



**National Guidelines
on
Prevention, Management and Control
of
Reproductive Tract Infections
including
Sexually Transmitted Infections**

**National AIDS
Control Organisation**

**Maternal Health
Division**

**Ministry of Health & Family Welfare
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Chapterisation Plan

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1. INTRODUCTION

Sexually transmitted infections (STIs) present a huge burden of disease and adversely impacts reproductive health of people. As per recent STI prevalence study (2003), over 5 percent of adult population in the country suffers from STIs and most regions of country show relatively high levels of STIs. It is well known that risk of acquiring HIV infection increases manifold in people with current or prior STI. STIs are linked to HIV transmission as similar sexual behaviour put persons at the risk of infection as well as biological factors whereby STIs directly increase the chances of transmitting and acquiring HIV. HIV prevalence rates among STIs patients also remains high: 22.8 percent in AP, 15.2 % in Maharashtra, 12.2 percent in Manipur and 7.4 percent in Delhi The emergence of HIV and identification of STIs as a co-factor have further lent a sense of urgency for formulating a programmatic response to address this important public health problem.

Besides HIV infections, RTIs including STIs cause suffering for both men and women around the world, but their consequences are far more devastating and widespread among women than among men. These infections often go undiagnosed and untreated, and when left untreated, they lead to complications such as infertility; ectopic pregnancy and cervical cancer. Pelvic inflammatory disease arising from STIs poses a major public health problem and adversely affects the reproductive health of poor and untreated women. Presence of STIs also compromises with contraceptive acceptance and continuation. Similarly some of the RTIs are associated with poor outcome of pregnancy and associated morbidities and mortalities in neonates and infants.

In developing countries both the prevalence and incidence of RTIs/STIs are very high, they rank second cause of healthy life lost in women of reproductive age group after maternal morbidity and mortality. In men, if HIV and other STIs are combined, sexually transmitted infections account for nearly 15 percent of all healthy life lost in the same age group. Not only these infections pose a significant potential drain on public health system resources, these also contribute substantially to the patterns of health care expenditure at the household level.

Programmatic Response to address prevention, management and control of STIs largely falls under the National Reproductive and Child Health (RCH 2) which was launched in year 2005. The programme draws its mandate from the National Population Policy (2000) which makes a strong reference “to include STD/RTI and HIV/AIDS prevention, screening and management in maternal and child health services”. National Rural Health Mission (NRHM) was launched in April,

2005 with an aim to provide accessible, affordable, effective, accountable and reliable health care consistent with the outcomes envisioned in the Millennium Development Goals and general principles laid down in the National and State policies, including the National Population Policy, 2000 and the National Health Policy, 2002. On the operational side, Indian Public Health Standards (IPHS) are being prescribed to achieve and maintain quality of care to the community through public health care delivery system. Clearly there is renewed emphasis on making public health systems effective to deliver quality services to achieve programme goals.

The National AIDS Control Programme 3 includes services for management of STIs as a major programme strategy for prevention of HIV. The Strategy and Implementation Plan (2006-2011) makes a strong reference to expanding access to package of STI management services both in general population groups and for high risk behavior groups. Programme also acknowledges that expanding access to services will entail engaging private sector in provision of services. Several studies indicate preference to patients to access services from private providers. It is also important that treatment facilities in both public and private sector are linked to targeted interventions being supported for high risk behavior groups in the NACP 3.

This document is guided by the National Programme Implementation Plan for RCH2 and NACP 3. The RCH 2 programme is to be implemented within the framework of inter-sectoral convergence as envisaged in implementation framework of NRHM. Linkages are to be established between the RCH2 strategy for prevention and management of RTIs including STIs and prevention strategy as articulated in National AIDS Control Programme (NACP3). The inputs required for framing these guidelines are drawn from many sources which also include a multi centric countrywide Rapid Assessment Survey in six zones of the country to assess their management practices (operational, clinical, laboratory) on RTI/STIs at different levels (District, CHC, PHC and Subcentre) of the health system, review of available guidelines, technical discussions with STI care practitioners, and programme managers in public systems as well as from NGO and private sector.

The guidelines presented in this document are designed for qualified Doctors to enable them to quickly and confidently diagnose and treat the majority of the caseload of RTIs/STIs. Some part of these guidelines could be extracted and adopted for nursing personnel as per requirements for service delivery in different settings. The main purpose of this document is to present comprehensive RTI/STI case management guidelines including detailed history taking and clinical examination supported by a number of photographs of

RTIs/STIs in men and women to provide a visual impression; user friendly management flowcharts including partner management and management of pregnant women; effective drug regimens, single oral dosages wherever possible, with special instructions incorporated in the flowcharts itself. Document also provide guidance to service providers to address RTIs/STIs among special population groups such as adolescents, sex workers and MSMs; and simple laboratory tests which can be done at facilities level with relevant photographs and details of procedures. Additionally document also provides information on organisation of ICTC services.

These guidelines cater to information needs of the programme managers and service providers in RCH 2 programme and also in NACP 3. The RCH service providers will find information useful in organizing effective case management services through public health system especially through network of 24 hour PHCs and CHCs. Similarly programme managers specially SACS officers entrusted with the responsibility of up scaling TIs for sex workers and TI managers will find useful information for provision of quality STI management services.

Recognizing the fact that a significantly high proportion of these patients are being treated through private sectors, private providers/ NGO service providers are highly encouraged to use these national protocols.

3. OBJECTIVES OF RTI/STI CASE MANAGEMENT SERVICES:

Provision of quality RTI/STI case management services through a network of public health care delivery institutions, private sector providers, franchisee clinics and in TI settings will result in achieving following objectives:

1. Enhance access to services; especially for women and adolescents who are constrained to seek services and face several access related barriers.
2. Standardized treatment protocols will improve prescription practices by reducing poly pharmacy, irrational drug combinations.
3. Focus on prevention, with special reference to partner management, condom use, follow-ups and management of side effects
4. Emphasis on treatment compliance and better treatment outcomes
5. Behaviour Change Communication leading to improved knowledge on causation, transmission and prevention of RTIs/STIs
6. Ensure that providers offer counseling and testing services for HIV/AIDS and establish linkages with ART systems with respect to positives
7. Screen Asymptomatic especially contraceptives, ANC clients for STIs
8. Ensure service provision for groups practicing high risk behaviors such as sex workers, MSMs and IDUs

2. CLINICAL SPECTRUM OF RTIs/STIs

Clients suspected of having RTIs/STIs usually present with one or more of the following complaints. These clinical entities may present as:

- (i) Vaginal or urethral discharge;
- (ii) Vesicular and/or non-vesicular genital ulcers;
- (iii) Inguinal bubo;
- (iv) Lower abdominal and/or scrotal pain;
- (v) Genital skin conditions; and

In following table an attempt has been made to depict presenting symptoms, clinical condition, causative organism and signs and symptoms.

**Table
Causative organisms and presenting symptoms & signs of specific RTIs/STIs**

RTI	Causative Organism	Symptoms/Signs
<i>Presenting symptoms: Vaginal/Urethral Discharge and or burning micturition</i>		
Gonorrhoea	Neisseria gonorrhoea	<p>Women</p> <ul style="list-style-type: none"> Purulent (containing mucopus) vaginal discharge Pain or burning on passing urine (dysuria) Inflamed (red and tender) urethra <p>Men</p> <ul style="list-style-type: none"> Pain or burning on passing urine (dysuria) Purulent (containing mucopus) urethral discharge (drip). Infection of the epididymis (coiled tube leading from the testis to the spermatic cord) Urethral abscess or narrowing (stricture)
Trichomoniasis	Trichomonas vaginalis	<ul style="list-style-type: none"> May produce few symptoms in either sex Women often will have a frothy (bubbly), foul-smelling, greenish vaginal discharge Men may have a urethral discharge

RTI	Causative Organism	Symptoms/Signs
Chlamydia	Chlamydia trachomatis	<p>Women</p> <ul style="list-style-type: none"> • Produces few symptoms, even with upper genital tract infection (silent PID) • Purulent cervical discharge, frequently a “beefy” red cervix which is friable (bleeds easily) <p>Men</p> <ul style="list-style-type: none"> • Most frequent cause of non-gonococcal urethritis (NGU)
Bacterial vaginosis	Overgrowth of anaerobes (e.g., Gardnerella vaginalis)	<ul style="list-style-type: none"> • Not necessarily sexually transmitted • Vaginal discharge with fishy odor, grayish in color
Candidiasis	Candida albicans	<p>Women</p> <ul style="list-style-type: none"> • Curd-like vaginal discharge, whitish in color • Moderate to intense vaginal or vulval itching (pruritus) <p>Men</p> <ul style="list-style-type: none"> • Itchy penile irritation (balanitis)
Presenting symptoms: Genital Ulcers and Bubo		
Chancroid (Soft chancre)	Haemophilus ducreyi	<ul style="list-style-type: none"> • Painful, “dirty” ulcers located anywhere on the external genitalia. • Development of painful enlarged lymph nodes (bubo) in the groin.
Syphilis	Treponema pallidum	<ul style="list-style-type: none"> • Occurs in 3 forms: primary and secondary and late <p>Primary syphilis</p> <ul style="list-style-type: none"> • Initially, painless ulcer (chancre): in women on the external genitalia (labia), in men on the penis; in both sexes oral and anal ulcers and enlarged rubbery lymph nodes <p>Secondary (disseminated) syphilis</p> <ul style="list-style-type: none"> • Several months’ later non-itchy body rash, headaches, muscle aches, weight loss, low-grade fever. The rashes may disappear spontaneously <p>Late syphilis</p> <ul style="list-style-type: none"> • Develops in about 25% of untreated cases and is often fatal due to involvement of the heart, great blood vessels and brain

RTI	Causative Organism	Symptoms/Signs
Lymphogranuloma venereum (LGV)	Chlamydia trachomatis (serovars L1, L2, L3)	<ul style="list-style-type: none"> • Small, usually painless papules (like pimples) on the penis or vulva, followed by • Buboec in the groin which ultimately breaks down forming many fistulae (draining openings) • If untreated, the lymphatic system may become blocked, producing elephantiasis (swelling of the genitals or extremities)
Granuloma inguinale (Donovanosis)	Calymmatobacterium granulomatis	<ul style="list-style-type: none"> • An uncommon cause of ulcerative genital tract infection • Typically, the infected person develops lumps under the skin which break down to form "beefy" red, painless ulcers
Genital herpes	Herpes simplex virus	<ul style="list-style-type: none"> • Multiple painful vesicles later forming shallow ulcers which clear in 2 to 4 weeks (first attack) and may be accompanied by watery vaginal discharge in women • Recurrent (multiple bouts) more than 50% of the time.
Presenting symptoms: Lower Abdominal Pain		
Pelvic Inflammatory Disease (PID)	<ul style="list-style-type: none"> • Neisseria gonorrhoea • Chlamydia trachomatis • Anaerobes 	<ul style="list-style-type: none"> • Lower abdominal pain, fever, vaginal discharge, menstrual irregularities like heavy irregular vaginal bleeding, dysmenorrhoea, dyspareunia (pain during sexual intercourse), dysuria, tenesmus, low backache • Temperature > 39°C • Vaginal/cervical discharge, congestion or ulcers • Lower abdominal tenderness or guarding • Uterine/adnexal tenderness, cervical movement tenderness, presence of a pelvic mass
Presenting symptoms: Acute scrotal pain and/or swollen scrotum		
Epididymitis/Orchitis	<ul style="list-style-type: none"> • Neisseria gonorrhoea • Chlamydia trachomatis 	<ul style="list-style-type: none"> • Acute: severe pain in one or both testes, sudden swelling of the testes.
Presenting symptoms: Genital Skin Conditions		
Genital warts (Condyloma acuminata)	Human papilloma virus	<ul style="list-style-type: none"> • Single or multiple soft, painless, "cauliflower" growth which appear around the anus, vulvo-vaginal area, penis, urethra and perineum
Moluscum contagiosum	Pox virus	<ul style="list-style-type: none"> • Multiple, smooth, glistening, globular papules of varying size from a pinhead to a split pea can appear anywhere on the body. Sexually transmitted lesions on or around genitals can be seen. • Not painful except when secondary infection sets in.

RTI	Causative Organism	Symptoms/Signs
Pediculosis pubis	Pthirus pubis	<ul style="list-style-type: none"> • There may be small red papules with a tiny central clot caused by lice irritation. • General or local urticaria with skin thickening may or may not be present.
Scabies	Sarcoptes scabiei	<ul style="list-style-type: none"> • Severe pruritis (itching) is experienced by the client which becomes worse at night. • The burrow is the diagnostic sign. It can be seen as a slightly elevated grayish dotted line in the skin, best seen in the soft part of the skin.

3. CASE MANAGEMENT

The most important elements of RTI/STI case management are accurate diagnosis and effective treatment. This needs time and skill in taking a detailed sexual history for both client and his/her sexual contacts and in carrying out a comprehensive physical examination and minimal investigations in resource poor settings. In some settings where even minimal lab setup and facilities for clinical examinations are not available syndromic management is recommended as per the protocols in following pages. To prevent the complications and spread, treatment must be effective. This means selecting the correct drugs for the disease, carefully monitoring its administration and carrying out regular follow up. The sexual partners must be treated so as to prevent recurrence. Clients should also receive counseling services with special reference to risk reduction, safer sex behaviour and access to testing.

The components of case management include:

- History taking
- Clinical examination
- Correct diagnosis
- Early and effective treatment
- Counselling : Risk reduction and voluntary HIV testing
- Provision of condoms
- Partner management
- Follow-up as appropriate.

Thus, quality case management consists not only of antimicrobial therapy to obtain cure and reduce infectivity, but also focus on prevention of reoccurrence and partner management.

History taking

- History must be taken in a language, which the client understands well. (Some examples of framed questions are given in Box 1). Clients are often reluctant to talk about these conditions due to shyness or fear of stigmatization. Hence health care providers should ensure privacy, confidentiality, be sympathetic, understanding, and non-judgmental.
- Ensure privacy by having a separate room for history taking and examination, which is not stigmatized with a nameplate for STIs. There should be auditory as well as visual privacy for history taking as well as examination.

- Start the conversation by welcoming your client, taking them into confidence and encouraging him/her to talk about their complaints. If a couple comes together, each of them needs to be interviewed and examined separately.
- Often, because the client feels uncomfortable talking about RTIs/STIs, individuals may come to the clinic with other non-specific complaints or requesting a check-up, assuming that the health care provider will notice anything abnormal that needs treatment. Therefore, health care workers should maintain a high index of suspicion about RTIs/STIs.
- Clients seeking care for antenatal care and family planning services should be viewed as opportunities to provide general information about RTIs/STIs and should be asked about RTI/STI symptoms and contraception.
- The health care personnel should be aware of the commonly used RTI/STI related terminology as well as those used for high-risk behavior. These terms may vary in different geographical settings .A list of such terms is provided as given in the Appendix 13.2.

Clinical examination

Pre-requisites for clinical examination

- Clients should be examined in the same conditions of privacy as those in which history was taken.
- It is advisable to have an assistant of the same sex as the client present, during examination of clients of sex opposite to the doctors.
- Clients should be told about the examination with the help of diagrams and charts.
- The examination should be done in a well-lit room while providing adequate comfort and privacy. Before you start, keep the examination table with proper illumination ready as well as sterilized speculums (for examination of female clients), collection swabs and labeled slides for smears.
- As far as possible, complete body examination of the client should be carried out so that none of the skin lesions or lymph nodes is missed.

Box

Sample questions on history taking

Framing Statement

"In order to provide the best care for you today and to understand your risk for certain infections, it is necessary for us to talk about your sexual behavior."

Screening Questions

- Have you recently developed any of these symptoms?

STI (Genital infections) Symptoms Checklist

For Men

- i. Discharge or pus (drip) from the penis
- ii. Urinary burning or frequency
- iii. Genital sores (ulcers) or rash or itching
- iv. Scrotal swelling
- v. Swelling in the groin
- vi. Infertility

For Women

- i. Abnormal vaginal discharge (increased amount, abnormal odor, abnormal color)
- ii. Genital sores (ulcers), rash or itching
- iii. Urinary burning or frequency
- iv. Pain in lower abdomen
- v. Dysmenorrhea, menorrhagia, irregular menstrual cycles?
- vi. Infertility

High risk sexual behavior

- For all adolescents: Have you begun having any kind of sex yet?
- If sexually active do you use condom consistently?
- Do you have any reason to think you might have a sexually transmitted disease? If so, what reason?
- Have you had sex with any man, woman, with a gay or a bisexual?
- Have you or your partner had sex with more than one partner?
- Has your sex partner(s) had any genital infections? If so, which ones?
- Do you indulge in high risk sexual activity like anal sex
- Do you practice correct and consistent condom usage while having sex? If yes, whether every time or sometimes?
- Sex workers: Frequency of partner change: use of condoms with regular partners and also with clients

STI History

- In the past have you ever had any genital infections, which could have been sexually transmitted? If so, can you describe?

STI treatment history

- Have you been treated in the past for any genital symptoms? By whom? (qualified or unqualified person)
- Did your partner receive treatment for the same at that time?
- Has your partner been treated in the past for any genital symptoms? By whom? (qualified or unqualified person)

Injection Drug Use

- Have you had substance abuse? (If yes, have you ever shared needles or injection equipment?)
- Have you ever had sex with anyone who had ever indulged in any form of substance abuse?

Menstrual and obstetric history in women and contraceptive history in both sexes should be asked

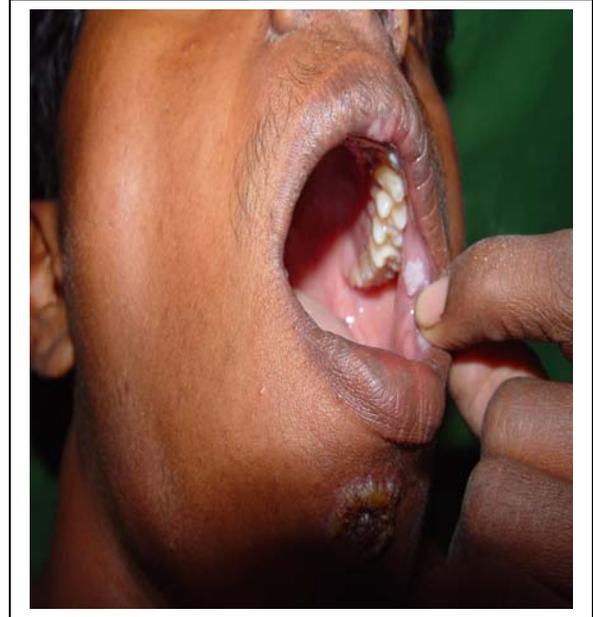
General Examination

- All examinations should begin with a general assessment, including vital signs and inspection of the skin and mucous patches, to detect signs of systemic disease.

Fig 6a Lesions of secondary syphilis



Lesions of secondary syphilis



Mucous patches in secondary syphilis

Clinical examination of female clients

While examining a female client, a male doctor should ensure that a female attendant is present. Genital examination in females must be performed with client in lithotomy position.

Box

Signs to look for during external genital examination of a female client

a) Inspection

Staining of underclothes: Vaginal and urethral discharge, exudative ulcers

Inguinal region

- Swelling, ulcer, lesions of fungal infections
- Lymph nodes: look for enlargement, number, location (horizontal or vertical group), single or multiple, scars and puckering, signs of inflammation on the surface and surrounding region
- Abrasions due to scratching and lesions on inner aspect of thighs

Pubic area

- Matting of hairs, pediculosis, folliculitis, or other skin lesions

Labia majora and minora

- Separate the labia majora with both hands and look for erythema, edema, esthiomene formation (lobulated fibrosed masses due to chronic lymphedema), fissuring, ulcers, warts or other skin lesions

Ulcers

- Location, number (single, multiple), superficial (erosions) or deep, edge (undermined/punched out), margins (regular/irregular) and floor (presence of exudates, slough/granulation tissue)

Bartholin glands

- Enlargement, ductal opening, discharge

Introitus

- Discharge – colour, odour, profuse or scanty, curdy or thin, back drop of redness and inflammation

Urethral meatus

- Discharge (pressing under the urethra with one finger may show drops of discharge), inflammation

Perianal examination

- Separate the buttocks with two hands for better visualization. Look for ulcer, macerated papules of condyloma lata, warts, discharge, patulous anus, haemorrhoids, fissures, fistula

b) Palpation

Inguinal region

- Lymph nodes: tenderness, increased warmth, superficial or deep, discrete or matted, free mobility or fixed to deeper structures, consistency (firm or soft) and fluctuant.
- Rule out hernia

Palpation of ulcer at any site

- Tenderness, induration of the floor and edges, bleeding on maneuvering

Many of the signs of various RTIs/STIs are shown as pictures in fig 6b

Fig: Signs to look for during external genital examination of a female client



Vesicles of Genital Herpes



Abrasions of Intertrigo



Extensive mucopurulent cervicitis infection



Pus pouring out of endocervix in Chlamydia trachomatis



Growth of genital warts



Chancre of Syphilis

Box

Speculum examination in women

How to do speculum examination in women

- Ask the woman to pass urine.
- Wash your hands well with clean water and soap.
- Ask her to loosen her clothing. Use a sheet or clothing to cover her.
- Have her lie on her back, with her heels close to her bottom and her knees up.
- Put clean gloves on both hands.
- Look at the outside genitals - using the gloved hand to gently look for lumps, swelling, unusual discharge, sores, tears and scars around the genitals and in between the skin folds of the vulva.

Speculum examination

- Be sure the speculum has been properly disinfected before you use it. Wet the speculum with clean water before inserting it.
- Put the first finger of your gloved hand in the woman's vagina. As you put your finger in, push gently downward on the muscle surrounding the vagina (work slowly, waiting for the woman to relax her muscles). Use this finger to find the cervix which feels like the tip of the nose.
- With the other hand, hold the speculum blades together between the pointing finger and the middle finger. Turn the blades sideways and slip them into the vagina. (be careful not to press on the urethra or clitoris because these area are very sensitive). When the speculum is halfway in, turn it so the handle is down. Remove your gloved finger.
- Gently open the blades a little and look for the cervix. Move the speculum slowly and gently until you can see the cervix between the blades. Tighten the screw on the speculum so it will stay in place.
- Check the cervix which should look pink and round and smooth. Notice if the opening is open or closed, and whether there is any discharge or bleeding. If you are examining the woman because she is bleeding from the vagina after birth, abortion or miscarriage, look for tissue coming from the opening of the cervix.
- Look for signs of cervical infection by checking for yellowish discharge, redness with swelling, or easy bleeding when the cervix is touched with a swab. If the woman has been leaking urine or stools gently turn the speculum to look at the walls of the vagina. Bring the blades closer together to do this.
- To remove the speculum, gently pull it toward you until the blades are clear of the cervix. Then bring the blades together and gently pull back. Be sure to disinfect your speculum again.

Box
Signs to look for during speculum examination

- Vaginal discharge and redness of the vaginal walls are common signs of vaginitis. Note the color, smell and characteristics of any vaginal discharge. When the discharge is white and curd-like, candidiasis is likely.
- Foreign body, IUD thread.
- Ulcers, warts, sores or blisters.
- Redness of cervical and vaginal epithelium
- Look for cervical erosions. If the cervix bleeds easily when touched or the discharge appears mucopurulent with discoloration, cervical infection is likely. A strawberry cervix may be due to trichomoniasis. A uniform bluish discoloration of the cervix may indicate pregnancy, which needs to be kept in mind.
- When examining a woman after childbirth, induced abortion or miscarriage, look for bleeding from the vagina or tissues fragments and check whether the cervix is normal.
- Tumors or other abnormal-looking tissue on the cervix.
- PAP smear can be obtained during speculum examination

Box

Bimanual pelvic examination

How to do a bimanual pelvic examination

- Put the pointing finger of your gloved hand in the woman's vagina. As you put your finger in, push gently downward on the muscles surrounding the vagina. When the woman's body relaxes, put the middle finger in too. Turn the palm of your hand up.
- Feel the opening of her womb (cervix) to see if it is firm and round. Then put one finger on either side of the cervix and move the cervix gently. It should move easily without causing pain. If it does cause pain, she may have infection of the womb, tubes or ovaries. If her cervix feels soft, she may be pregnant.
- Feel the womb by gently pushing on her lower abdomen with your outside hand. This moves the inside parts (womb, tubes and ovaries) closer to your inside hand. The womb may be tipped forward or backward. If you do not feel it in front of the cervix, gently lift the cervix and feel around it for the body of the womb. If you feel it under the cervix, it is pointed back.
- When you find the womb, feel for its size and shape. Do this by moving your inside fingers to the sides of the cervix, and then 'walk' your outside fingers around the womb. It should feel firm, smooth and smaller than a lemon. If the womb:
 - Feels soft and large, she is probably pregnant.
 - Feels lumpy and hard, she may have a fibroid or other growth.
 - Hurts when you touch it, she may have an infection inside.
 - Does not move freely, she could have scars from an old infection.
- Feel her tubes and ovaries. If these are normal, they will be hard to feel. But if you feel any lumps that are bigger than an almond or that cause severe pain, she could have an infection or other emergency. If she has a painful lump, and her monthly bleeding is late, she could be pregnant in the tube. She needs medical help right away.
- Move your finger and feel along with inside of the vagina. If she has a problem with leaking urine or stool, check for a tear. Make sure there are no unusual lumps or sores.
- Have the woman cough or push down as if she were passing stool. Watch to see if something bulges out of the vagina. If it does, she could have a fallen womb or fallen bladder (prolapse).
- When you are finished, clean and disinfect your glove. Wash your hands well with soap and water.

Box
Signs to look for during a bimanual examination

- Soft enlarged uterus with missed periods suggestive of pregnant uterus
- Adnexal mass with missed periods suggestive of ectopic pregnancy
- Cervical movement tenderness and or adnexal tenderness suggestive of PID
- Adnexal mass with fever suggestive of pelvic abscess
- Any other hard pelvic mass like fibroid or malignancy

Digital rectal examination: Performed if symptoms suggestive of prostatic disease. Should not be carried out if the client has painful perianal diseases such as herpetic ulcers, fissures, haemorrhoids.

Proctoscopic examination: Indicated if history of unprotected anal intercourse, or complain of rectal discharge.

Note: If a woman has missed periods (menses), pregnancy should be ruled out by doing a urine pregnancy test.

Box

Signs to look for when examining men

a) Inspection

Staining of underclothes: due to urethral discharge, subprepuccial discharge or from exudative ulcers.

Inguinal region: swelling, ulcer, candidial intertrigo, tinea, enlarged lymph nodes: look for number, location (horizontal or vertical group), single or multiple pointings, scars and puckering, signs of inflammation on the surface and surrounding region

Pubic area: matting of hairs, pediculosis, folliculitis, or other skin lesions.

Scrotum: erythema, skin lesions (condyloma lata), asymmetry, scrotal swelling.

Penis: Size, oedema, deformity, phimosis, paraphimosis, autoamputation of genitals, foreign bodies, old scars, circumcision, retraction of prepuce.

Inspection of ulcers: Number (single, multiple), superficial (erosions) or deep, edge (undermine/punched out), margins (regular/irregular) and floor (presence of exudates, slough/granulation tissue).

Meatal examination: Erythema, discharge: thick, creamy or mucopurulent, wart, ulcer. If no discharge then milk the penis (urethra) and look for discharge at the meatus.

Prepuccial skin examination: Erosions, ulcer, warts, posthitis or other skin lesions.

Coronal sulcus: Ulcer, warts, pearly penile papules.

Glans penis examination: Erosions, ulcers, warts, balanitis (candidial, trichomonal).

Shaft of penis: papules, nodules, ulcers or other skin lesions, fibrosis.

Perianal examination: Separate the buttocks with two hands for better visualization. Look for ulcer, macerated papules of condyloma lata, warts, discharge, patulous anus, haemorrhoids, fissures, fistula.

b) Palpation

Inguinal region: Lymphnodes: tender or not, increased warmth, superficial or deep, discrete or matted, free mobility or fixed to deeper structures, consistency: firm or soft and fluctuant. Rule out hernia.

Palpation of spermatic cords: Tenderness, asymmetry, and thickening, varicoceles.

Palpation of scrotum: Asymmetry, tenderness, consistency of testes and epididymis, transillumination for hydrocoele. Rule out hernia.

Palpation of ulcer at any site: Tenderness, induration of the floor and edges, bleeding on maneuvering. **c) Digital rectal examination**

Performed if symptoms suggestive of prostatic disease. Should not be carried out if the client has painful perianal disease such as herpetic ulcers, fissures, or haemorrhoids.

d) Proctoscopic examination

Indicated if unprotected anal intercourse, rectal discharge.

Fig
Signs to look for when examining men



Urethral discharge in gonorrhea



Herpes ulcers



**Multiple grouped erosions
over shaft of penis**



Chancre of glans



Chancre of coronal sulcus



Ulcer of Donovanosis



Condyloma lata



Venereal warts



Candidial balanoposthitis



Chancroidal bubo: note the single pointing



LGV

Partner management

Partner management is an activity in which the partners of those identified as having RTI/STI are located, informed of their potential risk of infection, and offered treatment and counseling services.

Timely partner management serves following purpose:

- Prevention of re-infection
- Prevention of transmission from infected partners and
- Help in detection of asymptomatic individuals, who do not seek treatment.

Critical issues on partner management

- Confidentiality: Partners should be assured of confidentiality. Many times partners do not seek services, as they perceive confidentiality as a serious problem. Respecting dignity of client and ensuring confidentiality will promote partner management.
- Voluntary reporting: Providers must not impose any pre-conditions giving treatment to the index client. Providers may need to counsel client several times to emphasize the importance of client initiated referral of the partners.
- Availability of services: RTI/STI diagnostic and treatment services should be available to all partners. This may mean finding ways to avoid long waiting times. This is important because many asymptomatic partners are reluctant to wait or pay for services when they feel healthy.

Approaches for partner management

There are two approaches to partner management:

i. Referral by index client

In this approach, index client informs the partner/s of possible infection. This appears to be a feasible approach, because it does not involve extra personnel, is inexpensive and does not require any identification of partners. A partner notification card with relevant diagnostic code should be given to each index client, where partner management is indicated. This approach may also include use of client initiated therapy for all contacts.

ii. Referral by providers

In this approach service provider contacts client's partners through issuing appropriate partner notification card. The information provided by client is used confidentially to trace and contact partners directly. This approach needs extra staff and is expensive.

Coupon for a free examination
Date: Please attend following centers along with the card
Stamp of the Facility
Timings: Diagnostic Code:

Sample Partner reporting card

Note: A two-step strategy can be used where clients are first asked to contact partners themselves. If no response till one or two weeks, clinic or health department staff can attempt to trace the contact for treatment.

General principles for partner management

- In general, partners should be treated for the same STI as the index client, whether or not they have symptoms or signs of infection.
- Health care providers should be as sure as possible about the presence of an STI before informing and treating the partner, and should remember that other explanations are possible for most RTI symptoms like vaginal discharge.
- Special care is required in notifying partners of women with lower abdominal pain who are being treated for possible pelvic inflammatory disease. Because of the serious potential complications of PID (infertility, ectopic pregnancy), partners should be treated to prevent possible re-infection. It should be recognized, however, that the diagnosis of PID on clinical grounds is inaccurate, and the couple should be adequately counseled about this uncertainty. It is usually better to offer treatment as a

precaution to preserve future fertility than to mislabel someone as having an STI when they may not have one.

Follow-up visits

Follow up visits should be advised

- To see reports of tests done for HIV, Syphilis and Hepatitis B.
- If symptoms persist, advise clients to come back for follow up after 7 days. In case of PID, follow up should be done after 2 to 3 days.

Management of treatment failure and re-infection

When clients with an RTI/STI do not respond to treatment, it is usually because of either treatment failure or re-infection. Ask the following questions to ascertain the cause:

To probe for treatment failure

- Did you take all your medicines as directed?
- Did you share your medicine with anyone, or stop taking medicines after feeling some improvement?
- Was treatment based on the national treatment guidelines? Also consider the possibility of drug resistance if cases of treatment failure are showing an increasing trend.

To probe for re-infection

- Did your partner(s) come for treatment?
- Did you use condoms or abstain from sex after starting treatment?

Note: *Recurrence is also common with endogenous vaginal infections, especially when underlying reasons (douching, vaginal drying agents, diabetes mellitus hormonal contraceptives) are not addressed.*

Box : Management of treatment failure and re-infection

For treatment failure

All cases of treatment failures should be referred to higher health facility.

For re-infection

- Consider re-treatment with same antibiotics.
- Refer to higher health facility if symptoms persist.

Screening for Asymptomatics:

It is well known that most RTIs/STIs are asymptomatic, especially amongst the women. The case finding is a process of opportunistic screening for an infection at the time when an individual presents to a health facility, regardless of presence of symptoms. Case finding opportunities are most commonly seen while providing services for contraception. Providers should use opportunities for potential contraceptive clients to screen for RTIs/STIs. The National Guidelines for IUD, Oral Pills, National Standards for Sterilization Services provide detailed guidelines regarding screening of RTIs/STIs.

Similar opportunities exist in pregnancy care settings. Most common screening programmes worldwide are those for detecting syphilis in pregnant women. Untreated syphilis in pregnant female is associated with number of adverse outcomes such as pregnancy loss, stillbirths and congenital syphilis. Providers are recommended to follow following guidelines while providing services to pregnant women:

1. Guidelines for Pregnancy Care and Management of Common Obstetric Complications by Medical Officers, 2005.
2. Guidelines for Ante-Natal Care and Skilled Attendance at Birth by ANMs and LHVs, 2006.

4. DIAGNOSIS AND MANAGEMENT OF RTI/STIS

A simplified tool (flowchart) will help to guide health workers in the management of RTIs/STIs. The flowcharts describe the clinical syndrome, specific RTIs/STIs under the syndrome and the causative organisms of the RTI/STI syndrome. Differential diagnosis of the conditions is also mentioned wherever appropriate. The approach to the patient with specific points to be considered during history taking and examination is highlighted. If facilities and skills are available, the laboratory tests which need to be done are also mentioned. The treatment protocols to be followed at the primary health care system with appropriate referrals where indicated is also given. Special emphasis is given on syndrome specific partner management and management issues specific to pregnancy.

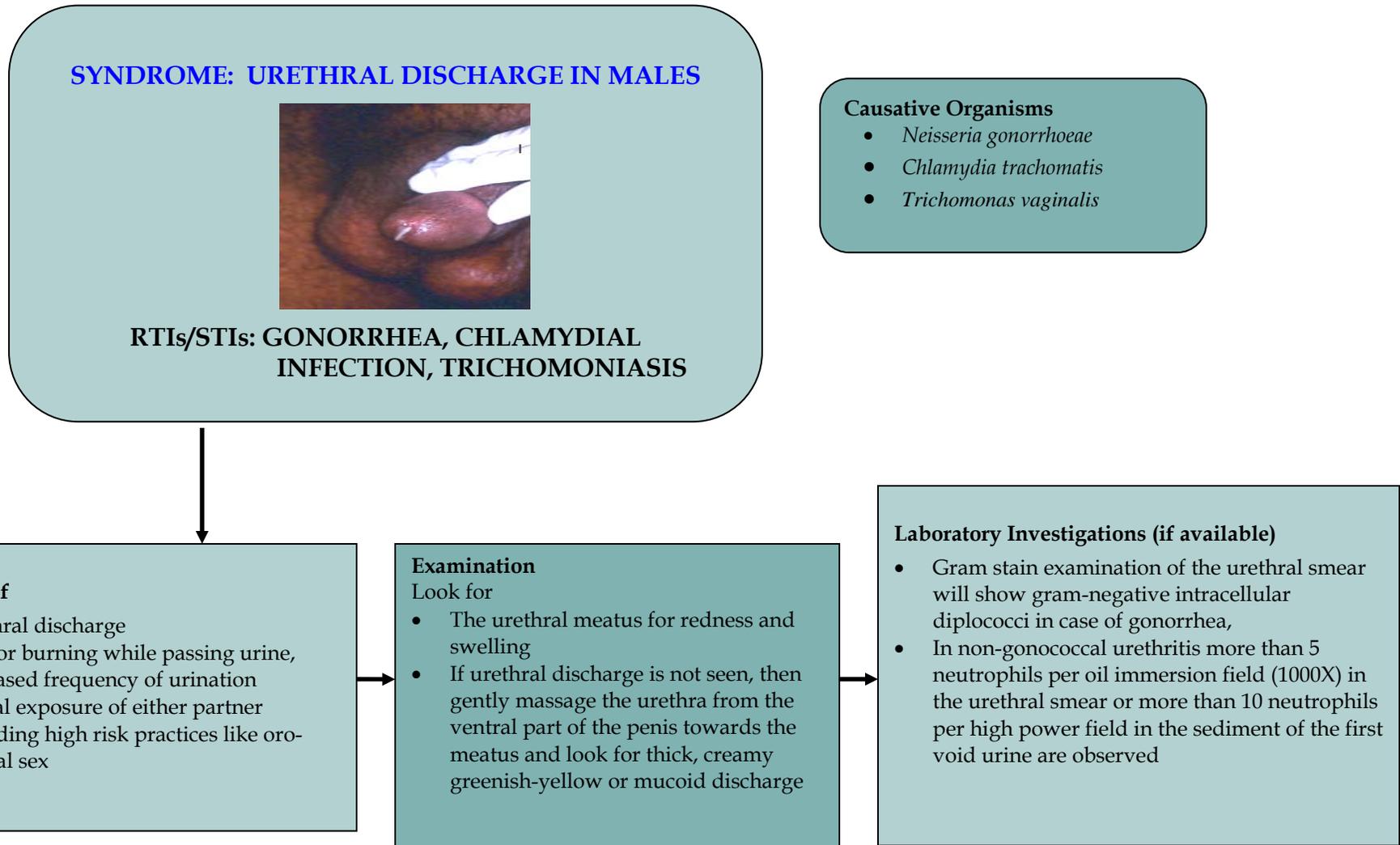
Important considerations for management of all clients of RTIs/STIs

- Educate and counsel client and sex partner(s) regarding RTIs/STIs, genital cancers, safer sex practices and importance of taking complete treatment
- Treat partner(s) where ever indicated
- Advise sexual abstinence during the course of treatment
- Provide condoms, educate about correct and consistent use
- Refer for voluntary counseling and testing for HIV, Syphilis and Hepatitis B
- Consider immunization against Hepatitis B
- Schedule return visit after 7 days to ensure treatment compliance as well as to see reports of tests done.
- If symptoms persist, assess whether it is due to treatment failure or re-infection and advise prompt referral.

FLOWCHARTS

Flowcharts for management of RTI/STI syndromes

Flowchart : Management of Urethral Discharge/burning micturition in Males



Treatment

As dual infection is common, the treatment for urethral discharge should adequately cover therapy for both, gonorrhoea and chlamydial infections.

Recommended regimen for uncomplicated gonorrhoea + chlamydia

Uncomplicated infections indicate that the disease is limited to the anogenital region (anterior urethritis and proctitis) and not complicated.

- Tab. Cefixim 400 mg orally orally, single dose under supervision Plus
Tab Azithromycin 1 gram orally
- Advise the client to return after 7 days of start of therapy

When symptoms persist or recur after adequate treatment for gonorrhoea and chlamydia in the index client and partner(s), they should be treated for *T. vaginalis*.

If discharge or only dysuria persists after 7 days

- Tab. Secnidazole 2gm orally, single dose (to treat for *T. vaginalis*)

If the symptoms still persists

- Refer to higher centre as early as possible

If individuals are allergic to Azithromycin, give Erythromycin 500 mg four times a day for 7 days

Syndrome specific guidelines for partner management

- Treat all recent partners
- Treat female partners (for gonorrhoea and chlamydia) on same lines after ruling out pregnancy and history of allergies
- Advise sexual abstinence during the course of treatment
- Provide condoms, educate about correct and consistent use
- Refer for voluntary counseling and testing for HIV, Syphilis and Hepatitis B
- Schedule return visit after 7 days

Follow up

After seven days

- To see reports of tests done for HIV, syphilis and Hepatitis B
- If symptoms persist, to assess whether it is due to treatment failure or re-infection
- For prompt referral if required

Management of pregnant partner

Pregnant partners of male clients with urethral discharge should be examined by doing a per speculum as well as per vaginal examination and should be treated for gonococcal as well as chlamydial infections.

- Cephalosporins to cover gonococcal infection are safe and effective in pregnancy
 - Tab. Cefixime 400mg orally, single dose or
 - Ceftriaxone 125mg by intramuscular injection
 - +
 - Tab. Erythromycin 500mg orally four times a day for seven days or
 - Cap Amoxicillin 500mg orally, three times a day for seven days to cover chlamydial infection
- Quinolones (like ofloxacin, ciprofloxacin), doxycycline are contraindicated in pregnant women.

Flowchart: Management of Scrotal Swelling

SYNDROME: SCROTAL SWELLING



RTIs/STIs : GONORRHEA, CHLAMYDIAL

Causative Organisms

- *Neisseria gonorrhoeae*
- *Chlamydia trachomatis*

History of

- Swelling and pain in scrotal region
- Pain or burning while passing urine
- Systemic symptoms like malaise, fever
- Sexual exposure including high risk practices like oro-genital sex

Examination

Look for

- Scrotal swelling
- Tenderness of the epididymis and vas deferens
- Redness and edema of the overlying skin
- Associated urethral discharge/genital ulcer/inguinal lymph nodes and if present refer to the respective flowchart
- A transillumination test to rule out hydrocoele should be done.

Laboratory Investigations

(If available)

- Gram stain examination of the urethral smear will show gram-negative intracellular diplococci in case of complicated gonococcal infection
- In non-gonococcal urethritis more than 5 neutrophils per oil immersion field in the urethral smear or more than 10 neutrophils per high power field in the sediment of the first void urine are observed

Differential diagnosis (non RTIs/STIs)

Infections causing scrotal swelling:

Tuberculosis, filariasis, coliforms, pseudomonas, mumps virus infection.

Non infectious causes:

Trauma, Hernia, Hydrocoele, Testicular torsion, and Testicular tumors

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graph TD; A[ ] --> B[Treatment]; B --> C[Syndrome specific guidelines for partner management]; B --> D[Management protocol in case the partner is pregnant];
```

Treatment

- Treat for both gonococcal and chlamydial infections
Tab Cefixim 400 mg orally BD for 7 days Plus
Cap. Doxycycline 100mg orally, twice daily for 14 days and refer to higher centre as early as possible since complicated gonococcal infection needs parental and longer duration of treatment
- Supportive therapy to reduce pain (bed rest, scrotal elevation with T-bandage and analgesics)

Note

If quick and effective therapy is not given, damage and scarring of testicular tissues may result causing sub fertility

Syndrome specific guidelines for partner management

Partner needs to be treated depending on the clinical findings

Management protocol in case the partner is pregnant

- Depending on the clinical findings in the pregnant partner (whether vaginal discharge or endocervical discharge or PID is present) the drug regimens should be used.
- Doxycycline is contraindicated in pregnancy
- Erythromycin base/ Amoxicillin can be used in pregnancy.

Flowchart : Management of inguinal bubo

SYNDROME: INGUINAL BUBO



RTIs/STIs: LGV, CHANCROID

Causative Organisms

- *Chlamydia trachomatis* serovars L1, L2, L3, causative agent of lympho granuloma venerum (LGV)
- *Haemophilus ducreyi* causative agent of chancroid

History

- Swelling in inguinal region which may be painful
- Preceding history of genital ulcer or discharge
- Sexual exposure of either partner including high risk practices like oro-genital sex etc
- Systemic symptoms like malaise, fever

Examination

Look for

- Localized enlargement of lymph nodes in groin which may be tender and fluctuant
- Inflammation of skin over the swelling
- Presence of multiple sinuses
- Edema of genitals and lower limbs
- Presence of genital ulcer or urethral discharge and if present refer to respective flowchart

Laboratory Investigations

Diagnosis is on clinical grounds

Differential diagnosis

- Mycobacterium tuberculosis, filariasis
- Any acute infection of skin of pubic area, genitals, buttocks, anus and lower limbs can also cause inguinal swelling

If malignancy or tuberculosis is suspected refer to higher centre

Treatment

Start Cap. Doxycycline 100mg orally (to cover LGV), twice daily for 21 days and refer to higher centre as early as possible.

+

Tab Azithromycin 1g orally single dose or

Tab. Ciprofloxacin 500mg orally, twice a day for three days to cover chancroid

Note:

- *A bubo should never be incised and drained at the primary health centre, even if it is fluctuant, as there is a high risk of a fistula formation and chronicity. If bubo becomes fluctuant always refer for aspiration to higher centre.*
- *In severe cases with vulval edema in females, surgical intervention in the form of vulvectomy may be required for which they should be referred to higher centre.*

Syndrome specific guidelines for partner management

- Treat all partners in last 3 months
- Partners should be treated for chancroid and lymphogranuloma venerum
- Tab Azithromycin 1g orally single dose to cover chancroid
- +
Cap Doxycycline 100mg orally, twice daily for 21 days to cover LGV
- Advise sexual abstinence during the course of treatment
- Provide condoms, educate on correct and consistent use
- Refer for voluntary counseling and testing for HIV, syphilis and Hepatitis B
- Schedule return visit after 7 days

Management of pregnant partner

- Quinolones (like ofloxacin, ciprofloxacin), doxycycline, sulfonamides are contraindicated in pregnant women.
- Pregnant and lactating women should be treated with the erythromycin regimen, and consideration should be given to the addition of a parenteral amino glycoside (e.g., gentamicin)

Tab. Erythromycin base, 500mg orally, 4 times daily for 21 days and refer to higher centre.

(Erythromycin estolate is contraindicated in pregnancy due to hepatotoxicity. Erythromycin base or erythromycin ethyl succinate should be given)

Flowchart : Management of genital ulcers

SYNDROME: GENITAL ULCERS



RTIs/STIs: SYPHILIS



CHANCROID



GENITAL HERPES

Causative Organisms

- *Treponema pallidum* (syphilis)
- *Haemophilus ducreyi* (chancroid)
- *Klebsiella granulomatis* (granuloma inguinale)
- *Chlamydia trachomatis* (lymphogranuloma venerum)
- *Herpes simplex* (genital herpes)

History

- Genital ulcer/vesicles
- Burning sensation in the genital region
- Sexual exposure of either partner including high risk practices like oro-genital sex

Examination

- Presence of vesicles
- Presence of genital ulcer- single or multiple
- Associated inguinal lymph node swelling and if present refer to respective flowchart

Ulcer characteristics:

- Painful vesicles/ulcers, single or multiple - Herpes simplex
- Painless ulcer with shotty lymph node - Syphilis
- Painless ulcer with inguinal lymph nodes - Granuloma inguinale and LGV
- Painful ulcer usually single sometimes associated with painful bubo - Chancroid

Laboratory Investigations

RPR test for syphilis
For further investigations refer to higher centre

Treatment

- If vesicles or multiple painful ulcers are present treat for herpes with Tab. Acyclovir 400mg orally, three times a day for 7 days
- If vesicles are not seen and only ulcer is seen, treat for syphilis and chancroid and counsel on herpes genitalis
To cover syphilis
Inj Benzathine penicillin 2.4 million IU IM after test dose in two divided doses (with emergency tray ready)
(In individuals allergic or intolerant to penicillin, Doxycycline 100mg orally, twice daily for 14 days)
+
Tab Azithromycin 1g orally single dose or
Tab. Ciprofloxacin 500mg orally, twice a day for three days to cover chancroid

Treatment should be extended beyond 7 days if ulcers have not epithelialized i.e. formed a new layer of skin over the sore)

Refer to higher centre

- If not responding to treatment
- Genital ulcers co-existent with HIV
- Recurrent lesions

Management of Pregnant Women

- Quinolones (like ofloxacin, ciprofloxacin), doxycycline, sulfonamides are contraindicated in pregnant women.
- Pregnant women who test positive for RPR should be considered infected unless adequate treatment is documented in the medical records and sequential serologic antibody titers have declined.
Inj Benzathine penicillin 2.4 million IU IM after test dose (with emergency tray ready)
- **A second dose of benzathine penicillin 2.4 million units IM should be administered 1 week after the initial dose for women who have primary, secondary, or early latent syphilis.**
- **Pregnant women who are allergic to penicillin should be treated with erythromycin and the neonate should be treated for syphilis after delivery.**
- **Tab. Erythromycin 500mg orally four times a day for 15 days**
(Note: Erythromycin estolate is contraindicated in pregnancy because of drug related hepatotoxicity. Only Erythromycin base or erythromycin ethyl succinate should be used in pregnancy)
- All pregnant women should be asked history of genital herpes and examined carefully for herpetic lesions.
- Women without symptoms or signs of genital herpes or its prodrome can deliver vaginally.
- Women with genital herpetic lesions at the onset of labour should be delivered by caesarean section to prevent neonatal herpes.
- Acyclovir may be administered orally to pregnant women with first episode genital herpes or severe recurrent herpes.

Syndrome specific guidelines for partner management

- Treat all partners in last 3 months
- Partners should be treated for syphilis and chancroid
- Advise sexual abstinence during the course of treatment
- Provide condoms, educate about correct and consistent use
- Refer for voluntary counseling and testing for HIV, Syphilis and Hepatitis B
- Schedule return visit after 7 days

Flowchart : Management of vaginal discharge in females

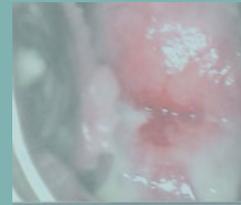
SYNDROME: VAGINAL DISCHARGE



VAGINITIS



TRICHOMONIASIS



CERVICAL HERPES



CERVICITIS

Causative Organisms

Vaginitis

- *Trichomonas vaginalis* (TV)
- *Candida albicans*
- *Gardnerella vaginalis*, *Mycoplasma* causing bacterial vaginosis (BV)

Causative Organisms

Cervicitis

- *Neisseria Gonorrhoeae*
- *Chlamydia trachomatis*
- *Trichomonas vaginalis*
- *Herpes simplex virus*

History

- Menstrual history to rule out pregnancy
- Nature and type of discharge (amount, smell, color, consistency)
- Genital itching
- Burning while passing urine, increased frequency
- Presence of any ulcer, swelling on the vulval or inguinal region
- Genital complaints in sexual partners
- Low backache

Examination

- Per speculum examination to differentiate between vaginitis and cervicitis.
 - Vaginitis:
 - Trichomoniasis - greenish frothy discharge
 - Candidiasis - curdy white discharge
 - Bacterial vaginosis - adherent discharge
 - Mixed infections may present with atypical discharge
 - Cervicitis:
 - Cervical erosion /cervical ulcer/ mucopurulent cervical discharge
- Bimanual pelvic examination to rule out pelvic inflammatory disease
- If Speculum examination is not possible or client is hesitant treat both for vaginitis and cervicitis

Laboratory Investigations

(if available)

- Wet mount microscopy of the discharge for *Trichomonas vaginalis* and clue cells
- 10% KOH preparation for *Candida albicans*
- Gram stain of vaginal smear for clue cells seen in bacterial vaginosis
- Gram stain of endocervical smear to detect gonococci



Treatment

Vaginitis (TV+BV+Candida)

- Tab. Secnidazole 2gm orally, single dose or
Tab. Tinidazole 500mg orally, twice daily for 5 days
- Tab. Metoclopramide taken 30 minutes before Tab. Secnidazole, to prevent gastric intolerance
- Treat for candidiasis with Tab Fluconazole 150mg orally single dose or local Clotrimazole 500mg vaginal pessaries once

Treatment for cervical infection (chlamydia and gonorrhoea)

- Tab cefixim 400 mg orally, single dose
- Plus Azithromycin 1 gram, 1 hour before lunch. If vomiting within 1 hour, give anti-emetic and repeat
 - If vaginitis and cervicitis are present treat for both
 - Instruct client to avoid douching
 - Pregnancy, diabetes, HIV may also be influencing factors and should be considered in recurrent infections
 - Follow-up after one week

Management in pregnant women

Per speculum examination should be done to rule out pregnancy complications like abortion, premature rupture of membranes

Treatment for vaginitis (TV+BV+Candida)

In first trimester of pregnancy

- Local treatment with Clotrimazole vaginal pessary/cream only for candidiasis. Oral Flucanazole is contraindicated in pregnancy.
- Metronidazole pessaries or cream intravaginally if trichomoniasis or BV is suspected.

In second and third trimester oral metronidazole can be given

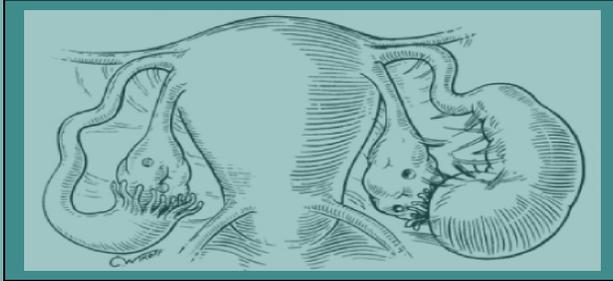
- Tab. Secnidazole 2gm orally, single dose or
Tab. Tinidazole 500mg orally, twice daily for 5 days
- Tab. Metoclopramide taken 30 minutes before Tab. Metronidazole, to prevent gastric intolerance

Specific guidelines for partner management

- Treat current partner only if no improvement after initial treatment
- If partner is symptomatic, treat client and partner using above protocols
- Advise sexual abstinence during the course of treatment
- Provide condoms, educate about correct and consistent use
- Schedule return visit after 7 days

Flowchart : Management of Lower abdominal pain in females

SYNDROME: LOWER ABDOMINAL PAIN



Pelvic inflammatory disease

Causative Organisms

- *Neisseria gonorrhoeae*
- *Chlamydia trachomatis*
- *Mycoplasma, Gardnerella,*
Anaerobic bacteria (*Bacteroides*
sp, gram positive cocci)

History

- Lower abdominal pain
- Fever
- Vaginal discharge
- Menstrual irregularities like heavy, irregular vaginal bleeding
- Dysmenorrhoea
- Dyspareunia
- Dysuria, tenesmus
- Low backache
- Contraceptive use like IUD

Examination

- General examination: temperature, pulse, blood pressure
- Per speculum examination: vaginal/cervical discharge, congestion or ulcers
- Per abdominal examination: lower abdominal tenderness or guarding
- Pelvic examination: Uterine/adnexal tenderness, cervical movement tenderness,

Note: A urine pregnancy test should be done in all women suspected of having PID to rule out ectopic pregnancy.

Laboratory Investigations

If available

- Wet smear examination
- Gram stain for gonorrhoea
- Complete blood count and ESR
- Urine microscopy for pus cells

Differential diagnosis

- Ectopic pregnancy
- Twisted ovarian cyst
- Ovarian tumor
- Appendicitis
- Abdominal tuberculosis

Treatment (Out patient treatment)

In mild or moderate PID (in the absence of tubo ovarian abscess), outpatient treatment can be given. Therapy is required to cover *Neisseria gonorrhoeae*, *Chlamydia trachomatis* and anaerobes.

- Tab. Cefixim 400 mg orally BD for 7 days + Tab. Metronidazole 400mg orally, twice daily for 14 days
- +
 - Doxycycline, 100mg orally, twice a day for 2 weeks (to treat chlamydial infection)
- Tab. Ibuprofen 400mg orally, three times a day for 3-5 days
- Tab. Ranitidine 150mg orally, twice daily to prevent gastritis
- Remove intra uterine device, if present, under antibiotic cover of 24-48 hours
- Advise abstinence during the course of treatment and educate on correct and consistent use of condoms
- Observe for 3 days. If no improvement (i.e. absence of fever, reduction in abdominal tenderness, reduction in cervical movement, adnexal and uterine tenderness) or if symptoms worsen, refer for inpatient treatment.

Caution: PID can be a serious condition. Refer the client to the hospital if she does not respond to treatment within 3 days and even earlier if her condition worsens.

Syndrome specific guidelines for partner management

- Treat all partners in past 2 months
- Treat male partners for urethral discharge (gonorrhoea and chlamydia)
- Advise sexual abstinence during the course of treatment
- Provide condoms, educate on correct and consistent use
- Refer for voluntary counseling and testing for HIV, Syphilis and Hepatitis B
- Inform about the complications if left untreated and sequelae
- Schedule return visit after 3 days, 7 days and 14 days to ensure compliance

Management of Pregnant Women

Though PID is rare in pregnancy,

- Any pregnant woman suspected to have PID should be referred to district hospital for hospitalization and treated with a parenteral regimen which would be safe in pregnancy.
- Doxycycline is contraindicated in pregnancy.
- Note: Metronidazole is generally not recommended during the first three months of pregnancy. However, it should not be withheld for a severely acute PID, which represents an emergency.

Hospitalization of clients with acute PID should be seriously considered when:

- The diagnosis is uncertain
- Surgical emergencies e.g. appendicitis or ectopic pregnancy cannot be excluded
- A pelvic abscess is suspected
- Severe illness precludes management on an outpatient basis
- The woman is pregnant
- The client is unable to follow or tolerate an outpatient regimen
- The client has failed to respond to outpatient therapy

Note: All patients requiring hospitalization for inpatient treatment should be referred to the district hospital

Flowchart: Management of Oral & Anal STIs

Causative Organisms

- *Neisseria gonorrhoeae*
- *Chlamydia trachomatis*
- *Treponema pallidum* (syphilis)
- *Haemophilus ducreyi* (chancroid)
- *Klebsiella granulomatis* (granuloma inguinale)
- *Herpes simplex* (genital herpes)

History of

- Unprotected oral sex with pharyngitis.
- Unprotected anal sex with
 - Anal discharge or tenesmus.

Diarrhea, blood in stool, abdominal cramping, nausea blotting

Examination
Look for

- Oral ulceration, redness, pharyngeal inflammation
- Genital or anorectal ulcers – single or multiple?
- Presence of vesicles?
- Rectal pus?
- Any other STI syndrome

(Do proctoscopy for rectal examination if available)

Laboratory Investigations:

- RPR/VDRL for syphilis
- Gram stain examination of rectal swab will show gram negative intracellular diplococci in case of gonorrhea.

History of

- Unprotected oral sex with pharyngitis.
- Unprotected anal sex with
 - Anal discharge or tenesmus.

Diarrhea, blood in stool, abdominal cramping, nausea blotting

Treatment

- Treat for Syphilis as per genital ulcer flow chart
- Treat for Gonorrhea and chlamydia as per urethral discharge flow chart

Management of Anogenital warts, Molluscum contagiosum and Ectoparasitic infection



Perivulval warts



Penile warts



Perianal warts

Fig 6d Anogenital warts

Causative Organism

Virus: Human Papilloma Virus (HPV)

Clinical features

Single or multiple soft, painless, pink in color, “cauliflower” like growths which appear around the anus, vulvo-vaginal area, penis, urethra and perineum. Warts could appear in other forms such as papules which may be keratinized.

Diagnosis

Presumptive diagnosis by history of exposure followed by signs and symptoms.

Differential diagnosis

- i. Condyloma lata of syphilis
- ii. Molluscum contagiosum

Treatment

Recommended regimens:

Penile and Perianal warts

- 20% Podophyllin in compound tincture of benzoin applied to the warts, while carefully protecting the surrounding area with Vaseline, to be washed off after 3 hours. It should not be used on extensive areas per session.
- Treatment should be repeated weekly till the lesions resolve completely.

Note: Podophyllin is contra-indicated in pregnancy. Treatment should be given under medical supervision. Clients should be warned against self-medication.

Cervical warts

- Podophyllin is contra-indicated.
- Biopsy of warts to rule out malignant change.
- Cryo cauterization is the treatment of choice.
- Cervical cytology should be periodically done in the sexual partner(s) of men with genital warts.



Fig Molluscum contagiosum

Causative Organism

Pox virus

Clinical features

Multiple, smooth, glistening, globular papules of varying size from a pinhead to a split pea can appear anywhere on the body. Sexually transmitted lesions on or around genitals can be seen. The lesions are not painful except when secondary infection sets in. When the lesions are squeezed, a cheesy material comes out.

Diagnosis

Diagnosis is based on the above clinical features.

Treatment

- Individual lesions usually regress without treatment in 9-12 months.
- Each lesion should be thoroughly opened with a fine needle or scalpel. The contents should be exposed and the inner wall touched with 25% phenol solution or 30% trichloroacetic acid.

Pediculosis pubis

Causative Organism

Lice - Phthirus pubis

Clinical features

There may be small red papules with a tiny central clot caused by lice irritation. General or local urticaria with skin thickening may or may not be present. Eczema and Impetigo may be present.

Treatment

Recommended regimen:

- Permethrin 1% creme rinse applied to affected areas and washed off after 10 minutes

Special instructions

- Retreatment is indicated after 7 days if lice are found or eggs observed at the hair-skin junction.
- Clothing or bed linen that may have been contaminated by the client should be washed and well dried or dry cleaned.
- Sexual partner must also be treated along the same lines.

Scabies

Causative Organism: Mite - Sarcoptes Scabiei.



Fig: Genital Scabies

Clinical features

Severe pruritis (itching) is experienced by the client, which becomes worse at night. Other members of family also affected (apart from sexual transmission to the partner, other members may get infected through contact with infected clothes, linen or towels).

Complications

- Eczematization with or without secondary infection
- Urticaria
- Glomerulonephritis
- Contact dermatitis to antiscabetic drug

Diagnosis

The burrow is the diagnostic sign. It can be seen as a slightly elevated grayish dotted line in the skin, best seen in the soft part of the skin.

Treatment

Recommended regimens:

- Permethrin cream (5%) applied to all areas of the body from the neck down and washed off after 8--14 hours.
- Benzyl benzoate 25% lotion, to be applied all over the body, below the neck, after a bath, for two consecutive nights. Client should bathe in the morning, and have a change of clothing. Bed linen is to be disinfected.

Special instructions

- Clothing or bed linen that may have been contaminated by the client should be washed and well dried or dry cleaned.
- Sexual partner must also be treated along the same lines.

5. STIs AMONG SPECIAL POPULATIONS

Sexually Transmitted Infections (RTIs) among children and adolescents

Reproductive tract infections in children are acquired through three different ways (i) transplacental transmission occurring in utero, intrapartum transmission (during labour and delivery) e.g. syphilis, HIV, CMV and human papilloma virus infection (HPV) ; (ii) postnatal transmission (during breast-feeding, accidental and through sexual abuse) (iii) due to sexual abuse or in sexually active adolescents who are at risk.

By definition child sexual abuse is the use of a child as an object of gratification for adult sexual needs or desire. The common sexual abuse encountered by girls are genital contact, masturbation, vaginal, oral or anal intercourse by a male perpetrator, while boys are subjected to fellatio and anal intercourse.

Adolescents (young people) in the age group 11-24 years contribute to about 30% of our population. The data from various Indian studies reveal that adolescents are indulging in pre-marital sex more frequently and at an early age. STIs, including HIV, are most common among young people aged 15-24 and more so in young women of that age group. The physiological risk of increased susceptibility to infections among the adolescent girls is due to the presence of greater cervical ectopy making their cervix more susceptible to gonorrhoea, chlamydia and HPV. This is because, adolescents today face enhanced vulnerability to unwanted pregnancy and STIs including HIV/AIDS. Studies from African countries suggest girls marrying at early age are at the risk of HIV infections. Many interrelated and complex factors that put adolescents at risk of STIs include poor education, unemployment and poverty. Urbanization tends to disrupt family relationships, social networks and traditional values while generating more opportunity for sexual encounters. Also putting both male and female adolescents at risk of STI is their lack of information about sexual matters, as well as STI prevention, symptoms and treatment. Even when adolescents have accurate knowledge about STD's, some adolescents incorrectly perceive their risk as low either due to familiarity with a sexual partner or as relationship matures or simply because they are passing through a stage of life in which risk taking is particularly attractive especially under the strong influence of their peers, migration and displacement, multiple and concurrent sexual partnership lack of access to effective and affordable STI services. Therefore there is an urgent need for improving the accessibility of adolescents to preventive and curative services including information and counseling.

In the RCH 2 Adolescent Reproductive and Sexual Health (ARSH) Strategy is to be implemented in the primary health care setting based on the implementation Guide

for state and district program managers. Under this strategy, it is expected that a core package of promotive, preventive, curative, counseling, referral and outreach services would be provided at the public health care facilities. It states that services for adolescents must demonstrate relevance to the needs and wishes of young people.

Clinical presentation of RTIs/STIs in children and adolescents

The presenting symptoms of adolescents is very peculiar and very often they present with symptoms other than those of RTI/STI. Therefore risk assessment plays a crucial role. The increasing tendency of homosexual behavior as reported by some studies must be kept in mind too. In this context ano-genital lesions must be looked for.

Girls:

- In general, endogenous vaginitis rather than an STI is the main cause of vaginal discharge among adolescent females.
- Approximately 85% of gonococcal infection in females will be asymptomatic. However, there may be vulval itching, minor discharge, urethritis or proctitis. In pre-pubescent girls, a purulent vulvo-vaginitis may occur.
- Similarly, *C. trachomatis* infection is asymptomatic in the majority of cases. Symptoms that may occur in the adolescent are inter-menstrual bleeding, postcoital bleeding and an increase in vaginal secretions.
- *C. albicans* is uncommon in adolescents prior to puberty. If present, the adolescent may have a discharge, vulval itching, dyspareunia, peri-anal soreness or a fissuring at the introitus. Attacks of candida vulvitis may be cyclical in nature and corresponds to menstruation.
- Bacterial vaginosis does not produce vulvitis and the adolescent will not complain of itching or soreness.
- The signs of acquired syphilis in children present with small chancres or mucocutaneous moist lesions either in vulva or anus. Presentation of syphilis is the same in adolescents and adults.

Boys :

- Gonorrhoea among boys presents as proctitis, urethral discharge, asymptomatic pyuria, penile edema, epididymitis and testicular swelling. Disseminated gonorrhoea presents with multiple systemic manifestations.
- Chlamydia in males presents as urethritis.

Sexually Transmitted Infections (STIs) among Sex Workers and MSMs

In some groups of population having risk practices such as sex workers, men having sex with men and intravenous drug users; the prevalence of STIs and HIV is higher than the general population. Treating these patients early and appropriately will

reduce risk of HIV infection and if already infected, they can be advised for seeking the available services at the integrated testing and counseling facilities for knowing of HIV status and further follow up action as indicated. It is desirable that all patients with risk behaviour are tested.

Clinical Management of STI in Most at Risk Groups

High rates of curable STIs have been observed worldwide in commercial sex settings where condom use rates are low and where there is limited access to effective STI treatment services.

Effective prevention and treatment of STIs among female sex workers requires attention to both symptomatic and asymptomatic infections. The prevention and treatment of STIs in female sex workers in STI clinics should have the following two components:

- *Treatment of Symptomatic Infections*

As per the flow charts included in these guidelines

- *Screening and Treatment of Asymptomatic Infections:*

- Periodic history taking, physical examination and simple laboratory diagnostics (where available);
- Periodic presumptive treatment for asymptomatic gonococcal and chlamydial infections (in areas with high STI rates and minimal STI services); and
- Semi-annual serologic screening for syphilis.

Female sex workers should be encouraged to attend the clinic for routine check-ups. During the visit, the clinic staff should take a detailed history and perform an examination. In addition, even if there is no evidence of infection, treatment is recommended:

- If the sex worker is visiting the clinic for the first time;
- If six months have passed since the sex worker last received treatment.

The rationale for presumptively treating sex workers who are asymptomatic is that they are frequently exposed to STIs and they often do not show signs or symptoms even when infected. A sex worker is likely to be exposed and infected with a STI, if the time lapse is more since her last treatment. (Note: This recommendation will be reviewed and revised as data on the epidemiology of STIs among sex workers become available).

It is anticipated as STI prevalence falls, periodic presumptive treatment of asymptomatic STI treatment among sex workers will be tapered to first visit asymptomatic treatment under the following conditions:

- Evidence of low gonococcal and chlamydial infections (10% and below);
- High condom use among sex workers (>70%); and

- High quality STI services for sex workers have been established, with almost 80% of sex workers having access to STI services (80% provided with asymptomatic treatment at least once and are coming to the clinic for regular STI screening).

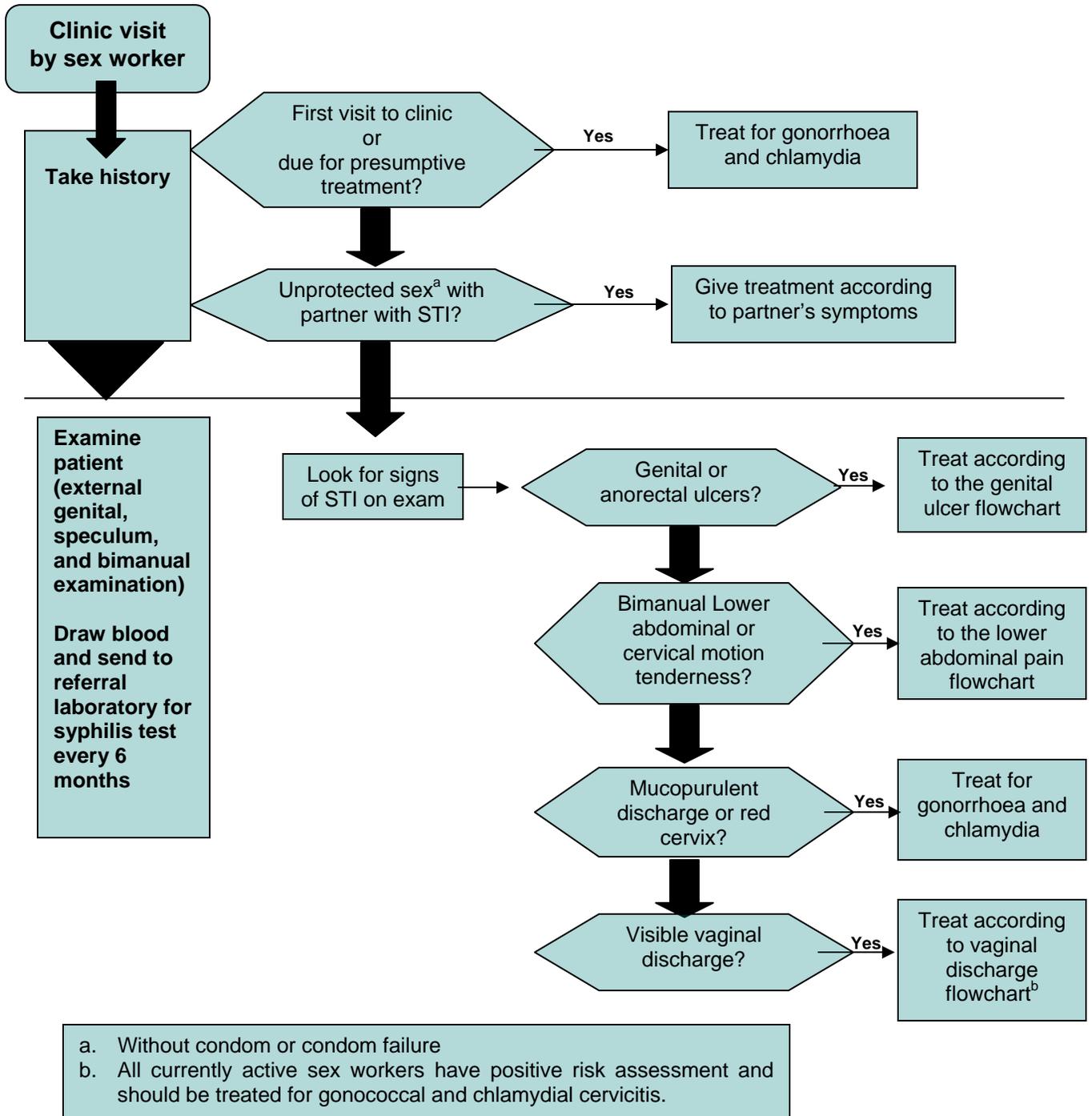
In such situations, regular visits for routine examination and counseling should be promoted. Sex workers should be counseled at every opportunity (in the clinic and in the community) on the importance of using condoms. Peer educators, outreach workers and clinic staff should reinforce the following message to sex workers visiting the clinic:

- The only reliable way to protect oneself from HIV and STIs is to use condoms consistently and correctly; and
- Antibiotics dispensed at the clinic are effective only for the few curable STIs.

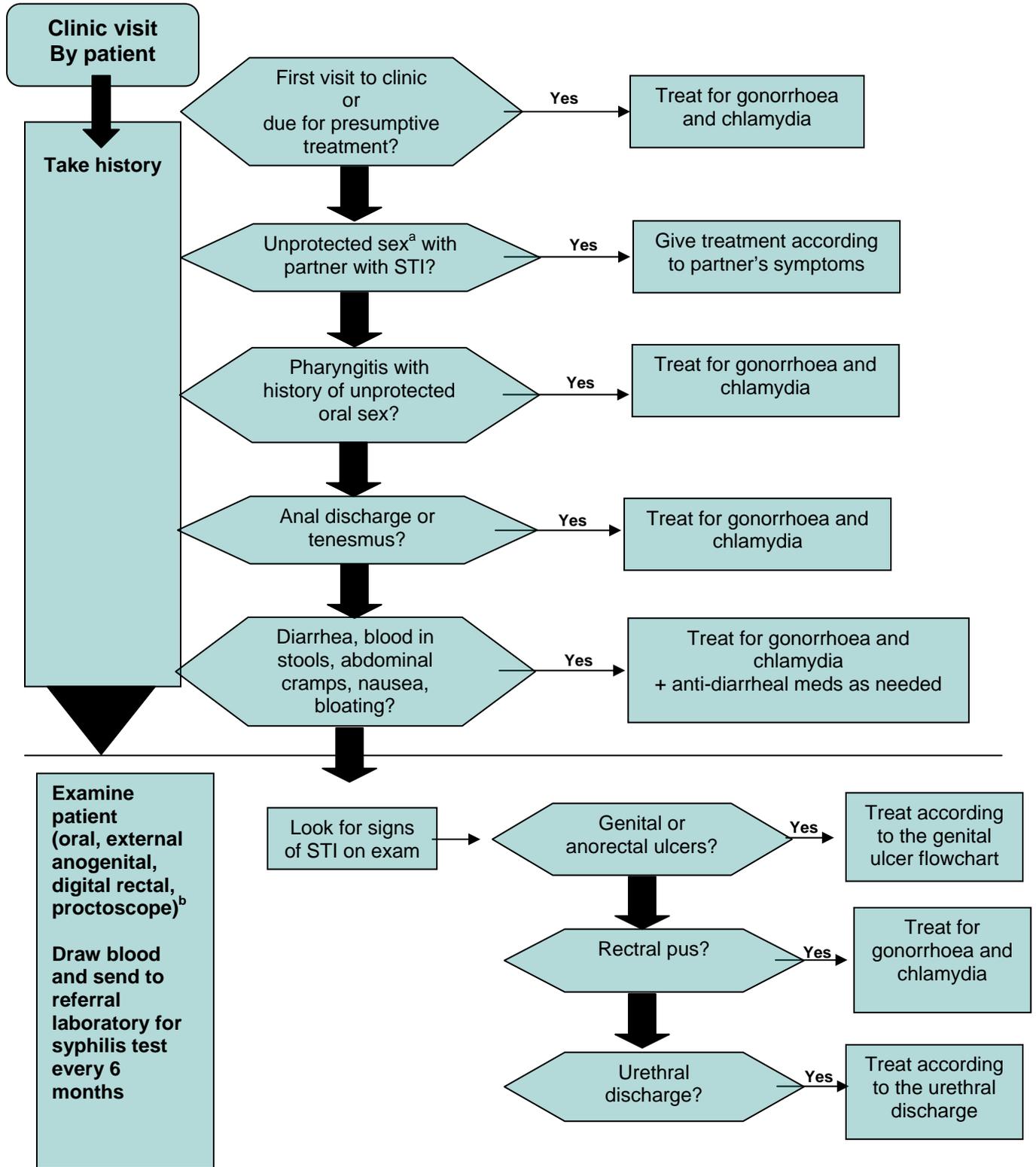
Outreach staff should also remind sex workers about their clinic appointments and help them keep their appointments.

It is also important to cater for STI management needs of MSM population groups. Emergence of anal STIs is cause of concern. Service providers should be sensitive to the needs of the MSM population groups and counsel them about risk reduction, use of condoms and HIV testing.

A. Flowchart for routine visit for female sex workers



B. Flowchart for routine visit for male and transgender sex workers in clinics



a. Without condom or condom failure
 b. If asymptomatic, conduct digital rectal and proctoscope exam only if acceptable.

6. MANAGEMENT OF SEXUAL VIOLENCE

Sexual violence is defined as “any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic women’s sexuality, using coercion, threats of harm or physical force, by any person regardless of relationship to the victim, in any setting, including but not limited to home and work” (Source?). Often, because the victims feel uncomfortable talking about sexual violence, they may come to the clinic with other non-specific complaints or requesting a check-up, assuming that the health care provider will notice anything abnormal that needs treatment. Therefore, health care workers should maintain a high index of suspicion and ask about experience of sexual violence or abuse. The following services should be available, on-site or through referral, for patients who have experienced sexual violence:

a) Visual inspection

Before proceeding for examination consent of the victim or the legal guardian in case of minor must be taken. Counseling of the victim must be done. Examination of clothes, injuries and genital must be carried out. Look for bleeding, discharge, odour, irritation, warts and ulcerative lesions.

b) Collection of forensic evidence

Forensic examination should be available to document evidence if the person chooses to take legal action. Staff should be trained in how to take forensic specimens, or referral links should be made. Forensic examination must include physical and genital examination. (Refer to the State-specific guidelines for forensic examination).

c) Collection of samples for detecting STIs

If facilities permit, swabs must be collected from various sites for wet mount examination or culture of a number of causative organisms. Blood could be collected for VDRL/RPR, HIV and HbsAg tests.

d) Essential medical care for injuries and health problems

Medical management includes

- Prevention of pregnancy by offering emergency contraception
- STI prophylaxis
- Care of injuries

Note: *It is important to obtain informed consent for any examination, treatment or referral in a case of a victim of sexual assault.*

Essential medical care for injuries and health problems would consist of

➤ **Post exposure prophylaxis against pregnancy**

Emergency Contraception (EC) to prevent unwanted pregnancy should be taken

Type of Emergency contraception	First dose (within 72 hours after unprotected intercourse)	Second dose (12 hours later)
Special-purpose levonorgestrel-only pills for emergency contraception	Levonorgestrel in 2 doses First dose of 0.75 mg of levonorgestrel, Repeat original dose after 12 hrs	

within 72 hrs of unprotected sexual intercourse.

➤ **Post exposure prophylaxis of STI**

STI prophylaxis should be started as early as possible, although the doses should be spread out (and taken with food) to reduce side-effects such as nausea.

Box :

STI presumptive treatment options for adults and older children and adolescents weighing more than 45 kg

1. For protection against syphilis, gonorrhoea and chlamydia

- Tab. Azithromycin 1gm orally, single dose under supervision PLUS
- Tab. Cefixime 400mg orally

2. For protection against T. Vaginalis

- Tab Metronidazole 2gm single dose or Tab Tinidazole 2gm single dose

Box
STI Presumptive treatment options for children

1. For protection against syphilis and chlamydia

- Erythromycin 12.5 mg/kg of body weight orally 4 times a day for 14 days

2. For protection against gonorrhoea

- Cefixime 8 mg/kg of body weight as a single dose, or
- Ceftriaxone 125 mg by intramuscular injection,

3. For protection against T. Vaginalis

- Metronidazole 5 mg/kg of body weight orally 3 times a day for 7 days

Post exposure prophylaxis of HIV

- Refer to district hospital and follow NACO guidelines for the same

Post exposure prophylaxis against Hepatitis B

- If not vaccinated earlier, it is recommended. If vaccine is not available, refer to the centre where Hepatitis B vaccination facilities is available.

An evaluation of the person's personal safety should be made by a protective services agency or shelter, if available, and arrangements made for protection if needed.

Psychosocial support (both at time of crisis and long-term)

Psychosocial management includes counseling and supportive services, which should be available on-site or by referral. Women or children who have been sexually abused may need shelter and legal protection. Adolescents in particular may need crisis support, as they may not be able or willing to disclose the assault to parents or care takers.

Follow-up services for all of the above

It is essential to explain the importance of follow-up appointments and services during the first visit itself. The woman should be clearly told whom to contact if she has other questions or subsequent physical or emotional problems related to the incident.

7. COUNSELING ON RTIs/STIs

Effective communication of information on prevention, especially on behavior change, linked with effective treatment is key to the control of RTIs/STIs. When clear communication is linked to effective treatment there can be additional benefits. Even when treatment is not available at outreach RCH service delivery settings, prevention information and condoms can be provided.

Interpersonal communication: The face- to-face process of giving and receiving information between two or more people. This involves both verbal and non-verbal communication.

- **Verbal communication:** The way we talk with clients, the words we use, and their meanings.
- **Non-verbal communication:** The way we behave with clients, including actions, behaviors, gestures, and facial expressions.

Counseling: Face-to-face, personal, confidential communication in which one person helps another to make decisions and then to act on them. Good counseling has two major elements: mutual trust between client and provider and the giving and receiving of relevant, accurate, and complete information that enables the client to make a decision. It requires conversational and listening skills.

Guidelines for counseling

- a) Welcome your client warmly by name and introduce yourself.
- b) Sit closely enough so that you can talk comfortably and privately.
- c) Make eye contact and look at the client as s/he speaks.
- d) Use language that the client understands.
- e) Listen and take note of the client's body language (posture, facial expression, looking away, etc.). Seek to understand feelings, experiences and points of view.
- f) Be encouraging. (Nod or say, "Tell me more about that.")
- g) Use open-ended questions.
- h) Provide relevant information.
- i) Try to identify the client's real concerns.
- j) Provide various options for the client.
- k) Respect the client's choices.
- l) Always verify that the client has understood what has been discussed by having the client repeat back the most important messages or instructions.

Barriersto good counseling

- Lack of privacy.
- Not greeting or not looking at the client.
- Appearing to be distracted (for example, by looking at your watch or reading papers while s/he is talking).
- Using a harsh tone of voice or making angry gestures.
- Sitting while the client stands or sitting far away from the client.
- Allowing interruptions during the consultation.
- Being critical, judgmental, sarcastic, or rude.
- Interrupting the client.
- Making the client wait for a long time.
- Not allowing enough time for the visit.

Client counseling on RTIs/STIs: During counseling session, provider should talk about causation , transmission, recommended treatment, prevention, risk reduction, behavior change, and partner referral. Clinics can have take away information brochures in simple languages with illustrations to reinforce messages.

Goals of client education and counselling

- Primary prevention or preventing infection in uninfected clients. This is the most effective strategy to reduce the spread of RTIs/STIs and can be easily integrated into all health care settings.
- Curing the current infection.
- Secondary prevention, which prevents further transmission of that infection in the community and prevents complications and re- infection in the client.

What the client needs to know

Prevention of RTIs/STIs

- Risk reduction
- Using condoms, correctly and consistently, availability of condoms
- Limiting the number of partners
- Alternatives to penetrative sex
- Negotiating skills

Information about RTIs/STIs

- How they are spread between people
- Consequences of RTIs/STIs
- Links between RTIs/STIs and HIV
- RTI/STI Symptoms -what to look for and what symptoms mean

RTI/STI Treatment

- How to take medications
- Signs that call for a return visit to the clinic
- Importance of partner referral and treatment
- Acknowledge gender inequalities which may impact male partners coming forward to seek services

Principles of effective client education

- Shows respect and concern for the safety of clients through body language, telling clients you are concerned, being attentive to and acknowledging clients' feelings, and taking more time with them.
- Is client-centered. Provides messages that are tailored for each individual -different messages for married men, women, and adolescents.
- Involves 3 kinds of learning: through ideas, actions, and feelings (cognitive, psycho-motor, and affective).
- Uses multiple channels (eyes, ears and face-to-face/visual, auditory, interpersonal). Delivers messages via the eyes, ears, and face-to-face communication.

Integrated Counselling and Testing Centers (ICTC) and their role in STI prevention and Management

In NACP III, the NATIONAL AIDS Control Organization has introduced the concept of integrating all the HIV / AIDS prevention, control and care activities of the hospitals under one roof through integrated counseling and testing centers (ICTC)

The integrated centers will serve as single window system by pooling all Counselors and Lab Technicians working in ICTC, PPTCT, Blood Safety, STI, ART/OIs and HIV - TB together to offer round the clock counseling and testing services through the policy of "opt-out" which enables everyone coming to the hospitals to avail the facilities of counseling and testing which is established in to the hospital system ("opt in" is the concept for walk in clients who come forward

voluntarily for counseling and testing;“ opt out” is the concept by which the counseling and testing services provided by the hospital for everyone could be utilized or denied). This common facility will remove fear, stigma and discrimination among the clients and patients, PLHAs and the referrals.

The ICTC services will have common television and video based health education materials to be screened continuously in the patients waiting hall and hence various information related to preventive, promotive and curative health care information along with HIV/AIDS, and various services provided by the hospital will be clearly well informed to all the patients.

Integrated Counseling and Testing Centers are the first level of contact where concerned individuals can receive comprehensive and accurate information on HIV/AIDS. Each centre has a trained counselor and a laboratory technician. There are at present 2815 counseling centers and more are being established. ICTCs are located in the medical colleges, district hospitals in all states and in addition in selected CHCs and PHCs especially in the high prevalence states.

As per the National AIDS Prevention and Control Policy the tests are voluntary and strict confidentiality of the results is maintained.

Pre-test counseling aims

- To ensure that any decision to take the test is fully informed & voluntary
- To prepare the client for any type of result, whether negative or positive or indeterminate
- To provide client risk reduction information & strategies irrespective of whether testing proceeds
- The clients are advised about preventive measures and use of condoms.
- To provide options for PPTCT
- To provide an entry point to treatment and care

If the client declines to take the test, he/she leaves the ICTC. Some clients return to the ICTC after a few days for the test. If the client agrees to undergo the test, he/she proceeds to the attached laboratory for blood collection. After the blood sample is taken, the client either waits for the results or is asked to return on assigned date with Patient Identification Digit (PID) number

The tests are performed by using the rapid test kits. If the test is negative and the client has history of high risk factors, he/she is advised to repeat the test after 3 months as he/she may be in the window period. If the result is positive the test is repeated with kits using a different method of antibody detection. The result is considered positive if all three tests are positive. Before the results are revealed to the client, post counseling is done.

Post- test counseling aims to:

- Help client understand and cope with the HIV test results
- Provide the client with any further information required
- Help clients make immediate, short-term and long-term future plans
- Help clients decide what to do about disclosing their test result to partners and others
- Help clients reduce their risk of HIV/ AIDS and take action to prevent infection to others
- Help clients access the medical and social care and support they need
- Establish link with PLHA groups, if needed

At any point of time during the ICTC visit, the client has the choice to consult a medical officer if he/she wishes.

The following is recommended

- (i) HIV testing should be offered for **all STIs patients** after pre-test counseling and informed consent. There should be guarantee for confidentiality.
- (ii) In some cases of STIs in the presence of HIV infection, larger doses and longer treatment duration of the drugs listed under the different STIs may be required. These patients should be followed up regularly for longer duration.
- (iii) Excessive use of anti-microbials should be avoided, as it is likely to lead to more rapid development of antibiotic resistance.
- (iv) Although counseling of individual patients on risk reduction, and prevention of transmission to the partners should be done in all patients of STI, this is of vital importance for those infected with HIV.

ANNEXURES

LABORATORY TESTS FOR RTIs/STIs

Laboratory tests improve the diagnostic sensitivity and specificity of symptomatic RTIs/STIs, particularly in women, to differentiate serious infections, i.e., cervicitis, from milder but more common infections, i.e., vaginitis. Simple laboratory tests incorporated in syndromic management of urethral discharge also help distinguish between mixed and single infections, reducing the administration of unnecessary antibiotics. The tests also help in detection of infections in asymptomatic individuals, specifically in female patients, who carry the burden of RTIs/STIs complications and sequelae. Laboratory testing is even more important in pregnant women to prevent the adverse consequences of syphilis, gonococcal and chlamydial infection in newborns.

Laboratory diagnosis of RTIs includes three major equally important steps i.e; collection of specimen, its transport and use of a reasonable sensitive and specific test. Laboratory procedures at PHC level should include microscopic examination of fresh and stained specimens. Microscopic examination of urethral discharge helps to single out nongonococcal infection. Wet mount microscopy in vaginal discharge helps to detect trichomoniasis, candidiasis and bacterial vaginosis. Simple additional tests to identify bacterial vaginosis are the KOH sniff test and measurement of pH of vaginal fluid. Lab procedures may also include simple nontreponemal syphilis screening tests: rapid plasma reagin (RPR) or Venereal Disease Research Laboratory (VDRL).

Effective diagnosis of vaginitis by vaginal pH, amine test and wet smear of vaginal smear can be achieved with a sensitivity of 75-80%. The sensitivity of detecting candida organisms by 10% KOH preparation, saline microscopy and Gram stain is 70%, 40-60% and 65% respectively. The sensitivity of wet mount to identify trichomonads in symptomatic women is approximately 80% while it decreases to 50% in asymptomatic women. The sensitivity of papanicolaou (PAP) smear for *T. vaginalis* is around 60%. Gram stain is more reliable than PAP for diagnosis of BV infection. For other RTIs/STIs, it is advisable to use ELISA based assays or molecular diagnostics to achieve good sensitivity and specificity.

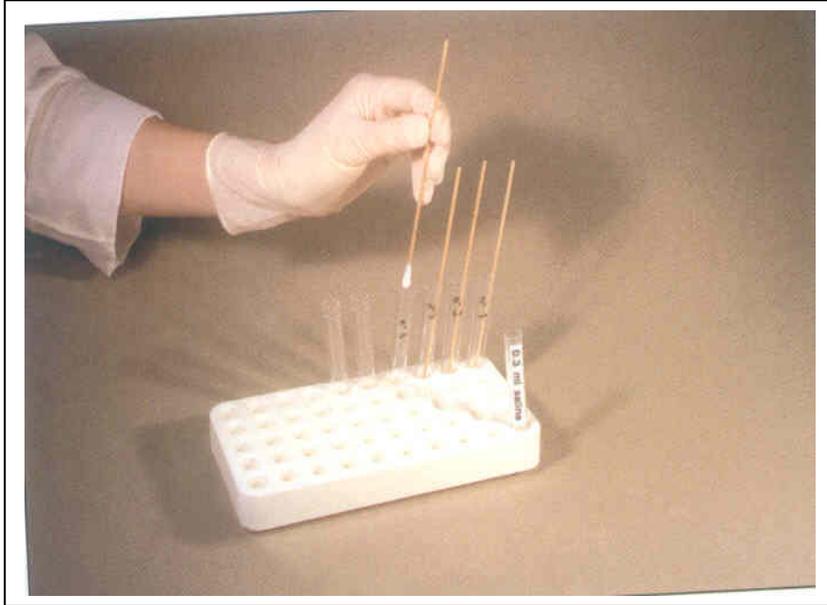


Fig : Collection of specimen on swab

Vaginal pH

The pH of vaginal fluid should be measured using pH paper of appropriate range (3.8 to 6.0). The vaginal fluid sample is collected with a swab from the lateral and posterior fornices of the vagina and the swab is then touched directly on to the paper strip. Alternatively, the pH paper can be touched to the tip of the speculum after it has been withdrawn from the vagina. Care must be taken not to use any jelly (eg K.Y jelly) or disinfectant (eg.savlon) before doing pH test. Contact with cervical mucus must be avoided since it has a higher pH. The normal vaginal pH is 4.0. In bacterial vaginosis (BV), the pH is generally elevated to more than 4.5.

The vaginal pH test has the highest sensitivity (true negative) of the four characteristics used for identification of BV, but the lowest specificity (true positive); an elevated pH is also observed if the vaginal fluid is contaminated with menstrual blood, cervical mucus or semen, and in women with a *T. vaginalis* infection. In simple words it means that if pH test is negative the result can be taken as it is but if it is positive one has to rule out the other factors contaminating the sample such as menstrual blood, cervical mucus or semen or presence of *T. vaginalis* infection

Wet mount microscopy

Wet mount microscopy is the direct microscopic examination of vaginal discharge is for the diagnosis of trichomoniasis, candidiasis and bacterial vaginosis.

Box: Wet mount microscopy examination of vaginal discharge

Collect specimen	Take a specimen of discharge with a spatula from the side walls or deep in the vagina where discharge accumulates.
Prepare slide	Mix specimen with 1 or 2 drops of saline on a glass slide and cover with a cover slip.
What to look for	<ul style="list-style-type: none">• Examine at 100X magnification and look for typical jerky movement of motile trichomonads (ovoid, globular, pear-shaped flagellated protozoan).• Examine at 400X magnification to look for yeast cells (round to ovoid cells with typical budding) and trichomonads.• To make identification of yeast cells easier in wet mount slides, mix the vaginal swab in another drop of saline and add a drop of 10% potassium hydroxide to dissolve other cells and note any fishy odour.• Presence of clue cells (squamous epithelial cells covered with many small coccobacillary organisms). Wet mount shows stippled granular cells without clearly defined edges because of the large numbers of adherent bacteria present and an apparent disintegration of the cells. The adhering bacteria are predominantly <i>G. vaginalis</i>, sometimes mixed with anaerobes).
Important	Look for evidence of other vaginal or cervical infections as multiple infections are common.

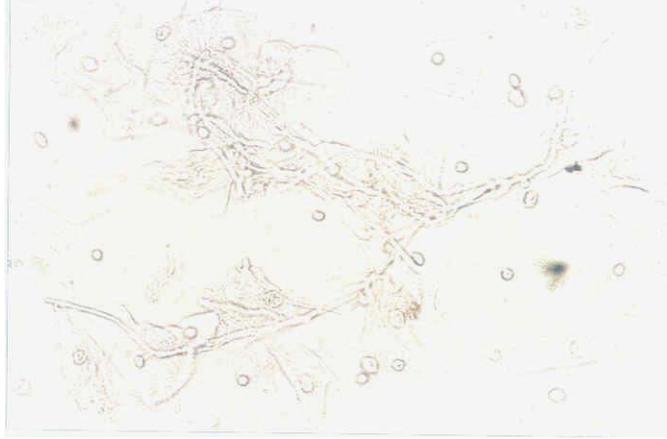


Fig : Potassium hydroxide preparation of vaginal fluid showing budding yeast and mycelia



Fig : "Clue cells" in vaginal wet mount (x 400)

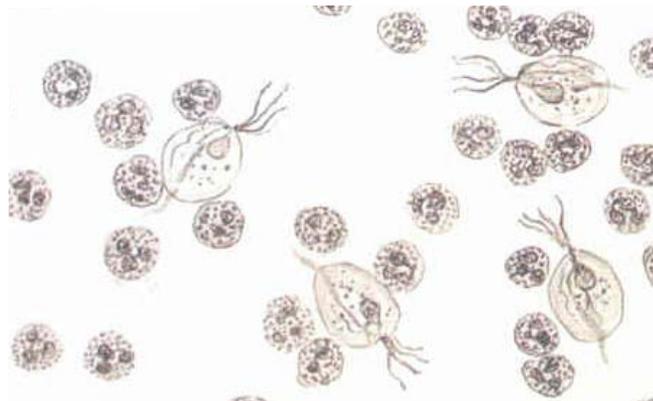


Fig *Trichomonas vaginalis* in a wet mount of vaginal discharge (x 400)

Box: Clinical criteria for Bacterial Vaginosis (BV): BV can be diagnosed using simple clinical criteria with or without the aid of a microscope.

Collect specimen	Note color and consistency of discharge. Take a specimen of discharge from the side walls or deep in the vagina where discharge pools (or use discharge remaining on speculum). Touch pH paper to discharge on swab or speculum and note pH.
Prepare slide	<ul style="list-style-type: none"> Place specimen on a glass slide. Add a drop of 10% potassium hydroxide (KOH) and note for any fishy smell. Make a wet smear with 0.9% normal saline, cover with coverslip and see under microscope for clue cells.
What to look for	<p>The diagnosis of BV is based on the presence of at least 3 of the 4 following characteristics</p> <ul style="list-style-type: none"> Homogeneous white-grey discharge that sticks to the vaginal walls Vaginal fluid pH >4.5 Release of fishy amine odour from the vaginal fluid when mixed with 10% potassium hydroxide (positive whiff test) “Clue cells” visible on microscopy on wet preparation
Important	Look for evidence of other vaginal or cervical infections as multiple infections are common.

Whiff test

Women with BV often complain of a foul vaginal smell. This odour is due to the release of amines, produced by decarboxylation of the amino acids lysine and arginine by anaerobic bacteria. When potassium hydroxide is added to the vaginal fluid, these amines immediately become volatile, producing the typical fishy odour.

Place a drop of vaginal fluid on a glass slide and add a drop of 10% potassium hydroxide. Hold the slide close to nose to detect the amine odour. After a positive reaction, upon standing the specimen will quickly become odourless because the amines will be rapidly and completely volatilized.

Gram stain microscopy

A gram stain of a vaginal smear has a higher specificity for the detection of clue cells than a wet mount preparation. Moreover, a Gram stain allows good evaluation of the vaginal bacterial flora. Normal vaginal fluid contains predominantly Lactobacillus species and exceedingly low numbers of streptococci and coryneform bacteria. In BV, lactobacilli are replaced by a mixed flora of anaerobic bacterial morphotypes and *G. vaginalis*. However, gram stain microscopy has a very low sensitivity for detecting gonorrhea among women; culture remains the method of choice.

For men, gram stain microscopy of urethral discharge smear will show gram-negative intracellular diplococci in case of gonorrhea. In case of non-gonococcal urethritis more than 5 neutrophils per oil immersion field (1000X) in the urethral smear or more than 10 neutrophils per high power field in the sediment of the first void urine are observed.

Box: Gram stain microscopy of vaginal smears	
Collect specimen	A Gram stain slide can be prepared at the same time as the wet mount by rolling the spatula/swab on a separate slide.
Prepare slide	<ol style="list-style-type: none">1. Heat fix.2. Stain with crystal violet (60 seconds) and rinse.3. Stain with iodine (60 seconds) and rinse.4. Decolorize with acetone-ethanol for few seconds (until the liquid runs clear).5. Stain with safranin (60 seconds) and rinse.6. Gently blot dry and examine under oil immersion (1000X) and count each type of organisms.
What to look for	<ol style="list-style-type: none">1. Lactobacilli only: Normal2. Mixed flora, mainly lactobacilli with a few short rods (cocci bacilli): Considered normal3. Presence of clue cells; mixed flora, mainly Gardnerella and anaerobic bacteria with a few lactobacilli diagnose as BV4. Presence of clue cells, mixed flora of Gram-positive, Gram-negative and Gram-variable rods; no lactobacilli diagnose as BV
Important	Look for evidence of other vaginal or cervical infections as multiple infections are common.

***Nugent score**

Scoring system (0 to 10) from Gram-stained vaginal smears^a

Total Score	Lactobacillus morphotypes	Gardnerella and Bacteriodes spp. morphotypes	Curved gram-variable rods
0	4 +(>30/oif)	0(0/oif)	0
1	3 +(5-30/oif)	1 +(<1/oif)	1+ or 2+
2	2 +(1-4/oif)	2 +(1-4/oif)	3+ or 4+
3	1 + (<1/oif)	3 +(5-30/oif)	
4	0 (0/oif)	4 +(>30/oif)	

^aMorphotypes are scored as the average number seen per oil immersion field(oif).

Note that less weight is given to curved Gram - variable rods. Total score = lactobacilli + *G. vaginalis* and *Bacteriodes* spp. + curved rods.

0 = no morphotypes present

1 = <1morphotypes present

2 = 1 to 4 morphotypes present

3 = 5 to 30 morphotypes present

4 = 30 or more morphotypes present.

Interpretation of Nugent score

0-3 = normal, never treat

4-6 = intermediate, decide on symptoms for treatment

7-10 = Treat

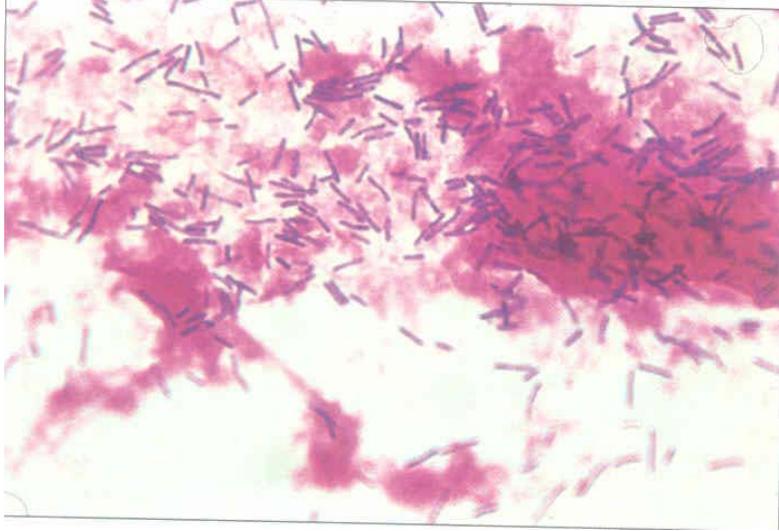


Fig :Gram stained vaginal smear showing a normal flora of lactobacilli (x 1000)

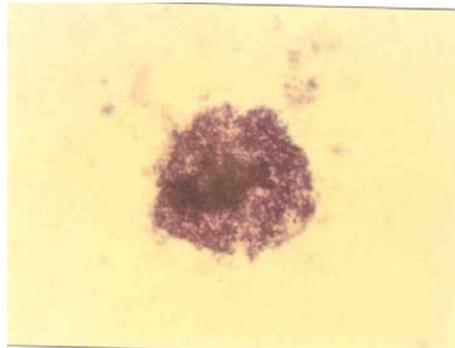


Fig :Gram stained vaginal smear with typical "clue cell" (x 1000)

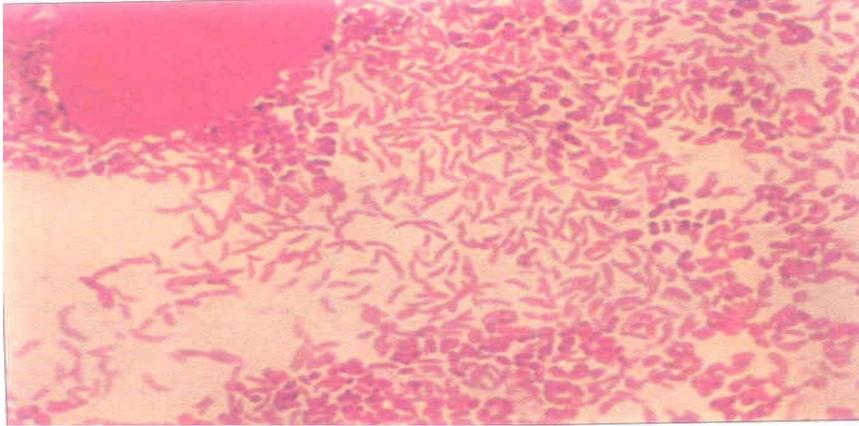


Fig : Gram stained vaginal smear showing large Gram- negative rods (*Mobilincus mulieris*) (x 1000)

Use of gram stain for diagnosis of cervical infection

1. The Gram stain method in female does not provide conclusive evidence of the presence of Gonococcal infection. Presence of gram negative diplococci indicates infection but their absence does not rule out infection.
2. The costs associated with the method, including the cost of maintaining microscopes, outweigh the benefits in terms of improved quality of care.

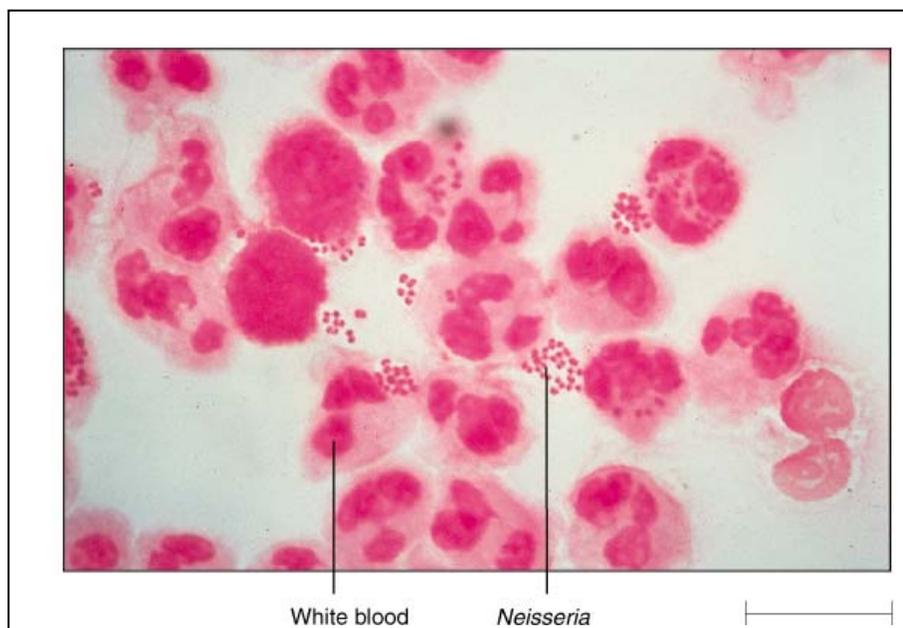


Fig : Gram stain smear - Gram-negative diplococci of *Neisseria gonorrhoea*.

Rapid Plasma Reagin (RPR) test for Syphilis

The current nontreponemal tests for syphilis are Venereal Disease Research Laboratory (VDRL) and rapid plasma reagin (RPR) test. RPR test is most suitable for the primary health care set-up.

Procedure of RPR test

- Inform about the infection and the procedure for diagnosis
- Seek consent
- Use a sterile needle and syringe. Draw 5 ml of blood from a vein. Put in a plain test tube
- Let the test tube stand for 20 minutes to allow serum to separate (Or centrifuge 3–5 minutes at 2000–3000 rpm). In the separated sample, serum will be on top.
- Use sampling pipette to transfer the serum. Take care not to include any red blood cells from the lower part of the separated sample.
- Hold the pipette vertically over a test card circle. Squeeze test to allow one drop (50 µl) of serum to fall onto a circle. Spread the drop to fill the circle using a toothpick or other clean spreader.

Important: Several samples may be done on one test card. Be careful not to contaminate the remaining test circles. Use new tip and spreader for each sample. Carefully label each sample with a patient name or number

- Attach dispensing needle to a syringe. Shake antigen.* Draw up enough antigen for the number of tests done (one drop per test).
- Holding the syringe vertically, allow exactly one drop of antigen to fall onto each test sample. Do not stir.
- Rotate the test card smoothly on the palm of the hand for 8 minutes (or rotate on a mechanical rotator.)

Interpreting results

After 8 minutes rotation, inspect the card in good light. Turn or tilt the card to see whether there is clumping (reactive result). Test cards include negative and positive control circles for comparison.

Example test card	1. Non-reactive (no clumping or only slight roughness): Negative for syphilis 2. Reactive (highly visible clumping): Positive for syphilis 3. Weakly reactive (minimal clumping): Positive for syphilis Note: Weakly reactive can also be more finely granulated and difficult to see than this illustration
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* Make sure antigen was refrigerated (not frozen) and has not expired.

If RPR positive:

- Enquire if the woman and her partner have received proper treatment.
- If not, treat woman and partner for syphilis with benzathine penicillin.
- Treat newborn with benzathine penicillin.
- Follow-up newborn in 2 weeks.
- Counsel on safer sex.

Correlation and confirmation of test results

- Syphilis tests detect antibodies, which are evidence of current or past infection. Syphilis tests are not needed to diagnose patients with genital ulcers (who should be managed using Flowchart).

- Non-treponemal tests (such as RPR and VDRL) are the preferred tests for screening. These tests detect almost all cases of early syphilis, but false positives are possible. RPR can be performed without a microscope.

Treponemal tests, such as Treponema pallidum haemagglutination test (TPHA), fluorescent Treponema antibody absorption test (FTA-Abs), microhaemagglutination assay for antibodies to Treponema pallidum (MHA-TP), if available, can be used to confirm non-treponemal test results.

Quantitative RPR titres can help evaluate the response to treatment.

The following table can be used to interpret syphilis test results.

Note: where additional tests are not available, all patients with reactive RPR or VDRL should be treated.

Interpreting serological test results

	RPR	RPR titre	TPHA
Active infection	+	>1:8	+
Latent syphilis	+	Often <1:4	+
False positive	+	Usually <1:4	-
Successful treatment	+ or -	2 titres decrease (e.g. from 1:16 to 1:4)	+

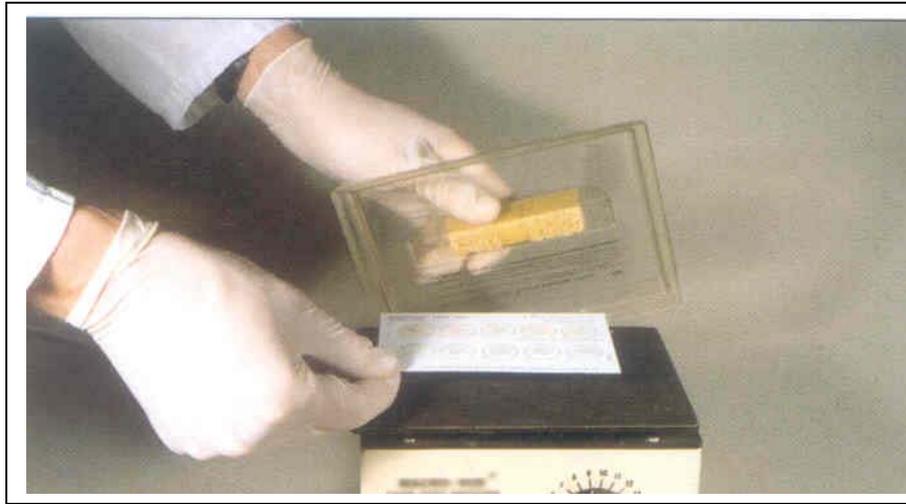


Fig :Test serum is mixed with antigen and the card is placed on appropriate rotator

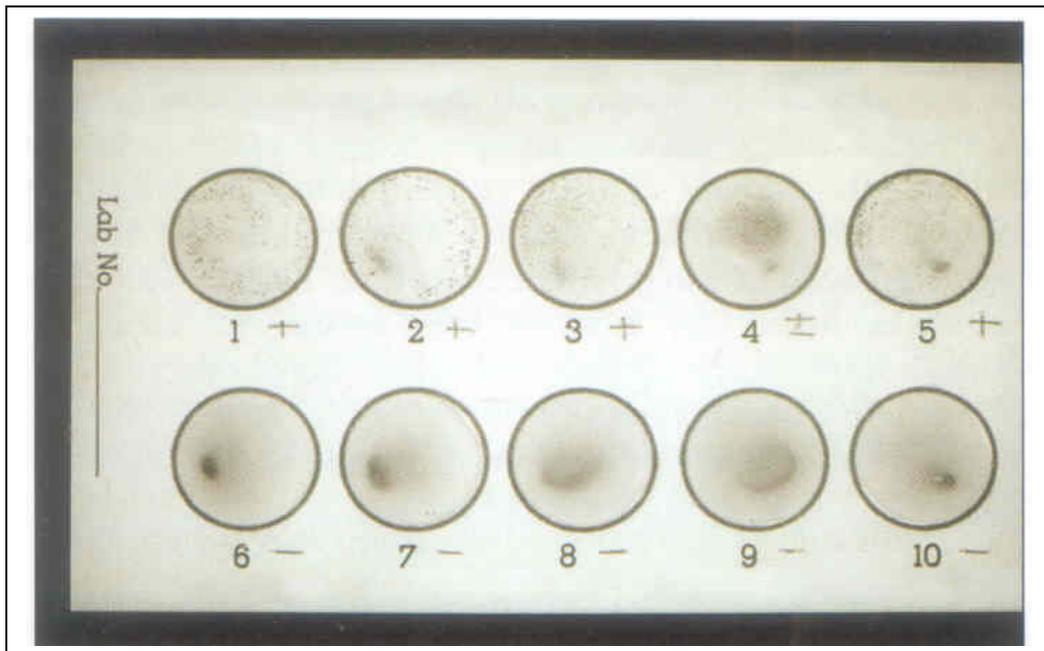
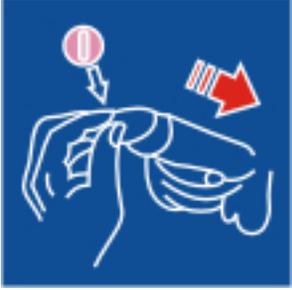


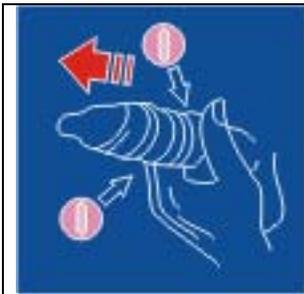
Fig: Reading RPR results for 10 undiluted sera showing reactive and non reactive samples. The presence of small to large flocculated clumps indicates reactivity, whereas no clumping or a very slight roughness indicates non-reactivity

Condom and Its proper usage technique

Promotion of the use of condoms and ready accessibility of condoms is important for the control of STIs and HIV. Management of STIs includes counseling on preventive measures and use of condoms. All health facilities providing STI services must always have in stock the essential drugs and condoms. The necessity of using condoms must be explained to the patients along with the advice on the treatment schedule and important for compliance of the full course of medicines prescribed.

How to use a male condom

	<p>Step-1: Open Package</p> <ul style="list-style-type: none">• Use a new condom each time you have sex• Check that it has not expired and that the packaging has no holes by pressing the pack between your fingers• Push condom to one side of package to allow room to tear open other side• Remove condom carefully• Do NOT use finger nails, teeth or sharp objects to open package or remove condom
	<p>Step-2: Put it on</p> <ul style="list-style-type: none">• Squeeze closed top end of condom to make sure no air is inside (can make it break)• Place condom over top of erect penis• With other hand, unroll condom gently down the full length of your penis (one hand still squeezing top end)
	<p>Step-3: During sex</p> <ul style="list-style-type: none">• Make sure condom stays in place• If it comes off, withdraw your penis and put on a new condom before intercourse continues• Once sperm has been released into condom (ejaculation), withdraw the erect penis and HOLD the condom in place on penis



Step-4: Dispose of condom

- Remove condom ONLY when penis is fully withdrawn
- Keep both penis and condom clear from contact with your partners body
- Knot the end of the used condom



- Place in tissue or bag before throwing it in dustbin
- Do NOT flush condoms down the toilet. It will block the system

**National Guidelines
on
Prevention, Management and Control
of
Reproductive Tract Infections
including
Sexually Transmitted Infections**

**National AIDS Control
Organisation**

**Maternal Health
Division**

**Ministry of Health & Family Welfare
Government of India**

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