

IPPF Medical Bulletin

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This Statement was revised by the International Medical Advisory Panel (IMAP) at its meeting in November 2006.

Introduction

Reproductive tract infections (RTIs) and sexually transmitted infections (STIs) are infections which primarily affect the genital tract and are among the most common causes of illness around the world. Left untreated, RTIs/STIs have serious health, social, and economic consequences. They are among the most important causes of maternal mortality, and their presence facilitates both acquisition and transmission of human immunodeficiency virus (HIV). The World Health Organization estimates that over 340 million new cases of four curable STIs occur every year – syphilis (*Treponema pallidum*), gonorrhoea (*Neisseria gonorrhoeae*), chlamydia (*Chlamydia trachomatis*) and trichomoniasis (*Trichomonas vaginalis*). If viral STIs such as those due to human papillomavirus (HPV), herpes simplex virus (HSV), and HIV infections are included, the number of new cases may be three times higher. The prevalence of RTIs/STIs is highest in developing countries, and within countries women and young people are particularly vulnerable.

This Statement deals primarily with the prevention and management of RTIs/STIs, not including HIV. Detailed guidance on HIV and AIDS is provided in the following IMAP Statements:

- HIV infection and AIDS: an overview. *IPPF Med Bull* 2005; **39**(2): 1–4.
- Management of HIV infection within sexual and reproductive health services. *IPPF Med Bull* 2005; **39**(1): 1–6.

Definition

RTIs/STIs can be divided into three categories:

- *Sexually transmitted infections* include gonorrhoea, chlamydia, syphilis, chancroid, trichomoniasis, genital herpes, genital warts, and HIV. Some STIs reach organs beyond the reproductive tract, such as brain, heart, and bones in the case of syphilis, the immune system in the case of HIV infection, and joints in the case of gonorrhoea
- *Endogenous infections* (eg, bacterial vaginosis, candidosis) result from overgrowth of organisms normally present in the vagina and are not transmitted sexually
- *Iatrogenic infections* result from procedures performed on the reproductive tract (eg, during normal delivery, treatment of miscarriage, induced abortion, insertion of an intrauterine device, or gynaecological surgery). In men, urethritis can result from procedures such as cystoscopy performed under unsterile conditions.

Detailed guidelines on infection prevention and control measures are available in the *IPPF Medical and Service Delivery Guidelines for Sexual and Reproductive Health Services, 2004*.

The spread of STIs is influenced by sexual behaviour, partner notification, the availability of facilities for early diagnosis and treatment, and the virulence and chemosensitivity of the causal organisms.

Left untreated, RTIs/STIs can cause long-term morbidity in both men and women. In women pelvic inflammatory disease (PID) can result in infertility, chronic pelvic pain, and adverse pregnancy outcomes such as ectopic pregnancy, late spontaneous abortion, preterm delivery, and stillbirth. Further information on STIs during pregnancy is provided in the section on “special populations”. Cervical cancer is an additional risk associated with HPV.

Syphilis, gonorrhoea, and chlamydia can all be successfully treated. However, the increasing resistance of gonorrhoea to antibiotics is a concern, and chlamydia can be difficult to diagnose. There is no cure for HPV and HSV infections, though genital herpes antiviral treatment (intermittent or continuous suppressive) can be of symptomatic benefit.

RTIs/STIs carry social stigma and infected individuals may suffer discrimination within their communities. The presence of an RTI/STI may also be a cause for partner discord and violence.

RTIs/STIs are often not recognised until they have progressed to serious complications. As many as 70% of infected women and 30% of infected men are either symptom-free or do not recognise that their symptoms are due to an infection. Even those who suspect they have an STI may not seek care, because they do not appreciate its possible serious consequences, because they are too embarrassed, because they fear stigmatisation, or simply because they lack access to services.

Signs and symptoms

Different infectious agents can produce similar symptoms. Service providers must be able to recognise the symptoms and signs of common RTIs/STIs.

Chlamydia is the most common STI. Symptoms are not always apparent but they include, in women, lower abdominal pain, bleeding after intercourse or between periods, vaginal discharge, and dysuria (pain on passing urine), and in men testicular pain, urethral discharge, and dysuria.

Gonorrhoea can present with yellow/green vaginal discharge, dysuria, lower abdominal pain, or (more rarely) bleeding between periods or unusually heavy periods. In men the usual presenting features are yellow/green urethral discharge and dysuria.

Syphilis starts as a lump which evolves into a painless ulcer. This primary lesion, usually in the anogenital area but sometimes elsewhere, lasts for around six weeks. Thereafter, a general feeling of unwellness may ensue, with fever, headache, sore throat, rash, shallow ulcers in the mouth, and generalised lymphadenopathy; wart-like growths may develop in moist areas such as the perineum. In untreated cases, a tertiary stage can affect the central nervous system and almost any other organ of the body.

Genital herpes is due mainly to HSV-2 but also to HSV-1. Typically

it causes recurrent episodes of ulceration or sores in the anogenital area; in some individuals, however, the signs and symptoms are so mild that the infection is not recognised. The first lesions usually appear within two weeks of virus acquisition and heal in two to four weeks. Other manifestations during the primary episode can include fever, headache, swollen glands, and a second crop of sores. Subsequent skin outbreaks tend to be less severe and of shorter duration and the frequency declines over time.

Trichomonas usually presents with a foul-smelling yellow or white vaginal discharge, together with dysuria and vulvar tenderness. Patchy haemorrhages may be seen on the vaginal wall and on the endocervix. In women, other common symptoms are pelvic pain and discomfort on intercourse. In men symptoms are either absent or slight – mild dysuria with or without urethral discharge. Panel 1 summarises the signs and symptoms of common RTIs/STIs.

Panel 1 Signs and symptoms of common RTIs/STIs	
Sign/symptom	RTI/STI
Vaginal discharge/itching	Chlamydia, gonorrhoea, trichomonas
Urethral discharge/itching	Chlamydia, gonorrhoea, trichomonas
Pain and bleeding after intercourse or between periods	Chlamydia, gonorrhoea
Burning/ pain during urination	Chlamydia, trichomonas
Lower abdominal pain	Chlamydia, gonorrhoea
Swollen or painful testicles	Chlamydia, gonorrhoea
Wart-like growths in genital and anal region	Syphilis
Blisters, sores, or ulcers, itching and tingling in anogenital area	Genital herpes

Prevention

The most important strategy for the control of RTIs/STIs is reduction of exposure to unsafe sex. A comprehensive approach includes prevention of sexually transmitted, iatrogenic, and endogenous infections. As the main point of contact for many clients who seek advice on sexual and reproductive health, Member Associations are well placed to take a lead in the prevention of RTIs/STIs by providing accurate information in a non-judgmental way and by advocating low-risk sexual behaviour.

People need to be aware of the signs, symptoms, and risks of these infections and to have the confidence to seek early treatment when it is required. They should also know that STIs commonly exist without symptoms and that the likelihood of infection increases with number of sexual partners, on both sides of the couple. Educational efforts do not have to be confined to clinics; community-based workers can include STI prevention in their outreach activities.

Prompt recognition and effective treatment of STIs not only reduces the probability of complications for the individual but also prevents new infections in the community. The sooner an STI is cured, the less chance that it will be transmitted to others.

The risk of iatrogenic infections can be reduced by observing strict infection control procedures such as proper disinfection of instruments, including vaginal specula.

Screening for symptomless infection has great potential to reduce the prevalence of STIs. An effective programme requires identification of the population at risk, high uptake, appropriate treatment and partner notification, and repeat screening at regular intervals.

Viruses

Hepatitis B

In developed countries hepatitis B is most often transmitted sexually, whereas in the developing world the most frequent routes are perinatal and child-to-child. Vaccines against this virus are highly effective and by 2005 were included in the immunisation schedules of 158 countries, with global coverage approaching 60% of infants.

Human papillomavirus

A quadrivalent vaccine (Gardasil) that protects against HPV types 6, 11, 16, and 18 is now available. Together, these types cause 70% of cervical cancers and 90% of genital warts. A bivalent vaccine (Cervarix), directed against types 16 and 18, is in advanced clinical testing. Gardasil, currently licensed for females only, provides no protection against other genotypes or in persons already infected. This vaccine is very expensive, and even in well-resourced countries there are social and logistical obstacles to be overcome before wide application – notably, the need to administer it before sexual debut.

Other

Vaccines against HSV-1 and HSV-2 are under assessment.

Special populations

Pregnant women

In pregnancy, syphilis, gonorrhoea, chlamydia, trichomoniasis, and genital herpes can all adversely affect the outcome by predisposing to preterm delivery, low birthweight, and neonatal infection. The agents of both gonorrhoea and chlamydia, if transmitted directly into the baby's eye, can result in blindness.

Among endogenous infections, bacterial vaginosis is likewise associated with preterm labour. Candidosis, by contrast, has no such adverse effects; nevertheless, if this common condition causes unpleasant symptoms it requires treatment.

Upper genital tract infection, sometimes life-threatening, can be a complication of spontaneous or induced abortion, preterm rupture of membranes, or childbirth. In the long term such infections can result in infertility.

All pregnant women and their sex partner(s) should be asked about STIs, counselled about the hazard to themselves and the baby, and offered screening and treatment where these are indicated. Serotesting for syphilis should be done as early as possible, preferably before the end of the first trimester. Pregnant women with a history of spontaneous abortion or preterm delivery should be screened for bacterial vaginosis and trichomoniasis.

The presence of a viral STI such as HIV or HSV-2 will influence the birth plan. After the birth, discussion of contraceptive options should include the prevention of RTI/STI.

Young people

Worldwide, the highest reported rates of STIs are in people aged 15–24, young women being worse affected than young men (for reasons that include gender-based inequalities). Factors that influence risk include frequency and type of sexual intercourse, number and characteristics of sexual partners, extent of condom use, the occurrence of violence, and the local epidemiology of STIs.

Providers should be ready to discuss STIs with this client group, and to give information not only on risk-reducing behaviours and practices but also on the common RTI/STI symptoms that should prompt attendance for diagnosis and treatment. The correct and consistent use of condoms should be emphasised. Thorough, non-judgmental, counselling is particularly important for young people, who are not always ready to acknowledge that they engage in high-risk behaviours.

Children

The management of children who have an STI requires close cooperation between clinicians and child protection authorities. STIs such as gonorrhoea, syphilis, and chlamydia are highly suggestive of sexual abuse. Evaluation demands a well-trained health-care provider, through referral if necessary.

Men who have sex with men (MSM)

Many MSM will immediately disclose their sexual orientation but some may choose not to do so. Young men are particularly in need of a respectful listener with whom they can discuss their sexual orientation and practices. MSM should routinely be offered STI risk assessment and counselling directed towards safer sex with future partners, male or female.

Women who have sex with women (WSW)

Few data are available on the risk of STIs conferred by sex between women. Transmission risk is likely to vary according to the specific STI and sexual practices. HPV can be transmitted by skin-to-skin or skin-to-mucosa contacts of the sort that can occur during sex between women; therefore, such women should not be excluded from cervical cancer screening – quite apart from the fact that most will have experienced sex with men. Like MSM, they should be offered risk assessment and counselling to encourage safer sexual practices with partners of either sex.

Sex workers

Sex workers, whether male, female, or transgender, are likely to be exposed to STIs through their work. Such workers should routinely be offered STI/HIV risk assessment, screening, and preventive counselling. Risk assessment should take into consideration their sexual behaviour not only with clients but also with their regular partners. In some circumstances it may be possible to organise special educational sessions and health promotion activities for this group.

The clients of sex workers, though difficult to identify, are an important target for STI interventions. Any man who reports multiple sexual partners should be offered STI screening.

People living with HIV

In HIV-positive persons, because of their immunodeficiency, viral STIs tend to be frequent and severe; thus, treatment and prophylaxis should be offered where available.

In populations with a high HIV prevalence, clients presenting with STIs are at excess risk of being HIV-positive; moreover, the STI increases the risk that they will transmit HIV to their partner(s). Therefore, all clients with a STI who do not know their HIV status should be referred for counselling and testing.

Timely access to good-quality STI services, as well as risk assessments and STI screening for people living with HIV, should be an integral part of sexual and reproductive health services.

Approach to management

There are two primary levels of management for RTIs/STIs, depending on the knowledge and skills of service providers, adherence to treatment guidelines, and the availability of laboratory facilities and commodities. Where healthcare resources are limited and there are no laboratory facilities, Member Associations should consider the syndromic approach as the first line of treatment, special cases being referred to existing clinics with laboratory facilities.

Syndromic management

The syndromic approach bases treatment on groups of symptoms (client complaints) and signs (client and provider observations) that may be caused by one or more possible infections. These groups are called syndromes. Treatment is then offered for all infections that could cause that syndrome. Flow charts and accompanying

guidance provide step-by-step instructions on how to manage RTIs/STIs, including client follow-up. The syndromic approach may also include a risk assessment for STIs, based on locally validated risk factors.

The most common RTI/STI syndromes are:

- Urethral discharge
- Genital ulcers
- Vaginal discharge
- Lower abdominal pain.

The major advantage of the syndromic approach is that treatment can be started immediately; a disadvantage is that does not apply to infections that are causing no symptoms.

The syndrome of vaginal discharge illustrates why this approach is less than ideal. In a general reproductive health setting this is the most common syndrome, yet it will seldom be due to gonorrhoea or chlamydia; moreover, many women with these same infections have no discharge. Therefore, although syndromic treatment will cure STIs when these are the cause, women with abnormal vaginal discharge should whenever feasible undergo specific laboratory tests.

Clinical management plus laboratory tests (aetiological diagnosis)

For any laboratory facility to be cost-effective it must have well trained staff and proper equipment. Otherwise, the test results may be so unreliable that clients are better managed by the syndromic approach alone.

Convenience to the client is an important consideration, so the number of visits should be kept to a minimum. If the policy is to defer treatment until the laboratory results are known, a client who does not return will remain untreated. Therefore, even where laboratory facilities are available, it may sometimes be advisable to start treatment immediately, based on the syndromic approach.

Good laboratory facilities are costly in terms of physical facilities, equipment, and staff. For maximum cost-effectiveness, service delivery sites with laboratory facilities should be used mainly as referral centres for special cases.

Information to clients

Clients should be urged to take the complete course of treatment even if the symptoms disappear. They should also be advised to abstain from sexual intercourse until partners have been treated, and to use condoms in future to reduce risk of reinfection. All clients treated for RTIs or STIs should be encouraged to return for follow-up, to ensure that treatment has been successful.

Partner notification

Partner notification includes not only warning of possible exposure but also presumptive treatment and advice on how to avoid infection in the future (to the possible benefit, also, of the original client).

Partners can be informed and offered treatment by the client, by the service provider, or by a combined strategy. The provider should seek an approach to which the client gives full consent and collaboration. Partner notification, though highly desirable, is not mandatory.

Partner notification reduces the risk of reinfection and persistent infection at individual level but the benefits are less evident at population level. Clients should be counselled on how to protect their partner(s) as well as themselves against STIs.

When an STI is diagnosed and treatment has been offered (either on site or by referral to a suitable alternative agency), the client should be advised to refer his or her sexual partner(s) for assessment. When the partner comes to the clinic, he or she should be treated for the STI diagnosed in the original client. If the clinic

has access to suitable facilities, samples should be taken at this time for laboratory tests (including other RTIs/STIs).

If there is a possibility that notification will engender violence or seriously disrupt the relationship, preventive action should be taken. Providers should be trained to create an environment favourable to disclosure, including counselling techniques.

Contraceptive methods and protection against RTIs/STIs

When a client seeks advice on contraceptive options, RTI/STI prevention should be part of the discussion. In making recommendations, service providers should take into account the sexual history and behaviour of the client.

Condoms

Clients should be advised that the male latex condom, when used consistently and correctly, has high efficacy against the transmission and acquisition of STIs, including HIV. Condoms should be used whenever there is a risk of STI transmission, even if another form of contraception is already being used. Clients should be given clear instructions on the proper use of the method, including a demonstration, together with advice on lubrication, storage, and handling.

The female condom is an alternative for women who want protection against STIs when a male condom is not useable. Drawbacks are its limited acceptability and high cost.

Other methods

Clients should be advised that no other form of contraception (hormonal, intrauterine device, sterilisation) gives substantial protection against STIs. The correct and consistent use of condoms should be recommended in addition to these methods whenever there is a risk of infection.

Spermicides

Frequent exposure to nonoxynol-9 (N9) and possibly other spermicides, can increase the risk of HIV infection. Therefore, where the aim is to achieve some protection of HIV together with contraception, products containing N-9 are not recommended. This applies to spermicides used either alone or with the diaphragm or cap, to condoms lubricated with N9, and to the use of N9 as a lubricant for anal intercourse. It is not yet known whether the diaphragm when used without spermicides, give any protection against STIs/HIV.

Hormonal contraceptives

Hormonal contraceptives reduce the risk of acute pelvic inflammatory disease, possibly by thickening cervical mucus and thus preventing the ascent of bacteria. With chlamydia, oral contraceptives increase the risk of cervical infection but do not affect upper genital tract (tubal) infection.

Intrauterine devices (IUDs)

For a woman who with proper screening is found to be at low risk of STI and in whom the IUD is inserted with correct technique, the risk of pelvic inflammatory disease is as low as 1 in 1000. When it does occur, pelvic inflammatory disease nearly always presents within four weeks after insertion.

The risk of infection after IUD insertion depends on factors such as background STI prevalence, resources, skills of providers, and conditions under which the procedure is performed. In settings where prevalence of cervical infection is low, the risk of introducing infection to the upper genital tract is very slight.

Emergency contraception

Emergency contraception does not protect against STIs. Women who have had unprotected intercourse should be advised about the possibility of STIs. Those who may have been exposed to STIs should be offered testing or presumptive treatment for the commonly occurring STIs, together with counselling.

What can Member Associations do?

IPPF Member Associations are well placed to integrate RTI/STI services into their service delivery programmes. What they can offer will depend on national contexts and circumstances, existing services, and financial and human resources; the minimum is education for prevention and referral to adequate facilities. Specific activities may include the following:

Prevention

- Being aware of the prevalence and incidence of particular RTIs/STIs in their locality and among their clients
- Educating clients and communities about prevention and the recognition of the signs and symptoms of RTIs/STIs
- Providing RTI/STI counselling and information with an emphasis on delaying sexual debut, safer sexual behaviour, condom promotion (male and female), negotiation skills, dual protection, and significance of screening for non-symptomatic STIs
- Being aware of the legal requirements and implications of partner notification for clients and providers
- Following strict infection prevention procedures to prevent the risk of iatrogenic infections.

Management and treatment

- Regular training and orientation for service providers on the detection, treatment, and management of RTIs/STIs, including counselling and interpersonal communication skills
- Ensuring adequate supplies of commodities such as drugs and diagnostic tests for management (syndromic or specific) of common RTIs/STIs
- Ensuring the availability of locally validated counselling and educational materials for clients
- Ensuring a sufficient and regular supply of male and female condoms for contraceptive purposes and for RTI/STI prevention
- Continuously monitoring the quality of RTI/STI services
- Ensuring that staff maintain non-judgmental attitudes towards clients with RTIs/STIs
- Establishing effective referral links within their own service network and with other organisations.

Advocacy

- Raising awareness among community leaders and the public about the public-health impact of RTIs/STIs
- Highlighting the need for research on the incidence, causes, prevention, and treatment of RTIs/STIs, and where appropriate, participation in such research.