activities?

Answers from previous workshops include: Dancing, parties, traditional ceremonies, drinking alcohol, school outings, water fetching in the evenings, visiting friends.

8. Describe the various local forms of sex and what takes place in each?

Some of the descriptions from previous workshops include:

- i. Ekukumo (Time bad / Saa mbaya): This is done when both or either partner has no time. The woman bends forward in a standing position with her lower limbs abducted allowing the man’s penis into the vagina, as the man holds her abdomen pushing the penis in and out. Strictly the woman should not scream.
- ii. Kachabali (the western style): This is where the man holds his penis and strokes it around the woman’s clitoris. When the man is about to ejaculate, he pushes the penis right inside the vagina.

9. What sexual activities does your culture object to?

Some of the previous discussions gave the following responses:

- i. “A married woman is not to have sex in the bush as the children may die.
- ii. “You should not have sex with close relatives e.g. aunties, brothers, sisters etc.
- iii. “No sex in a house still under construction.
- iv. No sex during the engagement period.

Local sexual terminology:

This helps health workers to have experience in naming the parts in his local language and feel free when expressing himself / herself to a patient. In case of an STD, a clinician will be able to say which part is affected and this leads to clear diagnosis and treatment and client education.

Core group intervention strategy using local knowledge, attitudes practices and behaviour:

Trainers should stress to the health workers that in formulating an intervention strategy, it is necessary to formulate messages that have targeted intervention information.

Such messages should target that specific aspect of behaviour, which those practicing it need to address.

The messages should be pointing out the risk inherent in that aspect of behaviour, the reason for the risk and should point out how to go about modifying it. Trainees too ought to tell you where the perceived risk groups are likely to be found. The messages should sound persuasive, not intimidating and not blaming those practicing.

What follows is the thinking of trainees of one workshop on what they perceived to be high-risk groups.

Target group	Reasons for the risk	Venue for Information dissemination	Risk perception message
1. Bar maids/ waiters.	Take alcohol Become loose Deal with drunkards.	Bars Hotels	People who buy sex from you also buy from others who may have STDs. So by selling sex, you expose yourself to STDs. Drunkards have lost sense of judgment and have sex with multiple partners who may have STDs.
2. Soldiers	Rape Multiple sexual partners Desperate Take alcohol	Barracks	Having forced sex leads to trauma, which makes it easy to get HIV.
3. Travelers and businessmen.	Multiple partners at stopovers. Buy sex Take alcohol	Hotels, Bars Garages	Those who sell sex to you also sell sex to others who may have STDs.
4. Musicians.	Travel a lot Attract Women Take alcohol	Night clubs Parties	The people who admire you admire other people and have sex with them. They may have STDs.
5. Polygamists	Multiple partners Cannot satisfy all their wives sexually	RC Meetings	When a woman sleeps alone without her husband, she may look for someone to keep her company who may give her STDs.
6. Students	Experimenting with sex Selling sex	Schools	To experiment with sex, you meet with many sexual partners who may have STDs. This increases your chances of getting STDs.

Further reading:

1. Ghee A, Field LM, Coates T. Behaviour Change in a clinic setting. In Delabetta G, Laga M, Lamptey P. Eds. Control of Sexually Transmitted Diseases: A Handbook For The Design And Management Of Programs: AIDSCAP/Family Health International

UNIT 14
COUNSELLING IN STD MANAGEMENT:

Meaning of counseling:

Counseling is a helping relationship where a counselor helps a client to identify and analyse his/her problems, explore possible options and come up with realistic action plans. Counseling therefore is a way of facilitating someone to explore their needs and discover their strengths and resources.

Qualities of a good counselor:

1. **Empathetic understanding:** This is the ability to cognitively and emotionally experience the world from the other person's perspective and help them cope and be able to stand up on their own feet as soon as possible
2. **Genuine sincerity:** The ability and willingness to be open, real and consistent in the relationship with the client. A counselor should be prepared to give time and attention to the client
3. **Unconditional positive regard:** The ability to communicate with the client without blame or negative feelings and making them feel they are accepted.
4. **Emotional stability and maturity:** The counselor should be a mature person who can handle his / her problems and anxieties effectively
5. **Warmth.** The counselor care and respects clients
6. **Knowledgeable:** The counselor should be well trained and equipped with the basic knowledge and skills such as basic facts about STIs and HIV/AIDS, Communication skills in counseling, positive attitudes in counseling etc.

A health worker can help people by using simple counseling rules. These are, being a good listener, taking time to counsel, being concerned about clients' issues, being available when clients need you, establishing trust and confidentiality with client, being consistent in all that you say, with correct and accurate information and being empathic

It is also important when talking to clients to avoid:

- i. Telling them what to do, e.g. go and use condoms
- ii. Doing all the talking, allows the client to do so to.
- iii. Using complicated or confusing words e.g. "it seems you have bacterial vaginosis". You can say "you have an STD that brings vaginal discharge"
- iv. Making promises that can't be kept e.g. "I will see you on Sunday"
- v. Giving false reassurances e.g. "These sores will not come back if you take these drugs" when dealing with somebody with genital herpes.
- vi. Being judgmental e.g. "how can you sleep with all these women in 2 days!"

The following are practical counseling hints for health workers.

1. Being available. This means that you must take time to talk with people and listen to their concerns. Sometimes this may mean not doing something else in order to have time with someone. Other times, it may mean making arrangements to come back and talk to someone at a later date. Being available is often as much a way of thinking as it is a matter of time.

2. Listen actively. It is important to listen to what a person is saying. This means listening to their words and listening to how something is said. It is important to hear how a person sees his situation. Listening is by far the most important component to good communication. Part of learning to listen involves reproducing behaviour that accompanies “active listening”. Behaviour that indicates active listening include:

- i. Meeting clients at a place that is comfortable and private or talking softly.
- ii. Maintain eye contact.
- iii. sit quietly while the other person is talking
- iv. Acknowledge the person talking by nodding or using words as “then”, “and” etc. These kinds of words encourage the client to keep talking.
- v. Give clients time to think, ask questions and talk.
- vi. Every now and then restate and paraphrase what the person has said in order to check that you understood it correctly. Ask the client questions in order to clarify.

3. Use effective questions. Unless you ask questions effectively, you can never know the line problem of the client. Asking questions that can yield answers to help solve the problems of the client requires:

- i. Using a friendly tone that shows interest and concern and friendliness.
- ii. Asking one question at a time and waiting for an answer. Clients get mixed up with many questions especially with their disturbed emotional state.
- iii. Asking questions that cannot be answered “yes” or “no”. Ask open-ended questions that encourage clients to say more. For instance, instead of asking “are you married?” ask “tell me about your life”
- iv. Avoid starting questions with “why” which sounds as if you are finding fault with the client. For instance, instead of asking, “Why didn’t you use a condom?” ask “You didn’t use a condom, what happened?”
- v. Must be able to ask the same question in many different ways if the client hasn’t understood the question.

4. Provide accurate and complete information. Through questions and discussion

- i. Use short words and sentences.
- ii. Use words the person understands
- iii. Use pictures whenever they are available
- iv. Use stories to help a person to understand
- v. Stop from time to time and ask clients if they understand
- vi. Ask if they have questions
- vii. Repeat instructions

- viii. Ask them to repeat instructions to check if they have understood the important messages or actions

5: Notice any non-verbal communication. It is important to be able to notice any non-verbal communication that the client exhibits. That is being sensitive to his body movements. Many clients may not be able to talk but you can notice his movements and interpret these movements and ask him what he feels. A client may sit with his legs as entwined together and arms too. He may be tense and cold. A client may fail to talk or may get numb. He may be depressed, tense, stressed, or not at ease to talk or angry. A client may cry, be sad or happy. Therefore, it is up to the counsellor to be able to interpret this behaviour to be able to solve this client's problem.

6: Discuss sensitive topics with ease. Demonstrate ease when talking about topics normally avoided in ordinary social life. The ability to talk and ask questions about sex and sexuality, including unusual or taboo practices in such a way that clients will respond honestly without taking offense must be practiced. Often generalising questions to other people will allow a person to talk more freely at the beginning of a counseling session. For example you may say "some people believe that you can only get AIDS only from bar girls". By beginning with what "other people" do, you indicate that the client is not alone in whatever risk behaviour is being practiced and that you are familiar and at ease when discussing the issues.

7: Respect the clients' rights and confidentiality. Anyone who counsels should care about people, this doesn't necessarily mean liking everyone. It means recognising the individual as a person with hopes, family, friends, and rights of their own. Trust and confidentiality are cornerstones of counseling. Many of the things that are discussed are sensitive and personal. If the information is not kept confidential, trust may be lost and you can no longer be a source of support.

A FINAL HINT: Remember you will only succeed to the degree that you can communicate effectively at the client's level of comprehension.

Situations in STD management where counseling is particularly important:

In the management of STDs, counseling issues revolve around prevention and care and ultimately behaviour change. Pertinent issues to be addressed include

- i. Partner notification / contact tracing and treatment for both
- ii. Ensuring treatment compliance
- iii. Prevention of STDs and re-infection, safer sex with emphasis on condom use
- iv. Complications of STDs e.g. Infertility, chronic PID,
- v. Recurrent and incurable STDs like genital herpes
- vi. Education about high risk groups e.g. barmaids, sex-workers, truck drivers
- vii. Relationship between HIV/AIDS and STDs
- viii. Referral for HIV counseling and testing
- ix. Follow up after treatment
- x. Client education on basic facts about STIs and HIV/AIDS

Case study I for activity I

Maria Musoke is a married woman with 5 children, and lives in a rural area of about 50 kms from a trading centre. She has been having children every year, and it has been difficult for her. She has to move 50 kms on foot to the trading centre to deliver her babies and they usually get sick too. She has a friend, Mrs. Mutabazi who is married too but is not so hard up with children's health. She has 3 children who are well spaced too. They rarely get sick and her economic status is good, so at times, she rides to get to the health centre. Mrs. Mutabazi used family planning, so Maria decided to go and ask why Mrs. Mutabazi wasn't finding problems with caring for the children. She also went further and explained her economic problems. Mrs. Mutabazi was so good, she told Maria how she knew about family planning, what it does and how she had benefited from it. She was also sympathetic about Maria's problems and situation. Maria after this discussion with her friend decided to take herself to the clinic.

Four years later, after Maria had had no more children, and her economic status had improved. She could now earn money of her own and was planning to buy a bicycle to take her goods to the market in the trading centre.

Role-play 1 for activity 9

An STD client aged 18 years, female, has sores, which come and go whenever she has her periods for 2 years. She has been treated several times without a cure. She also has a greenish discharge, which started 2 weeks back. She has never got any treatment for this. For the last 2 months, she has had as many as 8 partners. Counsel this patient including partner notification, treatment compliance; follow up, complications and prevention in the counseling session. Also remember this STD client is in a vulnerable group, risk group, and has genital herpes.

UNIT 15
ORGANISING STD SERVICES DELIVERY AND INTEGRATION INTO
REPRODUCTIVE AND OTHER HEALTH SERVICES:

Introduction

The provision of early and effective diagnosis and treatment of sexually transmitted diseases (STDs) is the cornerstone for STD control. Appropriate STD diagnosis and management requires provision of non-stigmatizing, acceptable, accessible and affordable services for persons with STDs. The most effective way to reach this goal is to provide STD care services within the reach of the community by incorporating them into primary health care (PHC) services and family planning (FP) and maternal and child health (MCH) services.

Whereas there is a role for dedicated STD clinics in teaching, referral and reference centers, there is little justification for setting up stand-alone clinics dedicated exclusively to the diagnosis and management of patients with STDs. Additional problems are encountered and holding special sessions for STD patients within PHC, FP and MCH clinics reduces access to STD services. Vertical STD services may be more convenient for the clinic staff but, from the point of view of the STD patients, the restricted opening hours and special days of operation are unacceptable because of the potential delay in diagnosis and treatment and because of the possibility of stigmatization of persons attending dedicated STD clinics. In addition, from the public health point of view, any obstacle to the timely diagnosis and appropriate management of STDs potentially contributes to the spread of these infections in the community.

Therefore all PHC clinics should provide comprehensive health care for the community including care for STDs. Efforts should be made to provide PHC services, including STD services, whenever the health unit is open. Whenever possible, diagnosis, treatment and education/counseling services for STD patients should be offered during the patient's first visit to the clinic. Experience has shown that many STD patients are unwilling or unable to attend more than once for these services.

Functions of STD Services

The functions of STD services include the:

- Detection STDs including HIV infection and offer prompt and appropriate treatment
- Advice on treatment compliance and follow-up procedures
- Management treatment failures
- Ensuring that the patient's partner(s) are evaluated and treated
- Counseling on disease prevention including the use of condoms
- Identification other health problems and, if necessary, to manage them or refer the patient to other appropriate health services
- Compilation records of clinical activities and reporting data
- Use these data to evaluate the services, order supplies, plan for future needs and facilitate disease surveillance and trend analysis

Organisation of the Patient Management Process

- Patient registration and recording of basic information
- Patient education while waiting to be seen by the clinician (posters, leaflets, educational talks and demonstrations, films etc.
- Clinician consultation including greeting, history taking, examination, specimen collection, diagnosis, treatment, counseling, specific patient education, partner and contact notification etc.

Basic requirements of STD Clinical Services

Basic requirements for STD services delivery in a health unit include:

i. Staff

- Clinician for diagnosis and treatment of patients
- Assistant to assist the clinician during examination and to help collect specimens and administer treatment
- Counsellor to assist in patient education and counseling and partner/contact notification and tracing
- Clerk for registering patients, maintaining records and preparing statistics
- Secretary to type correspondence, arrange meetings etc.

ii. Materials, Equipment and Supplies

These include consultation/examination room with provision for privacy, examination couch, stirrups (if vaginal examinations will be performed), bed sheets and screens. Other equipment include: a desk or writing table and chairs, speculum, bowls, torch or other source of light, drinking water, drug box, bucket, emergency kit for treatment of anaphylaxis, condom demonstration models (model penis) and STD Treatment Guidelines and treatment algorithms. Consumable items required include: drugs for STD treatment, batteries, disinfectant (e.g., dettol or jik), record books and related forms, condoms, water for injection, syringes and needles, gloves and cotton wool

Reporting Forms

Records of STD clinical activities are the primary data upon which most STD data and reports are based. Such patient records typically include basic demographic information about the patient (i.e. age, sex, address etc.) and information about the patient's clinical presentation, diagnosis and treatment prescribed. It is important to collect data about STD patients on a regular basis because these data are necessary to:

- Assess the size of the STD epidemic
- Assess the services being delivered
- Plan for the human and material resources needed
- Monitor and evaluate the efforts to prevent and control the STD epidemic

Any summary or report that is written about STDs is based on data collected at the time STD patient are seen. Hence, the information contained in the reports can be no more accurate than the basic data from which they are drawn. Therefore, it is critically important to record accurately the information requested concerning STD patients. This will help to assure that the accumulated data provides the best possible picture of the true STD situation in the community and at the health unit.

Writing Reports

STD reports are the statistical and narrative summaries of these patient records that are compiled and analysed periodically for use at the health unit level. These reports are also forwarded to the district and national levels where they are combined with other reports and data sources to help describe the STD situation in the country.

The first step in making a report is to collect all the pertinent recorded data about STD patients that are available at the health unit. These raw data may be found on clinic records, tally sheets and in detailed clinical notes of individual patients. The required information is then extracted from these primary sources and presented in the form of a statistical and narrative summary of activities for a particular period of time. The easiest and clearest way to present this sort of information is in a series of simple tables or graphs accompanied by written descriptions. The reports should be retained for use at the community and local health unit level in addition to forwarding them for use at the district and national levels.

Monitoring

Monitoring is a continuous process used to promote and maintain the delivery of efficient and high quality STD services. The purpose of monitoring is to ensure that work is progressing as planned and to anticipate or detect any problems in implementation. The monitoring process focuses attention on the implementation of activities. Some examples of monitoring activities for STDs include checking on the availability of adequate supplies for the diagnosis and treatment of STD patients and supervising the clinical performance of health workers at the health unit level.

Support supervision

Supervision is one of the most important methods used in monitoring. Properly conducted supervision is non-threatening to the person being supervised and should be designed to assess job performance and ensure competence through observation, discussion, support and guidance. Supervisory checklists that might be used to monitor STD service delivery include the following elements:

- Details about the clinic facility, i.e. name, type, location etc.
 - Details about the supervisory visit, i.e., name of supervisor, name of person met, the date and time of the visit etc.
 - List of the established staff at the clinic by name and cadre noting if they were seen during the supervisory visit
 - List of clinical equipment noting if each item is present and in working order
 - Review of clinical case management by sitting in on patient/clinician sessions and reviewing records - are diagnoses made correctly?, is the proper treatment given?
 - Review of the records to ensure that all data is collected and recorded legibly
 - Review reports to ensure they were written, they reflect the primary data kept at the clinic and that they are consistent in comparison to other data such as drug use etc.
- Record of questions asked and topics discussed with the health unit staff.

Further reading:

1. Van Praag E, Knippenberg R. Issues of Integration of STD programmes into Health Care Systems. In Delabeta G, Laga M, Lamptey P. Eds. Control of Sexually Transmitted Diseases: A Handbook For The Design And Management Of Programs: AIDSCAP/Family Health International

UNIT 16
COMMUNITY EDUCATION ABOUT STIs:

Health workers will have the greatest impact on preventing STDs if their educational efforts go beyond the health facilities. Most people do not know how to recognise the signs and symptoms of STDs or what to do should they experience those symptoms. There are several ways you can reach the people who don't visit your health facilities.

- You can give brochures or pamphlets about STDs to your clients and ask them to share them with others.
- You can put up posters for the community.
- You can organise and conduct community education events like film shows, group talks or drama presentations.

This Unit will focus on how to conduct community education events.

Planning for Community Education:

Community education events are most successful when they are carefully planned and prepared. When planning an event, it is important to ask yourself the 5W's and 1 H:

Who? Who is your audience? Do you want to educate every one in the community or you would like to segment your audience by age or other criteria?

Why? Why do you want to educate your audience? What is the objective of the event? In most cases, you will want your audience to help prevent the spread of STDs by recognizing signs and symptoms and seeking appropriate treatment, and notifying their partners. In some cases, there may be a special problem that you have noticed among your clients or in the community and you want to tackle it. For example, there may be serious rumors about the effectiveness of condoms that you want to dispel.

What? What information do you want to get across your audience? In order to establish this, you need to take into account the knowledge, attitude and practices of your audience. Sometimes you may decide to conduct education because of a problem that you have noticed among your clients. At other times you may want to educate as wide an audience as possible with general information about STDs and how to prevent them.

Where? Where will you hold the event? This will depend a lot on who your audience is, how many people you expect to attend, what you intend to discuss, and how you will put your message across. For example, if you plan to use a video, then you will want a venue with electricity, seating and a place to set the video monitor. If you are going to address a large crowd, then you may decide to hold the event outside in a central location.

When? When will the event take place? You may decide to hold the event on a weekend, in the morning or in the evening. This will depend on your audience, when they are most likely to attend? Give yourself enough time to prepare and publicize the event.

How? How will you get the information across to the audience? You should select a method that will best clarify and illustrate information, and hold the attention of the audience. Some suggestions are: discussions for groups of 15 or less, videos or films for large groups and for youth, drama presentations for older men or women, contests or quizzes for youths, or lectures for groups of 15 or more or a combination of these.

Organising the event:

Once you have answered the above questions, you can now organise the event. Organisation includes 4 steps.

Step 1: Mobilising the Audience: There are 2 ways of Mobilising the audience. Both begin by introducing yourself to the local leaders first, and explaining the purpose of the event. Often, you will find the leaders are very interested in helping with the organisation of the event. Once you have introduced your self to the leaders, you may decide to work only with existing community groups. The advantage of this method is that you will not have to publicise the event so vigorously since organised groups will most likely be having regular meetings. They may be able to schedule the event as part of their regular meetings. The disadvantage is that you will be able to reach people who are members of the group. You may decide to organise a community event. The advantage of this approach is that you will reach a larger group of people. The disadvantage is that it will involve more work to publicise the event and you will have less information about the audience around which to plan your messages and the educational methods. If you have introduced yourself to the community leaders and asked their help, they will be able to call the people to your event. To make sure that as many people as possible attend, you can also put up posters inviting community members and tell all your clients so that they also spread the word.

Step 2: Learning about the Audience. Your event will be most successful if you tailor your messages to the educational needs of your audience. The only way you can do this is to learn a little about your audience. In particular, it is helpful to know:

- Age of the group members
- How many they are in the group
- The group's interests
- Whether the group is men, women or both.

There are a couple of ways of learning about the audience. If you are planning the event for an organized group, you can ask their leader about the members. If you are planning a community event, then you ask the audience a few questions at the beginning of the event and adjust your messages accordingly. You can also base your messages on the educational needs of your clients since they are part of the community.

Step 3: Preparing the venue and visual aides. Before the day of your group talk, confirm the time and place. Be sure that seating arrangements are in order. Collect and organise your visual aids. Prepare any handouts you want to give to the group. Be sure you have enough copies for all. Check any equipment that you will use in advance.

It is important to prepare an outline for talk. Include the following information:

- Topic What will you talk about?
- Objectives What do you want the audience to know or do after the talk?
- Main points What are the most important points of your talk?
- Questions What questions can you ask the audience to start discussions?
- Visual aids Posters, flip charts, pamphlets, or models will you use to show the main points.

There are many different types of visual aides you can use to help your audience understand important points. When used correctly, visual aids assist you to:

- Hold people's attention longer.
- Explain sensitive points such as condom use.
- Provide similar information to every person you talk with.
- Show your interest in your audience's understanding, and
- Describe the internal organs of reproduction.

Visual aides may include posters, flipcharts, videos, brochures, anatomical models etc. They should be chosen carefully so that they illustrate important points that you want to make. Visual aids must be large enough for everyone in the group to see and they should be simple enough for them to understand. Not every visual aide is right for presentation. You should first plan the objectives and content of presentations and then make appropriate visual aides for the talk. Visual aides illustrate the presentation. They are not the reasons for the presentations.

Step 4: Conducting the event. The first rule of a successful health education event is to be on time. If you appoint a specific time for the event, then be there and ready to begin at the time. The second rule is to prepare well in advance. Don't leave preparations until the last minute. So if you are going to show a film, set up the equipment well in advance. The third rule is to practice what you are going to say. The following is the list of steps you should follow when conducting a group talk:

- Introduce yourself and the topic of your talk.
- Encourage group participation
- Guide the discussion and encourage everyone to talk.
- Encourage people to respond to each other's questions.
- Use clear correct information and answers using flip charts, films or posters.
- Use simple, clear and understandable language.

CASE STUDY

Mary is a nurse who works at a health unit in Uganda. She has been trained in the syndromic approach to STD care. She has noted that very few of the women she treated for STDs have been able to bring their partners for treatment. So she decides to conduct a discussion with the men in the community. She puts a sign on the front of the maternity unit, informing them to come to a public meeting at the maternity unit on Friday at 10.00am. Then she starts to plan her talk.

When she attended the training in the syndromic management for STDs, she had received a sample of a group discussion guide. So she digs it out of her notes and reads it over.

It is the outline of a health talk about STDs for adolescent girls, but it looks like it will work. Her notes also shows that she should show a video called “ More time” a story about a school girl in Zimbabwe who is deciding whether or not to have sex with a boyfriend. Mary thinks this will be good video to show to the group, so she requests a copy from the Health Education Division.

On Friday morning, Mary starts her ANC as usual. It is a very large clinic that day. By 10.00, there are still 20 - 30 women waiting to see her when a few men start appearing at the waiting crowd. Mary decides to finish with her ANC before she begins the presentation. At 12.00, Mary is finished with the ANC. There are still 5 men still waiting but several others have left. She begins to set up the video machine but discovers that there is no extension cord long enough to reach from the outlet in the immunisation room. She asks the waiting men if they know where to get a long enough cord and one says he does. He runs off to get it.

While still waiting, one of them approaches Mary and asks her what the purpose of the meeting. Mary replies that she will explain that later and asks the man to take his seat. To this, the man explains he is the LC I Chairman of the area and wants to know why she arranged the meeting without consulting him. Mary introduces herself to the man and explains that she didn't think she had to consult before organising an educational talk. She asks him why few so few men had come. The Chairman explains that most men probably didn't know about the meeting since she did little to publicise it and since most people in the community are Moslems, the men are at the mosque praying.

Then the man returns with the extension cord. He assists her to set up the video machine. Mary then tells the five people that she wants to talk to them about STDs and how to prevent them. She tells the men that she has a video to show them first. One of them suggests that they postpone the video until there is a larger group to watch. Mary agrees. After all it is now almost 2.00pm and the men are hungry, so is Mary. They agree to help her organise another meeting the following week when more men will be available.

KEY MESSAGES ON STDs FOR THE COMMUNITY THAT MAY BE USED

1. STDs are a real danger to your health. They make it easier to get HIV infection and can cause other problems like infertility for both men and women.
2. If you have a swelling, wound (sore), abnormal discharge or any discomfort around the genitals, you could have an STD and need to see a health worker.
3. Most STDs are curable if treated correctly.
4. You can avoid STDs either by sticking to one partner who is not infected, by abstaining from sex, or by using condoms correctly every time.
5. To get cured of STDs, all sexual partners must be treated and abstain or use condoms until the treatment is completed.
6. Take all your medication as instructed even if symptoms disappear or you feel better.
7. After treatment, return to the health worker to be sure you are cured and avoid re-infection, ensure that all your sexual partners receive treatment and use condoms.

Further reading:

1. Romocki LS, Gilbert S, et al. An Approach to effective communication. In Delabetta G, Laga M, Lamptey P. Eds. Control of Sexually Transmitted Diseases: A Handbook For The Design And Management Of Programs: AIDSCAP/Family Health International

UNIT 17
MANAGEMENT OF SEXUALLY TRANSMITTED INFECTIONS BASED ON
LABORATORY DIAGNOSIS

BASIC DIAGNOSTIC APPROACHES;

Health care providers (HCPs) have used one or a combination of approaches for diagnosis for STDs depending on their available resources: 1) Etiologic diagnosis based on laboratory testing 2) Clinical diagnosis and 3) Syndromic diagnosis.

The recommended approach for management of STIs in Uganda is the Syndromic approach. For the OBA Pilot project management of STI patients is going to be the aetiologic approach i.e. based on laboratory testing. However, in cases where diagnosis cannot be based on laboratory testing, patients shall be treated using the Syndromic approach.

AETIOLOGICAL DIAGNOSIS BASED ON LABORATORY TESTING

This unit addresses the management of STI patients basing on laboratory testing which is the basis for the OBA Voucher System Pilot project.

Microscopy or specific laboratory diagnostic methods are used in clinical and confirmatory testing for STD pathogens. This is the preferred and most clinically accurate method to identify specific pathogens so that the correct therapeutic regimen can be assigned to the patient. The feedback from laboratory test results also can be essential in improving the diagnostic skills of clinicians. Unfortunately in many resource-limited settings tests have generally been unavailable; therefore, development of these essential clinical skills often may be limited. However, the OBA pilot project in Mbarara shall address the limitations by providing the basic STD diagnostic laboratory tests in selected healthcare facilities.

Aetiological diagnosis relies on a well functioning laboratory; accurate and timely return of results; systems of quality control and quality assurance; dependable supplies of test kits, reagents, and disposables; a system of patient recall for patient results and adequate technical personnel and financial resources. Some diagnostic methods are relatively simple and accurate, such as microscopy (Gram stain) on urethral discharge for detection of gonorrhoea in men. Other test methods can be relatively expensive, technically complex or time-consuming often demanding sophisticated protocols, differential culture media, tissue culture facilities, complex confirmatory testing methods, or several days to obtain a result. In situations where results might not be obtainable within an hour, specimens **MUST** be collected but the patient should be treated basing on the Syndromic diagnosis and a return visit scheduled.

DIAGNOSTIC TESTS APPROPRIATE FOR RESOURCE-LIMITED SETTINGS

Simple, rapid, and inexpensive diagnostic tests for STDs should be used in resource-limited facilities wherever possible in order to strengthen and expand existing clinical diagnosis and improve Syndromic algorithms. In order to effectively perform on-site testing and more rapidly return results to patients, a laboratory should be established within or proximal to the facility. This clinical laboratory in turn needs support by either district, regional or central reference laboratory. Although perhaps distant from the local laboratory, they can evaluate specimens from patients with more accurate, technically complex or higher volume diagnostic methods.

GENITAL ULCER DISEASE

	Genital Herpes (<i>Herpes Simplex Virus Type II</i>)	Syphilis (<i>Treponema pallidum</i>)	Chancroid (<i>Haemophilus ducreyi</i>)	Lymphogranuloma Venereum (<i>Chlamydia serovariants L1-L3</i>)	Granuloma Inguinale (<i>Klebsiella granulomatis</i>)
Signs and Symptoms	Recurrent, small multiple painful ulcers which begin as vesicles	Primary chancre, painless well-demarcated ulcer	Dirty, painful ulcer usually with undermining edges	Swollen painful inguinal glands (buboes) occasionally with an ulcer	Heaped up (beefy) ulcer, usually painless
Laboratory tests	- Tzanck test - Immuno Chromato Graphic Tests - PCR	- RPR - TPHA - Dark field microscopy	- Gram stain - Culture	- Immuno Chromato Graphic Tests - PCR	- Giemsa stain for Donovan's bodies
Specimen	- Ulcer scrape - Blood	- Blood - Ulcer scrape - Lymph node aspirate	- Ulcer scrapping - Blood	- Blood	- Ulcer scrape

URETHRAL DISCHARGE

	Gonorrhoea (<i>Neisseria gonorrhoeae</i>)	Chlamydial Infections (<i>Chlamydia trachomatis</i>)	Trichomoniasis (<i>Trichomonas vaginalis</i>)
Signs and Symptoms	Pus discharge from the urethra and/or dysuria	Thin discharge from the urethra and/or dysuria	Often asymptomatic but can be associated with symptoms of urethritis
Laboratory tests	- Gram stain - Culture - PCR	- Immuno Chromatographic tests (test strips) - PCR/LCR	- Wet mount
Specimen	- Urethral swab - Urine	- Urethral swab - Urine	- Urethral swab - Urine

ABNORMAL VAGINAL DISCHARGE

	Vulvo-vaginal Candidiasis (<i>Candida albicans</i>)	Bacterial Vaginosis (<i>Gardnerella organisms</i>)	Trichomoniasis (<i>Trichomonas vaginalis</i>)	Cervicitis (<i>Neisseria gonorrhoeae</i> , <i>Chlamydia trachomatis</i>)
Signs and Symptoms	Whitish, itchy curd-like discharge with erythema and excoriations	Thin discharge with a fishy smell	Greenish itchy discharge with offensive smell	Occasionally pus-like cervical discharge
Laboratory tests	- Potassium hydroxide (KOH) preparation	- Wet mount Preparation - Whiff test (fishy smell)	- Wet mount preparation	- Gram stain - Culture - PCR/LCR - Immuno Chromatographic test (test strip)
Specimen	- High vaginal swab	- High vaginal swab	- High vaginal swab	- Endocervical swab - Urethral swab

UNIT 18
TREATMENT FLOW CHARTS BASED ON LABORATORY DIAGNOSIS

Although the use of the laboratory may be the best in making a definitive diagnosis and giving the specific treatment, there are still many limitations. This unit addresses the use of the laboratory in making the definitive diagnosis of the common/major STIs. However, in situations where the laboratory may not be able to make a definitive diagnosis, the healthcare provider will rely on the Syndromic approach for the diagnosis and give appropriate treatment following the treatment algorithm. The charts below have been developed to give step-by-step instructions showing laboratory investigations that can be performed to make a definitive diagnosis and the specific treatment.

MANAGEMENT OF ABNORMAL VAGINAL DISCHARGE

CANDIDIASIS

SPECIFIC TREATMENT

- Pessaries Clotrimazole 500mg stat or
- Pessaries Nystatin 100,000IU nocte for 14 days

NOTE

This condition may not require partner referral

TRICHOMONIASIS

- Tabs Metronidazole 2g stat or
- Tabs Metronidazole 400mg b.d for 7 days

BACTERIAL VAGINOSIS

- Tabs Metronidazole 400mg b.d for 7 days or
- Tabs Metronidazole 2g stat

RISK ASSESSMENT:

NOTE

This condition may not require partner referral

Initially, it was thought that the finding of vaginal discharge would be indicative of both vaginal and cervical infection. However, it has become clear that while vaginal discharge is indicative of the presence of vaginal infection, it is poorly predictive of cervical infection (gonococcal and/or Chlamydia).

Therefore, risk assessment basing on personal and partner behaviour is used as an additional tool in making a decision on treatment for all clients/patients who have abnormal vaginal discharges.

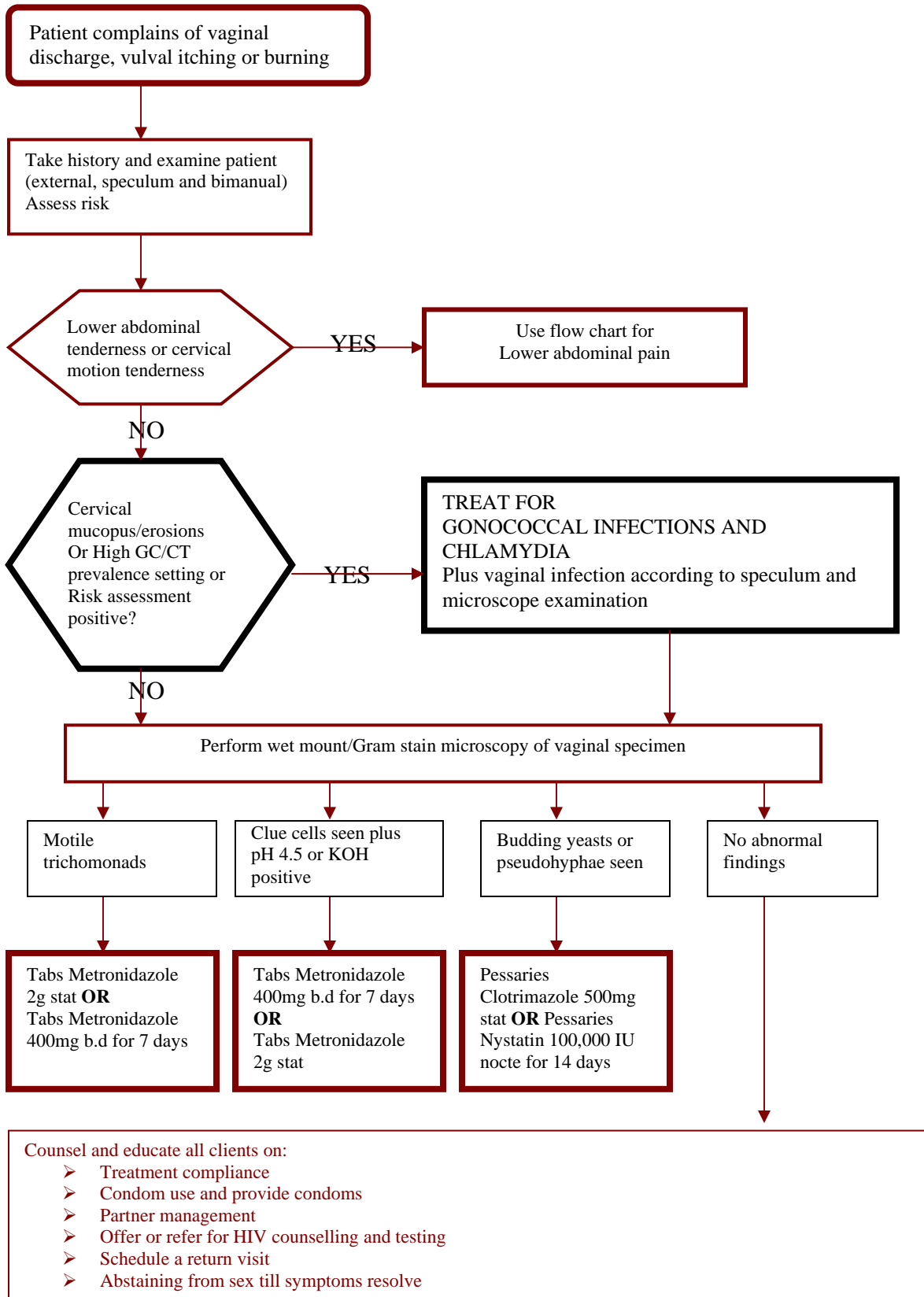
a. Personal Sexual behaviour

- Number of sexual partners in the last year
- Sex with a new or different partner in the past three months
- Any other STD in the past year
- History of exchange of sex for money, goods or drugs including both giving and receiving
- History of drug use

b. Partner Sexual behaviour

- Ask about the partner's sexual behaviour e.g. Does the partner
- Have sex with other partners
- Also have an STD
- Also have HIV-infection
- Use drugs
- If male, have sex with other men

ABNORMAL VAGINAL DISCHARGE



MANAGEMENT OF URETHRAL DISCHARGE

All male patients presenting with a urethral discharge and/or dysuria should be assessed for all the most likely causes using the laboratory. Specific treatment will be provided according to the laboratory findings and partners treated accordingly. Note that the sexual partners do not need to be subjected to laboratory tests.

GONORRHOEA

SPECIFIC TREATMENT

- Tabs Ciprofloxacin 500mg stat or
- Inj Ceftriaxone 250mg stat

NOTE

Ciprofloxacin is contraindicated in pregnancy and not recommended for use in children. Ceftriaxone is a possible alternative.

CHLAMYDIA

SPECIFIC TREATMENT

- Tabs Doxycycline 100mg b.d for 7 days or
- Tabs Tetracycline 500mg q.i.d for 7 days

NOTE

Doxycycline and Tetracycline are contraindicated in pregnancy. If partner, is pregnant the recommended drug is Erythromycin 500mg q.i.d for 7 days.

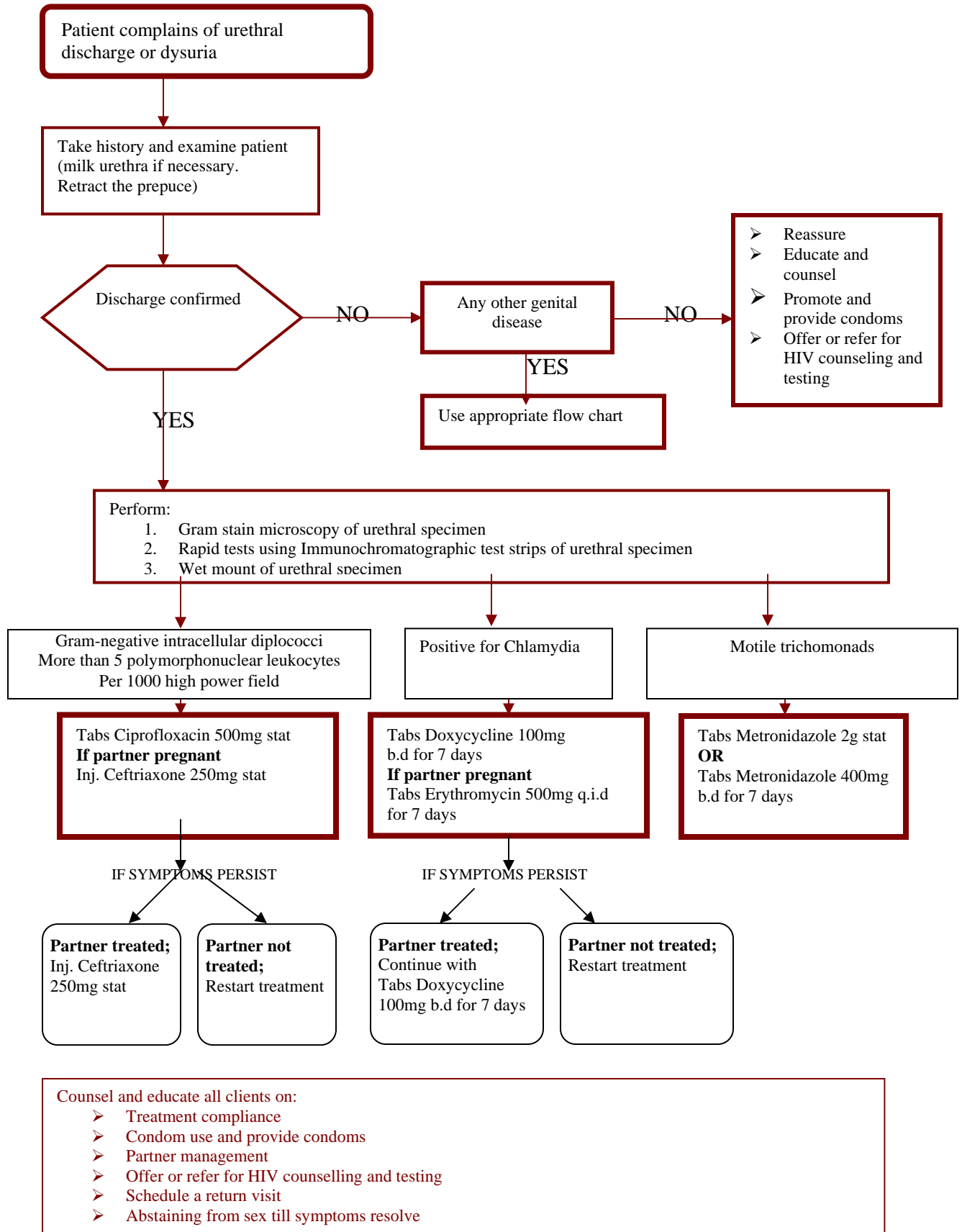
TRICHOMONIASIS

- Tabs Metronidazole 2g stat or
- Tabs Metronidazole 400mg b.d for 7 days

Beside antibiotic treatment, all the other components of STI case management package should be provided i.e. **Counsel and educate all clients on:**

- Treatment compliance
- Condom use and provide condoms
- Partner management
- Offer or refer for HIV counselling and testing
- Schedule a return visit
- Abstaining from sex till symptoms resolve

URETHRAL DISCHARGE



MANAGEMENT OF GENITAL ULCER DISEASE

Distinction should be made between vesicular and non-vesicular ulcers.

VESICULAR ULCERS:

GENITAL HERPES

SPECIFIC TREATMENT

- Tabs Acyclovir 400mg t.i.d for 7 days or
- Tabs Famciclovir 250mg t.i.d for 7 days

NON-VESICULAR ULCERS

SYPHILIS

SPECIFIC TREATMENT

- Inj Benzathine 2.4MU stat

For those who are allergic to Penicillin the recommended treatment is Erythromycin 500mg q.i.d for 14 days.

CHANCROID

SPECIFIC TREATMENT

- Tabs Ciprofloxacin 500mg b.d for 3 days

NOTE

It is contraindicated in pregnancy; the recommended drug is Erythromycin 500mg q.i.d for 7 days or Ceftriaxone 250mg stat.

LYMPHOGRANULOMA VENEREUM

SPECIFIC TREATMENT

- Tabs Doxycycline 100mg b.d for 14 days

NOTE

Erythromycin 500mg q.i.d for 14 days is recommended in pregnancy.

Fluctuant lymph nodes should be aspirated through a normal skin using a large bore needle (gauge less than 20).

Incision and drainage or excision is not recommended.

Treatment can be prolonged for longer than 14 days

GRANULOMA INGUINALE (DONOVANOSIS)

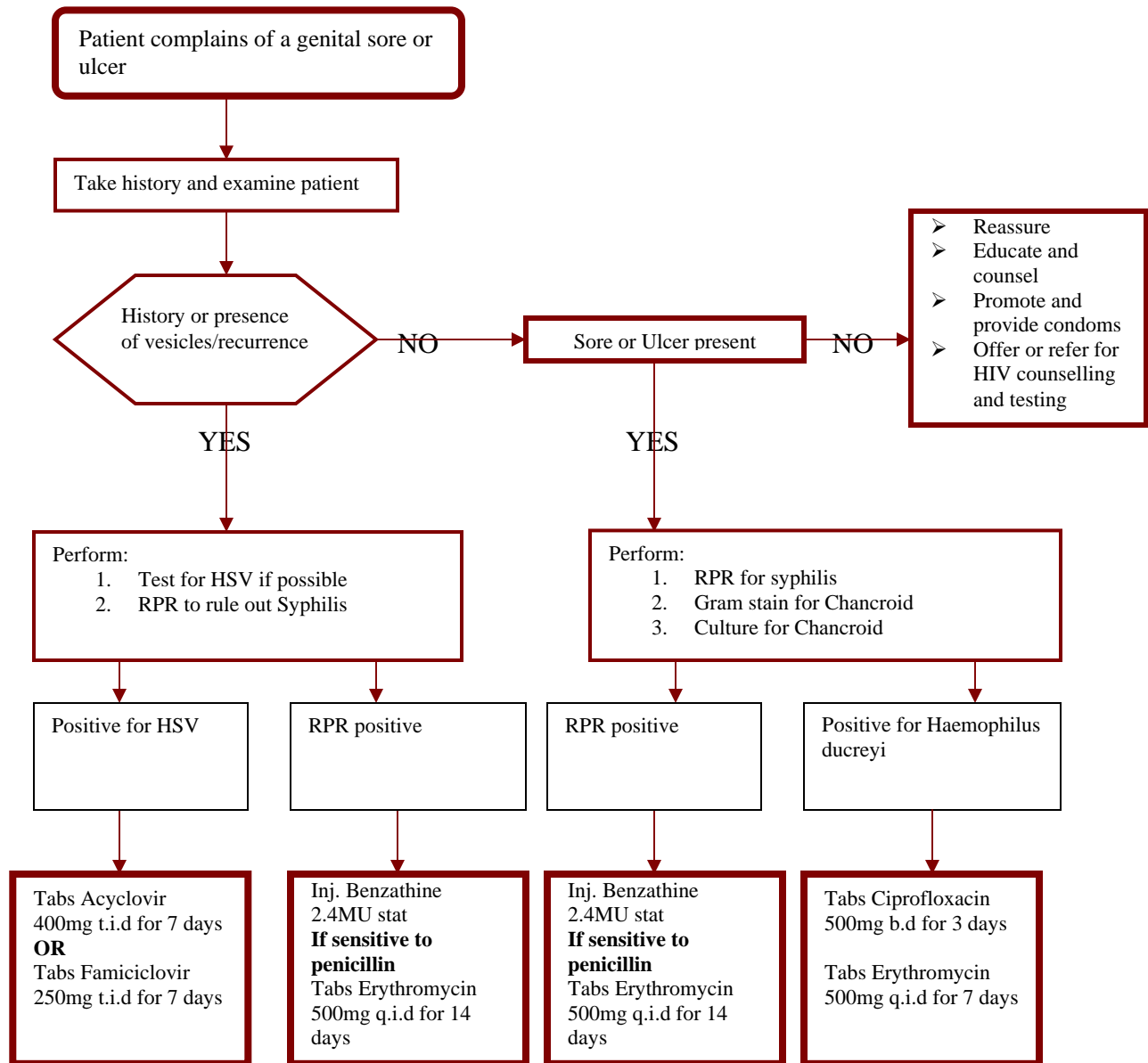
SPECIFIC TREATMENT

- Tabs Doxycycline 100mg b.d for 14 days

NOTE

Tabs Erythromycin 500mg q.i.d for 14 days is recommended in pregnancy

GENITAL ULCER DISEASE



Counsel and educate all clients on:

- Treatment compliance
- Condom use and provide condoms
- Partner management
- Offer or refer for HIV counselling and testing
- Schedule a return visit
- Abstaining from sex till symptoms resolve

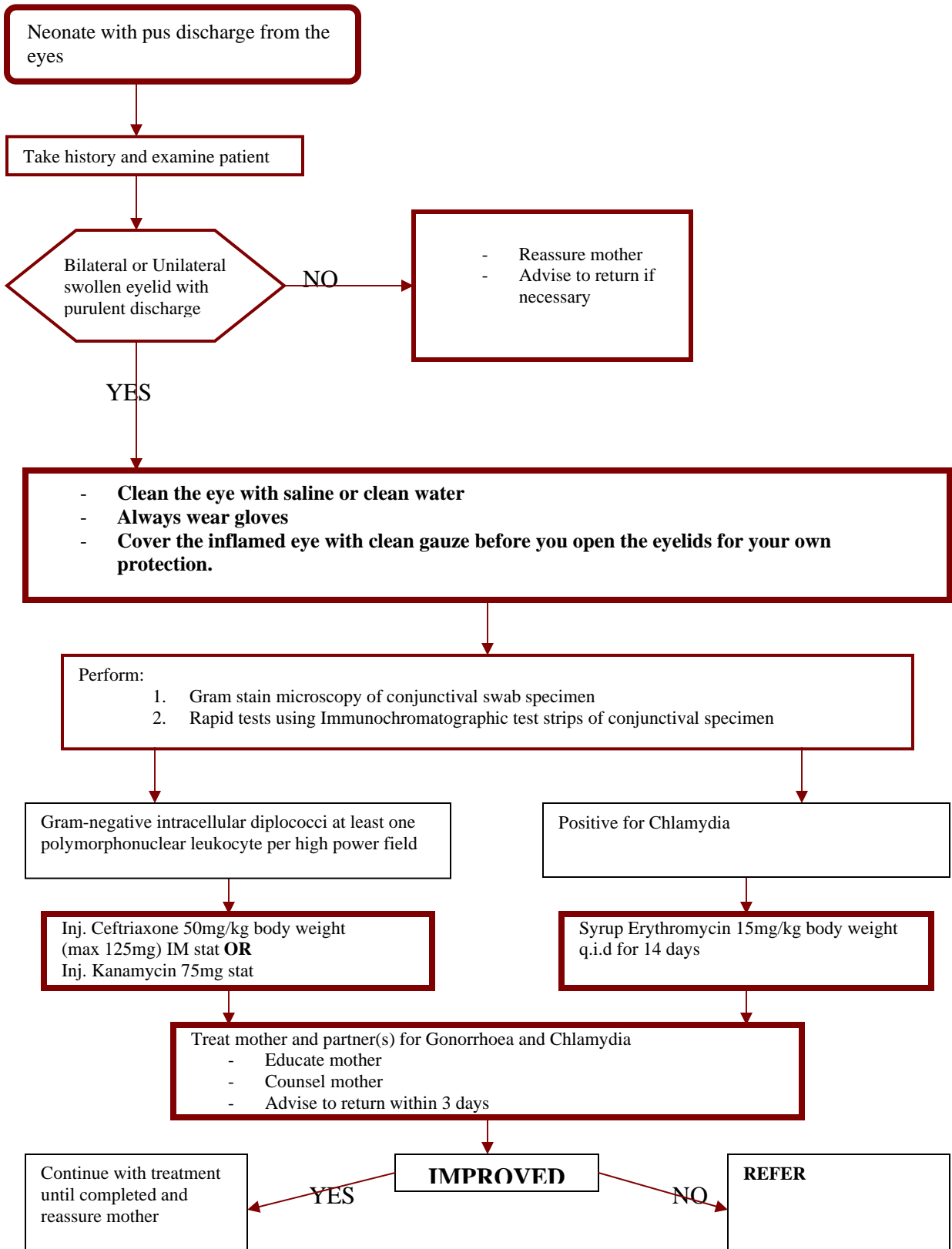
MANAGEMENT OF NEONATAL CONJUNCTIVITIS

NEONATAL CONJUNCTIVITIS (Ophthalmia neonatorum)

SPECIFIC TREATMENT

- Inj. Ceftriaxone 50mg/kg body weight (max 125mg) IM stat or
- Inj. Kanamycin 75mg stat plus
- Syrup Erythromycin 15mg/kg body weight q.i.d for 14 days

NEONATAL CONJUNCTIVITIS



UNIT 19
STANDARD OPERATING PROCEDURES:

SOP 1: RAPID PLASMA REAGIN (RPR/VDRL) CARBON ANTIGEN SLIDE TEST FOR SYPHILIS SCREENING

Staff qualified to perform the test; all cadres of qualified medical laboratory technical staff and especially trained staff.

Principle and purpose

A non-treponemal test is used to detect regain (non-specific) antibodies present in serum or plasma in patients with syphilis infection. The antigen is a modified RPR/VDRL antigen and contains micro particulate carbon, which enhances the visual differences between a reactive/positive and non-reactive/negative test result.

The test is used for the following purposes:

- Antenatal clinic screening, to prevent mother to child transmission (neonatal syphilis)
- To control the spread of genital ulcer disease, which may enhance HIV transmission.

Reagents and materials

The RPR Slide test kit contains all required reagents and supplies necessary to perform a pre-determined number of tests (this may not apply to all RPR kits – verify with packet insert). The RPR Slide kit contains:

- Disposable bottles and needles
- Disposable test cards
- Disposable dropper pipettes
- Rubber teats
- Disposable mixing sticks
- RPR carbon antigen reagent
- Instruction manual
- Controls – positive and negative

Additional requirements are:

- Disinfectant
- Gloves
- Rotator
- Timer
- Saline

Note

The RPR Slide test reagent must be stored at 2 – 8°C.

Sample required

Plasma or serum is the specimen of choice. CSF may also be examined.

Method

Qualitative Method

1. Bring the test kit reagents to room temperature
2. Using a rubber teat and dropper pipette, dispense 1 drop (0.05ml) of sample on one of the test card circles.
3. Dispense the positive and negative control sera in the same way.
4. Spread the sample over the entire test circle. Do the same for control sera.
5. Mix by shaking the reagent bottle (R1) and using a free flowing needle and dispense one drop on each circle.
6. Use the automatic rotator at 100rpm to rotate the test card for 8 minutes.
7. Read the results macroscopically in a good light.
8. Large aggregates in the centre and periphery of the test circle indicate a positive result. Small aggregates in the centre and around the edges of the test circle indicate a weak positive result. No visible aggregates indicate a negative result.
9. Note: For all positive results, proceed to perform a quantitative test.
10. Rinse used cards and pipettes with running tap water and place in bucket marked "INCINERATION"

Quantitative Method – End-point titration

1. Dispense one drop (0.05ml) of 0.85% saline onto circles 1 – 5 of the test card.
1. Dispense one drop (0.05ml) of sample onto the first circle, and mix by pipetting up and down.
2. Transfer one drop (0.05ml) of the mixed sample (1:2 dilution) to the second circle, mix and transfer one drop (0.05ml) onto the next circle.
3. Repeat the procedure up to circle no. 5, discarding one drop from the last dilution.
4. Shake the dispensing bottle to mix the reagent (antigen). Using a free flowing needle, dispense one drop of carbon antigen onto each circle.
5. Place the test cards on the automatic rotator and shake for 8 minutes at 100 rpm.
6. Read the microscopically in a good light. Ensure the positive and negative controls are reading correctly.
7. The last circle in the dilution series that contains macroscopic aggregates is the titre of the sample. If the sample is positive at 1:16 dilution in 0.85% saline and performing a serial dilution as described previously.
8. Rinse used cards and pipettes with running tap water and place in the bucket marked "INCINERATION".

Note

A positive result should be confirmed using another technique involving a specific *Treponema pallidum* antigen, e.g. TPHA

The "prozone" effect has been observed when a patient who is strongly suspected of having syphilis gives a negative qualitative test. In this case a quantitative test must be performed to eliminate the possibility of a prozone effect.

Reporting results

When there is clumping/aggregation of the carbon antigen, report the results as “Reactive” (Positive).

When the carbon antigen is smooth and even, report the results as “Non-Reactive” (Negative)

Quality Control

- Use known local positive serum or plasma (pooled sera provide better results). It is preferable to use sera with known RPR titres.
- Control sera for RPR should be heat inactivated.
- Run QC at least once per week

Reference values

The results of screening and confirmatory tests are interpreted as follows:

High titre active syphilis	RPR titre \geq 1:8 and TPHA +>
Low titre active syphilis	RPR titre < 1:8 and TPHA +
Old or resolved/treated syphilis	RPR – and TPHA +
Biological false-positive	RPR + and TPHA –
No syphilis	RPR – and TPHA –

Further reading:

1. Carter J, Lema O (1994). Practical Laboratory Manual for Health Centres in Eastern Africa, AMREF.
2. Cheesebrough, Monica (1998). District Laboratory Practice in Tropical Countries, Part 1. Tropical Health Technology, U.K.
3. Hunter George W., Frye William W., Swartzwelder (1963). A Manual of Tropical Medicine, Third Edition. W.B. Saunders Co., USA
4. Munafu C, Guma G.B., Igune M, Rwandembo M.W., Olupot-Olupot P., et al (2000). Management and Control of Diseases of Epidemic Potential in Uganda. Ministry of Health, WHO, AMREF.
5. Munafu C., Tenywa T., Musoke Bukenya M. (1998). Validation of Syndromic Management of Sexually Transmitted Infection, Volume 1, AMREF.
6. Nduba John, Mabey D (1991). Self Instructional Manual on Sexually Transmitted Diseases, AMREF.

SOP 2: EXAMINATION OF HIGH VAGINAL AND GLANS PENIS SWABS FOR SEXUALLY TRANSMITTED INFECTIONS

Staff qualified to perform examination of high vaginal and glans penis swabs for sexually transmitted infections: all cadres of qualified medical laboratory technical staff and specially trained staff.

Principle and purpose

Examination of a wet preparation of a high vaginal swab or glans penis swab is useful for detecting *Trichomonas vaginalis*, *Candida* species and *Gardnerella vaginalis* infections. For *Trichomonas vaginalis* and *Gardnerella vaginalis*, the swab is emulsified immediately after collection in a drop of saline on the slide, and the preparation is examined for motile trophozoites of *T vaginalis* or for “clue cells”. For *Candida spp* infection, the swab is emulsified in saline or 10% potassium hydroxide (if the discharge is thick) and examined for the presence of budding or germinating yeast cells.

Reagents and materials

- Sodium Chloride
- Potassium Hydroxide
- Distilled water
- Conical flask
- Reagent bottle
- Dropper bottle
- Gloves

Preparation

Physiological saline: Dissolve 0.85 g of Sodium Chloride in 100ml-distilled water. For daily use, transfer to a dropper bottle and label.

10% Potassium Hydroxide: Dissolve 10g potassium hydroxide pellets in 100ml distilled water in a flask, transfer into a glass reagent bottle with a plastic screw cap.

Sample required

Collect discharge from the vagina and glans penis using already prepared sterile swabs. A high vaginal swab (together with an endocervical swab) is collected by the clinician using a vaginal speculum. Glans penis swabs are collected in a room within the laboratory. Always wear gloves and cover broken skin or wounds with Elastoplasts when handling urogenital specimens.

To collect discharge from glans penis, take a sterile swab and moisten with physiological saline. Gently rub the glans penis with the swab to collect any exudates present. Place the swab in the test-tube. Label the test-tube with a grease pencil.

Method

1. Label each swab with the patient's laboratory number using a grease pencil.
2. Clean a glass slide using gauze or dry cotton wool.
Label the slide with the patient's laboratory number.
3. Place a drop of physiological saline on the slide and roll the swab several times in the saline to emulsify the discharge.
4. Mix well using the swab stick.
5. Put on a cover slip and place the slide on the microscope stage.
6. Swing the X 10 objective into position and examine the smear systematically.
7. Examine structures in more detail using the X 40 objective.
8. Record findings.
9. In certain circumstances, perform a KOH preparation and Gram stain (see notes below).
10. Remove cover slips and place in the container of 5% Lysol marked "SHARPS"
11. Place cotton wool, gauze and swabs in the bucket marked "INCINERATION"

Notes

If *Candida albicans* is suspected and not seen on direct saline examination, or if *Gardnerella vaginalis* infection is suspected or "clue cells" are seen in a direct saline preparation, perform a 10% KOH preparation and a Gram stain [See SOP 3]. In the 10% KOH preparation, clumps of epithelial cells are digested for easier visualization of *C. albicans* and a fishy odour is produced in the presence of *G. vaginalis* infection. Gram stain demonstrates the morphology of *C. albicans* and clue cells more clearly.

Reporting results

Report type of specimen examined, method used and presence or absence of cells and organisms.

Example 1: HVS: Direct saline preparation – many epithelial cells seen; few pus cells; *Trichomonas vaginalis* seen.

Example 2: HVS: Gram stain – many pus cells, *C. albicans* yeast cells seen.

Further reading:

1. Bukenya MM, Mugoya S, Maginh R, Munafu C et al (1998). Sexually Transmitted Infections, Manual, AMREF
2. Carter J, Lema O (1994). Practical Laboratory Manual for Health Centres in Eastern Africa, AMREF.
3. Cheesebrough, Monica (2000). Medical Laboratory Manual for Tropical Countries, Part 2: Microbiology, Butterworth & Co Ltd, UK.
4. Munafu C., Tenywa T., Musoke Bukenya M. (1998). Validation of Syndromic Management of Sexually Transmitted Infection, Volume 1, AMREF.
5. Nduba John, Mabey D (1991). Self Instructional Manual on Sexually Transmitted Diseases, AMREF.

SOP 3: MICROSCOPIC EXAMINATION OF URETHRAL, ENDOCERVICAL AND NEONATAL CONJUNCTIVAL SWABS FOR SEXUALLY TRANSMITTED INFECTIONS

Staff qualified to perform microscopic examination of urethral, endocervical and neonatal conjunctival swabs; all cadres of qualified medical laboratory technical staff and specially trained staff.

Principle and purpose

The majority of urogenital infections are acquired by sexual contact and are known as sexually transmitted infections (STIs). STIs may also be transmitted to newborn infants at the time of delivery, causing infections such as neonatal pneumonia and conjunctivitis.

Urethral smears/swabs, endocervical swabs and neonatal conjunctival swabs are mainly used for detection of *Neisseria gonorrhoea* infections. Smears are prepared from the swabs and stained using Gram stain, which provides a presumptive diagnosis. Wet preparations are also examined to exclude mixed infections with other STIs.

Gram stain classifies bacteria into two major groups: Gram positive and Gram negative. When bacterial cells are stained with Rosaline dyes (gentian or crystal violet) and mordanted with Lugol's iodine, Gram positive bacteria resist decolourisation by acetone spirit or 1% acid alcohol, and retain the Rosaline dye colour (purple/blue). Organisms that are decolourised take up the counter stain, which is coloured, red.

Reagents and materials

- Gentian violet
- Potassium iodide
- Iodine crystals
- Acetone
- Absolute menthol
- Strong carbol fuchsin
- Sodium chloride
- Distilled water
- Conical flask
- Reagent bottles
- Dropper bottles
- Filter paper
- Sterile swabs
- Glass slides
- Cotton wool/gauze
- Grease pencil

Preparation

0.5% Gentian violet: Dissolve 2.5g gentian violet in 500ml-distilled water in a conical flask. Stir using a glass rod until the powder has completely dissolved. Filter into a reagent bottle and label. For daily use, transfer 100ml into dropper bottle and label.

Lugol's iodine: Dissolve 10g potassium iodide in about 100ml-distilled water and add 5g of iodine. Stir using a glass rod until the iodine crystals dissolve. Make up the volume to 500ml with distilled water. Transfer to a brown bottle and label. For daily use, transfer 100ml into a brown dropper bottle.

50% acetone/alcohol: Measure 500ml acetone and pour into a reagent bottle. Measure 475 ml of absolute methanol and 25ml distilled water and add to the acetone and mix. For daily use transfer 100ml to a dropper bottle and label.

Dilute carbol fuchsin: Pour 95ml of distilled water into a dropper bottle and add 5ml of strong carbol fuchsin. Mix and label.

Physiological saline: Dissolve 0.85g of sodium chloride in 100ml distilled water. Transfer to a dropper bottle and label.

Samples required

Collect specimens of urethral or conjunctival discharge from neonates using ready prepared sterile swabs. Urethral and conjunctival discharge may be collected directly onto clean glass slides. Always wear gloves and cover broken skin or wounds with Elastoplasts when handling urogenital specimens.

To collect conjunctival swabs, take a dry sterile swab, pull the lower eyelid down and draw the cotton wool tip of the swab gently across the inside of the lower lid. Alternatively, if the eyelids are very swollen and it is not possible to open the eye, exert gentle pressure on the closed eyelids until a drop of pus or watery discharge appears, and collect the discharge onto the swab. Replace the swab in the test-tube. Label the test-tube using a grease pencil, indicating from which eye the specimen was taken. If both eyes are affected, take separate swabs from each eye, and label the test tubes carefully.

To prepare urethral smears, clean several glass slides with gauze or dry cotton wool label the slides with the patient's laboratory number using a grease pencil. Sample collection is done in a private room within the laboratory. Allow at least 2 hours after urination before collecting a urethral swab. In males, clean around the urethral opening using a swab moistened with sterile saline. Exert slight pressure on the glans penis until a drop of pus or watery discharge appears at the urethral orifice. Collect the discharge on a sterile wire loop or directly onto a slide. Make smears on several slides by spreading the material with the wire loop. If there is no visible discharge from the urethra in males, gently roll a sterile swab in the urethral orifice for 5 seconds. Replace the swab in the test-tube. The clinician collects urethral swabs in females. Label the test tubes with a grease pencil. The clinician using a vaginal speculum collects Endocervical swabs, together with high vaginal swabs.

Method

1. Label each swab with the patient's laboratory number using a grease pencil.
 2. Clean two glass slides with gauze or dry cotton wool. Label the slides with the patient's laboratory number using a grease pencil or an ordinary pencil on the frosted end of the slide. Label one slide "wet preparation" and another slide "Gram stain". Use abbreviations US, ECS or CS for urethral swab, endocervical swab and conjunctival swab, respectively.
 3. Make a smear on the slide labeled "Gram stain" by rolling the swab gently at the centre of the slide. Allow to dry.
 4. Place a drop of physiological saline on the slide labeled "Wet preparation". Roll the swab several times in the saline to emulsify the discharge. Apply a cover slip and immediately examine the preparation for pus cells, yeast cells and presence of *Trichomonas vaginalis*. Record and report the findings. Place the cover slip in the container of 5% Lysol marked "SHARPS". Place the slide in the container of 5% Lysol marked "SLIDES".
- Fix the "gram stain" smear in a thin stream of clean water to remove the excess stain. Cover the smear with Lugol's iodine and leave for 1 minute. Wash the smear in a thin stream of clean water.
6. Decolorise the smear by adding 50% acetone alcohol solutions slowly, one drop at a time, and stop as soon as no more blue colour comes out of the smear.
 7. Counter stain by covering the smear with dilute carbol fuchsin. Leave for 30 seconds. Wash the smear in a thin stream of clean water to remove excess stain. Allow the smear to dry
 8. Place a drop of immersion oil on the smear, and place on the microscope stage. Focus the smear using the X 10 objective and examine systematically using the X 100 objective for pus cells and Gram-negative diplococci. Record and report the findings.
 9. Place used cotton and swabs in the bucket marked "INCINERATION". Keep positive stained slides for reference. Place negative slides in the container of 5% Lysol marked "SLIDES".

Reporting results

Report type of specimen, test(s) carried out and absence or presence of pus cells, epithelial cells, *Trichomonas vaginalis*, yeast cells and *Gram-negative diplococci*.

Example: Urethral smear: Gram stain – numerous pus cells; numerous Gram-negative intracellular diplococci morphologically resembling *N. gonorrhoea*.

A negative result should be reported as follows: e.g. numerous pus cells present, no Gram-negative intracellular diplococci or yeast cells seen in the sample.

Quality control

Gram stain of test specimens is carried out by staining known Gram positive and Gram-negative organisms (e.g. *S. aureus* and *E. coli*) in parallel, to ensure proper staining results.

Further reading:

1. Baker F.J., Silvertown, R.E. and Pallister P.J. (1998). Introduction to Medical Laboratory Technology, 7th Edition, Butterworth-Heinemann, England

2. Barror G, Feltham R K A (1993). *Cowan and Steel's Manual for the Identification of Medical Bacteria*, Third Edition. Cambridge University Press, England.
3. Carter J, Lema O (1994). *Practical Laboratory Manual for Health Centres in Eastern Africa*, AMREF.
Forbes Betty A, Weissfeld Alice S (1998). *Baile's and Scott's Diagnostic Microbiology*, Tenth Edition. Mosby Inc., USA
4. Cheesebrough, Monica (2000). *Medical Laboratory Manual for Tropical Countries, Part 2: Microbiology*, Butterworth & Co Ltd, UK.
5. Munafu C., Tenywa T., Musoke Bukonya M. (1998). *Validation of Syndromic Management of Sexually Transmitted Infection, Volume 1*, AMREF.