

ANNEX 2

Global strategy for the prevention and control of sexually transmitted infections, 2006-2015¹

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¹ See resolution WHA59.19.

1. SEXUALLY TRANSMITTED INFECTIONS: A PUBLIC HEALTH PROBLEM

1.1 The global burden

More than 30 bacterial, viral and parasitic pathogens are transmissible sexually. While sexually transmitted infections are mostly transmitted through sexual intercourse, transmission can occur also from mother to child during pregnancy and childbirth, and through blood products or tissue transfer, as well as occasionally through other non-sexual means. Including human immunodeficiency virus (HIV) infection that leads to acquired immunodeficiency syndrome (AIDS), they have been recognized as a major public health problem for many years. Some of the commonest sexually transmitted pathogens and the diseases they cause are shown in Table 1.

It is estimated that more than 340 million new cases of curable sexually transmitted infections, namely those due to *Treponema pallidum* (syphilis), *Neisseria gonorrhoeae*, *Chlamydia trachomatis* and *Trichomonas vaginalis*, occur every year throughout the world in men and women aged 15–49 years, with the largest proportion in the region of south and south-east Asia, followed by sub-Saharan Africa, and Latin American and the Caribbean. Millions of viral sexually transmitted infections also occur annually, attributable mainly to HIV, human herpesviruses, human papillomaviruses and hepatitis B virus. Globally, all these infections constitute a huge health and economic burden, especially for developing countries where they account for 17% of economic losses caused by ill-health.

- Herpes simplex virus type 2 infection is the leading cause of genital ulcer disease in developing countries. Data from sub-Saharan Africa show that 30% to 80% of women and 10% to 50% of men are infected. Among women in central and south America, prevalence ranges from 20% to 40%. In the developing Asian countries, its prevalence in the general population ranges from 10% to 30%. In the United States of America, the prevalence of the viral infection among 14–49-year-olds is 19%, and throughout the world, seropositivity rates are uniformly higher in women than in men and increase with age. Herpes simplex virus type 2 infection plays an important role in the transmission of HIV. A study in Mwanza (United Republic of Tanzania), showed that 74% of HIV infections in men and 22% in women could be attributable to the presence of herpes simplex virus type 2.
- Human papillomavirus, another important sexually transmitted viral pathogen, causes about 500 000 cases of cervical cancer annually with 240 000 deaths, mainly in resource-poor countries.
- Hepatitis B virus, which may be transmitted sexually and through needle sharing, blood transfusion and from mother to child, results in an estimated 350 million cases of chronic hepatitis and at least one million deaths each year from liver cirrhosis and liver cancer. A vaccine to prevent hepatitis B virus infection, and thereby reduce the incidence of liver cancer, exists.

Given social, demographic and migratory trends, the population at risk for sexually transmitted infections will continue to grow dramatically. The burden is greatest in the developing world, but industrialized nations can also be expected to experience an increased burden of disease because of the prevalence of non-curable viral infections, trends in sexual behaviour and increased travel. The socioeconomic costs of these infections and their complications are substantial, ranking among the top 10 reasons for health-care visits in most developing countries, and substantially drain both national health budgets and household income. Care for the sequelae accounts for a large proportion of tertiary health-care costs in terms of screening and treatment of cervical cancer, management of liver disease, investigation for infertility, care for perinatal morbidity, childhood blindness, pulmonary disease in

Table 1
Main sexually transmitted pathogens and the diseases they cause

Pathogen	Clinical manifestations and other associated diseases
Bacterial infections	
<i>Neisseria gonorrhoeae</i>	GONORRHOEA Men: urethral discharge (urethritis), epididymitis, orchitis, infertility Women: cervicitis, endometritis, salpingitis, pelvic inflammatory disease, infertility, preterm rupture of membranes, perihepatitis Both sexes: proctitis, pharyngitis, disseminated gonococcal infection Neonates: conjunctivitis, corneal scarring and blindness
<i>Chlamydia trachomatis</i>	CHLAMYDIAL INFECTION Men: urethral discharge (urethritis), epididymitis, orchitis, infertility Women: cervicitis, endometritis, salpingitis, pelvic inflammatory disease, infertility, preterm rupture of membranes, perihepatitis; commonly asymptomatic Both sexes: proctitis, pharyngitis, Reiter's syndrome Neonates: conjunctivitis, pneumonia
<i>Chlamydia trachomatis</i> (strains L1-L3)	LYMPHOGRANULOMA VENEREUM Both sexes: ulcer, inguinal swelling (bubo), proctitis
<i>Treponema pallidum</i>	SYPHILIS Both sexes: primary ulcer (chancre) with local adenopathy, skin rashes, condylomata lata; bone, cardiovascular and neurological damage Women: pregnancy wastage (abortion, stillbirth), premature delivery Neonates: stillbirth, congenital syphilis
<i>Haemophilus ducreyi</i>	CHANCROID Both sexes: painful genital ulcers; may be accompanied by bubo
<i>Klebsiella (Calymmatobacterium) granulomatis</i>	GRANULOMA INGUINALE (DONOVANOSIS) Both sexes: nodular swellings and ulcerative lesions of the inguinal and anogenital areas
<i>Mycoplasma genitalium</i>	Men: urethral discharge (nongonococcal urethritis) Women: bacterial vaginosis, probably pelvic inflammatory disease
<i>Ureaplasma urealyticum</i>	Men: urethral discharge (nongonococcal urethritis) Women: bacterial vaginosis, probably pelvic inflammatory disease
Viral infections	
Human immunodeficiency virus	ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS) Both sexes: HIV-related disease, AIDS
Herpes simplex virus type 2	GENITAL HERPES
Herpes simplex virus type 1 (less commonly)	Both sexes: anogenital vesicular lesions and ulcerations Neonates: neonatal herpes (often fatal)
Human papillomavirus	GENITAL WARTS Men: penile and anal warts; carcinoma of the penis Women: vulval, anal and cervical warts, cervical carcinoma, vulval carcinoma, anal carcinoma Neonates: laryngeal papilloma
Hepatitis B virus	VIRAL HEPATITIS Both sexes: acute hepatitis, liver cirrhosis, liver cancer
Cytomegalovirus	CYTOMEGALOVIRUS INFECTION Both sexes: subclinical or nonspecific fever, diffuse lymph node swelling, liver disease, etc.
Molluscum contagiosum virus	MOLLUSCUM CONTAGIOSUM Both sexes: genital or generalized umbilicated, firm skin nodules
Kaposi sarcoma associated herpes virus (human herpes virus type 8)	KAPOSI SARCOMA Both sexes: aggressive type of cancer in immunosuppressed persons
Protozoal infections	
<i>Trichomonas vaginalis</i>	TRICHOMONIASIS Men: urethral discharge (nongonococcal urethritis); often asymptomatic Women: vaginosis with profuse, frothy vaginal discharge; preterm birth, low birth weight babies Neonates: low birth weight
Fungal infections	
<i>Candida albicans</i>	CANDIDIASIS Men: superficial infection of the glans penis Women: vulvo-vaginitis with thick curd-like vaginal discharge, vulval itching or burning
Parasitic infestations	
<i>Phthirus pubis</i>	PUBIC LICE INFESTATION
<i>Sarcoptes scabiei</i>	SCABIES

children and chronic pelvic pain in women. The social costs include conflict between sexual partners and domestic violence. The costs increase further when the cofactor effect of other sexually transmitted infections on HIV transmission is taken into consideration.¹

1.2 Why invest in prevention and control of sexually transmitted infections now?

1.2.1 To reduce related morbidity and mortality

Infections with sexually transmitted pathogens other than HIV impose an enormous burden of morbidity and mortality in both resource-constrained and developed countries, both directly, through their impact on quality of life, reproductive health and child health, and indirectly, through their role in facilitating the sexual transmission of HIV and their impact on national and individual economies.

The spectrum of health consequences ranges from mild acute illness to painful disfiguring lesions and psychological morbidity. For example, infection with *N. gonorrhoeae* causes painful micturition in men, and acute or chronic lower abdominal pain in women. Without treatment, infection with *T. pallidum*, although painless in the early stages, can result in neurological, cardiovascular and bone diseases later in life, and fetal loss in pregnant woman with acute infection. Chancroid causes disabling painful ulcers which can result in extensive tissue destruction if treatment is delayed beyond a few days, particularly in immunocompromised persons. Genital herpes infection causes substantial psychosexual suffering because of its recurrent and painful nature, especially in young people.

In addition, there is a large economic burden and loss of productivity to individuals and nations as a whole. The associated costs include direct costs, both medical and nonmedical, for care and materials, and indirect costs of time spent sick, when an individual is unable to engage in productive activities (travelling to obtain cure, waiting in the health facility for care, and undergoing a procedure such as specimen collection). The magnitude of the global burden of infections with sexually transmitted pathogens other than HIV is such that they should be controlled in their own right as a public health problem.

1.2.2 To prevent HIV infection

Preventing and treating other sexually transmitted infections reduce the risk of sexual transmission of HIV, especially among populations who are most likely to have a high number of sex partners, such as sex workers and their clients. The presence of an untreated inflammatory or ulcerative sexually transmitted disease increases the risk of transmission of HIV during unprotected sex between an infected and an uninfected partner. The cofactor effect of other such infections on HIV transmission seems to be higher with the ulcerative diseases: recent evidence indicates that genital herpes may be responsible for fuelling a large proportion of new HIV infections, and suppressive treatment of herpes simplex virus type 2 infection reduces genital shedding of HIV in women. Genital ulcers or a history of such diseases have been estimated to increase the risk of transmission of HIV 50–300-fold per episode of unprotected sexual intercourse.

¹ Globally, the predominant mode of transmission of HIV is sexual, which makes it a sexually transmitted infection, even though there are other modes through which the virus can be transmitted. Over the years, numerous epidemiological and biological studies have provided evidence that other sexually transmitted infections, if present in a person, act as cofactors for HIV acquisition or transmission, which has led to the common statement “sexually transmitted infections facilitate the transmission of HIV”. This can give the impression that HIV is itself not a sexually transmitted infection. In this document, whenever the phrase “sexually transmitted infections facilitate HIV transmission” is used, it should be understood that these are sexually transmitted infections other than HIV. Where more clarity is needed, the phrases “other sexually transmitted infections” or “sexually transmitted infections other than HIV” are used. In general, strategies and interventions that prevent the transmission of HIV work equally as well for the other sexually transmitted infections.

Services providing care for sexually transmitted infections are one of the key entry points for HIV prevention. Patients seeking such care are a key target population for prevention counselling and voluntary and confidential testing for HIV, and may be in need of care for HIV and AIDS. Patients attending health clinics for care for sexually transmitted infections may have primary HIV infection at the same time, and they usually have high HIV viral load. HIV shedding in semen increased six-fold in men with gonococcal urethritis in Malawi. Following treatment for the urethritis, the seminal viral load was reduced to levels similar to those of HIV-infected men without urethritis. A recent study in the United States of America of 52 HIV-infected men with primary or secondary syphilis, 58% of whom were receiving antiretroviral therapy, showed that syphilis is associated with significant increases in plasma viral load and significant decreases in the CD4⁺ cell count. Syphilis treatment restored immunity to pre-infection levels, findings that underscore the importance of preventing and promptly treating syphilis in HIV-infected individuals both as a prevention strategy and to improve quality of care for persons living with HIV. Effective prevention messages, treatment for other sexually transmitted infections, and promotion of condoms in such a population could have a substantial impact on HIV transmission.

The Millennium Development Goal 6, target 7 calls on nations to have halted and begun to reverse the spread of HIV/AIDS by 2015. In the United Republic of Tanzania, scientifically rigorous methods demonstrated that treatment of sexually transmitted infections could reduce the sexual transmission of HIV in a highly cost-effective manner: improved syndromic management of such infections reduced HIV incidence by 38% in a community intervention trial in Mwanza. Results of that trial can probably be generalized to other populations where the HIV epidemic is concentrated, most HIV infections are acquired from casual partners, and the prevalence of treatable sexually transmitted infections is high. Their treatment is, therefore, one of the interventions that feasibly and cost-effectively contribute towards the attainment of target 7.

1.2.3 To prevent serious complications in women

Sexually transmitted infections are the main preventable cause of infertility, particularly in women. Between 10% and 40% of women with untreated chlamydial infection develop symptomatic pelvic inflammatory disease. Post-infection tubal damage is responsible for 30% to 40% of cases of female infertility. Furthermore, women who have had pelvic inflammatory disease are 6 to 10 times more likely to develop an ectopic (tubal) pregnancy than those who have not, and 40% to 50% of ectopic pregnancies can be attributed to previous pelvic inflammatory disease.

Millennium Development Goal 5, target 6 seeks to reduce maternal mortality by three quarters by 2015. Prevention of pelvic inflammatory disease will contribute to this goal by preventing the death toll related to ectopic pregnancy. Prevention of human papillomavirus infection will reduce the number of women who die from cervical cancer, the second most common cancer in women after breast cancer.

1.2.4 To prevent adverse pregnancy outcome

Untreated sexually transmitted infections are associated with congenital and perinatal infections in neonates, particularly in the areas where rates of infection remain high.

In pregnant women with untreated early syphilis, 25% of pregnancies result in stillbirth and 14% in neonatal death – an overall perinatal mortality of about 40%. Syphilis prevalence in pregnant women in Africa, for example, ranges from 4% to 15%. Up to 35% of pregnancies among women with untreated gonococcal infection result in spontaneous abortions and premature deliveries, and up to 10% in perinatal deaths. In the absence of prophylaxis, 30% to 50% of infants born to mothers with untreated gonorrhoea and up to 30% of infants born to mothers with untreated chlamydial infection

will develop ophthalmia neonatorum, which can lead to blindness; worldwide, between 1000 and 4000 newborn babies become blind every year because of this condition.

Universal institution of an effective intervention to prevent congenital syphilis should prevent an estimated 492 000 stillbirths and perinatal deaths per year in Africa alone. In terms of cost-effectiveness, in Mwanza (United Republic of Tanzania), where the prevalence of active syphilis is 8% in pregnant women, the cost of the intervention is estimated to be US\$ 1.44 per woman screened, US\$ 20 per woman treated, and US\$ 10.56 per disability-adjusted life year saved. The cost per disability-adjusted life year saved from all syphilis-screening studies ranges from US\$ 4 to US\$ 19.

1.3 Opportunities for an accelerated response

1.3.1 A cost-effective intervention for HIV prevention

Improved case management of sexually transmitted infections is one of the interventions scientifically proven to reduce the incidence of HIV infection in the general population. If the interventions are targeted to a particular population group with a high likelihood of transmission, the cost-effectiveness becomes even more pronounced.

1.3.2 New partnerships

There is a renewed global resolve to fight the AIDS epidemic that includes a commitment to control sexually transmitted infections as a primary prevention strategy. The United Nations Declaration of Commitment on HIV/AIDS (June 2001) states that, while care, support and treatment are fundamental elements of an effective response, prevention must be the mainstay of responses to the AIDS pandemic, including early and effective treatment of those infections. New partners and sources of funding have emerged on the international development scene. These include powerful advocates, influential networks, communities, partners in non-health sectors, the commercial sector and philanthropic organizations. Funds can be mobilized through these new sources of funding, as well as through existing ones, to ensure an intensified response to all sexually transmitted infections.¹

A diverse range of interventions and the successful results from resource-limited settings as different as Thailand and Uganda, and from other countries such as Denmark, Sweden and the United Kingdom of Great Britain and Northern Ireland, indicate that sexually transmitted infections can be controlled, provided that sufficient political will and resources are mobilized in order to achieve and maintain activities at a necessary level. Collaboration between countries, and partnerships with interested agencies, facilitate the sharing of information and scaling up of successful lessons.

Interventions to prevent mother-to-child transmission of HIV can be linked with efforts to prevent congenital syphilis in order to avert the tragedy of babies who avoid HIV but die of syphilis, as was the case in Haiti. In addition, this linkage enhances the cost-effectiveness of the interventions.

¹ Some mechanisms available include the Global Fund to Fight AIDS, Tuberculosis and Malaria at national level, strategies and initiatives for expanding access to antiretroviral agents, the United States of America's President's Emergency Plan for AIDS Relief (providing US\$ 15 000 million, including US\$ 9000 million in new funding, to fight the HIV/AIDS pandemic over five years, with a focus on 15 of the hardest hit countries), and the World Bank multisectoral HIV/AIDS and sexually transmitted infection prevention projects.

1.3.3 New technologies for a strengthened response

Opportunities for innovative methods for the prevention, care and surveillance of sexually transmitted infections will result from technological advances in diagnostics, treatment, vaccines, and barrier methods.

Rapid diagnostic tests

- New point-of-care rapid treponemal tests enable screening for syphilis at the peripheral health post, and thus provision of treatment without delay.
- Nucleic acid amplification tests can be used to monitor infection trends and guide the adaptation of treatment protocols. Some tests can be used on easy-to-collect specimens, such as urine and self-administered vaginal swabs.
- A new generation of cheap, rapid diagnostic tests for chlamydial infection is under development.

Therapeutics

- Some medicines, for example, ciprofloxacin (where effective) and acyclovir, are becoming more affordable. Others, such as azithromycin and cefixime, which have the added advantage of single-dose administration, will become cheaper as their patents expire and procurement strategies for bulk purchasing are put in place. Penicillins have remained effective for the treatment of early syphilis and can be given as single-dose treatments, albeit by injection.

Vaccines

- Preventive vaccines against oncogenic types of human papillomavirus show great promise and will soon be available. The international community should work together with countries to plan and develop strategies for implementing and promoting their use in national immunization programmes in order to guarantee high coverage, especially in adolescents, so that people can be protected before they become sexually active.
- An effective vaccine against herpes simplex virus type 2 infection is not yet available. One vaccine, however, has shown promise in women with no prior exposure to type 1 or 2 of the virus. More field trials are needed to evaluate its utility in a variety of epidemiological settings. Given the high prevalence of herpes simplex virus type 2 infection and its importance in enhancing HIV transmission, a vaccine to prevent the spread of herpes simplex virus type 2 at an early age offers the most compelling hope. The international community, scientists, funding agencies and governments should join forces to plan and rapidly progress towards the development of effective vaccines against herpes simplex virus type 2 infection.
- A preventive vaccine against hepatitis B virus has been available since 1982. Countries should put in place plans for the prevention of hepatitis B and scale up the inclusion of the existing vaccine in immunization programmes in order to ensure that all children in all countries are immunized, and that all sexually active adults at high risk of hepatitis B virus infection have access to the vaccine.

1.3.4 A public health approach to prevention and control of sexually transmitted infections

Effective prevention and care can be achieved by use of a combination of responses. Services for prevention and for care of people with sexually transmitted infections should be expanded and embrace a public health package that includes the following elements:

- promotion of safer sexual behaviour
- promotion of early health-care-seeking behaviour
- introduction of prevention and care activities across all primary health-care programmes, including sexual and reproductive health and HIV programmes. Successful and cost-effective integrated programmes for sexually transmitted infection, HIV and tuberculosis control have been documented in several countries. The care is usually given by the same providers at the primary health centre level as those already delivering the primary health care. Such an approach is both attractive and cost-saving for client and health system alike.
- a comprehensive approach to case management that encompasses:
 - identification of the sexually transmitted infections syndrome;
 - appropriate antimicrobial treatment for the syndrome;
 - education and counselling on ways to avoid or reduce risk of infection with sexually transmitted pathogens, including HIV;
 - promotion of the correct and consistent use of condoms;
 - partner notification (see section 3.2.3 for more details).

To the extent possible, interventions and strategies should be evidence-based. By implementing and carefully evaluating innovative interventions, however, new evidence can be gathered to inform policies, programmes and scaling up. It is, therefore, important to apply the following concept: plan, do, assess and then (if successful) scale up. Innovative approaches in such a process include:

- periodic presumptive treatment: this short-term strategy has been shown to control certain sexually transmitted infections when targeted at specific population groups in appropriate settings
- social marketing of commodities for infection control: social marketing of pre-packed medicines or condoms (along with training in their correct and consistent use) for treatment and prevention has improved access to care for sexually transmitted infections in some places
- provision of user-friendly services for adolescents: experience has shown how to make services more responsive and acceptable to adolescents – countries should use this knowledge and experience to scale up appropriately-adapted interventions to suit each country or setting, and to reach as many adolescents as are in need
- male involvement and motivation, and services for men: pilot projects targeting men have been successful; the experience gained should be adapted to local conditions and activities should be scaled up

- second-generation HIV surveillance to cover also behaviour and sexually transmitted infections: such an approach will provide programmes with information on appropriate interventions to control all sexually transmitted infections.

1.3.5 Condom promotion to populations engaged in high-risk behaviours and to the general population

There has been sufficient evidence to show that condoms, when used correctly and consistently, are effective in protecting against the transmission of HIV to women and men. They also reduce the risk of men becoming infected with gonorrhoea from their sexual partners. Correct and consistent condom use is associated not only with reduced transmission of HIV and with reduced acquisition of urethral infection among men, but also with the reduced acquisition of the following:

- genital infection with herpes simplex virus type 2 by men and women;
- syphilis by men and women;
- chlamydial infection by men and women;
- gonococcal infection by women;
- possibly *Trichomonas vaginalis* infection by women.

Condom use has also resulted in accelerated regression of cervical and penile human papillomavirus-associated lesions and accelerated clearance of genital human papillomavirus infection by women.

Given this evidence, it is important to assess the magnitude of HIV and other sexually transmitted infection rates in the general population and in high-risk populations. In countries where these rates are high in both the general population and high-risk populations, safer sex strategies must be delivered as a package to both population groups. Such strategies include: promoting the correct use of male and female condoms, and their distribution, and sexual abstinence, delaying sexual debut and reducing the number of sexual partners. In settings where the infections are concentrated in high-risk populations, targeted interventions should be a priority, but not to the exclusion of education and other prevention and care services for the general population.

1.3.6 Obstacles to provision of services for control of sexually transmitted infections

Over the past five years, interest and resources for the prevention and control of sexually transmitted infections other than HIV have declined despite their importance as cofactors in the transmission of HIV and as direct agents of significant morbidity and mortality in the world. Advocacy and support have focused on antiretroviral therapy and testing and counselling policies for HIV.

In spite of the Programme of Action of the United Nations International Conference on Population and Development (Cairo, 1994) and the outcome of the Fourth World Conference on Women (Beijing, 1995), advocates for sexual and reproductive health have not been particularly enthusiastic about integrating prevention and care activities for sexually transmitted infections (including HIV) into their work. Integration of those activities into sexual and reproductive health programmes in order to improve coverage has proved to be more complex than expected. Experience with integration has been mixed; not enough is known about how integrated interventions can best be configured and what effect they have on prevention of infections and unwanted pregnancy.

In addition, syndromic management of women who present with vaginal discharge has proven problematic as a tool for the detection and management of cervical infections, particularly in areas of low prevalence of sexually transmitted infections. As a result, affordable, rapid diagnostic tests are needed. Such tests have been slow to be developed and, where available, they are still too expensive for governments to incorporate into national care programmes.

Several other difficulties have been encountered in attempts to promote prevention interventions. The determinants of the epidemiology of sexually transmitted infections are multifaceted (including gender inequities, poverty and other socioeconomic disparities), and intervention efforts to prevent infection have failed to take into consideration the full range of the underlying determinants. At the care level, it is crucial to ensure consistent supplies of medicines and condoms, a challenge that has not been successfully tackled by health systems. Counselling on risk reduction is also usually lacking. In the control of these infections, a broader participation of partners from different sectors, disciplines and communities (including from nongovernmental and faith-based organizations) is necessary, but this broader involvement remains a challenge, especially in the area of community participation.

In addition to these shortcomings, the following underlying factors have also contributed to failure to control sexually transmitted infections:

- ignorance and lack of information perpetuate wrong conceptions of these diseases and associated stigmatization
- many of the infections tend to be asymptomatic or otherwise unrecognized until complications and sequelae develop, especially in women
- the stigmatization associated with infection (and clinics that provide services) constitutes an ongoing and powerful barrier to the implementation of prevention and care interventions.

At the individual and community levels, stigmatization results in:

- reluctance of patients to seek early treatment;
- preference to seek treatment in the private sector, whether provided by medically qualified personnel, pharmacists, traditional practitioners or other types of providers, who are perceived to offer greater accessibility, confidentiality, and to be less stigmatizing than public-sector facilities;
- difficulty in notifying and treating infections in sexual partners.

At the policy and decision-making levels, the following factors operate:

- Policy-makers and planners give low priority to control of sexually transmitted infections. This situation is potentially aggravated by the stigmatization and prejudice associated with the infections and ignorance of the importance of their impact on health and economic development.
- Donors are increasingly using sector-wide approaches to allocate aid to the whole health sector rather than to specific projects, such as sexually transmitted infection control. Although this allows health ministries to determine national priorities, it also means that countries that have traditionally accorded little importance to these infections in their health budgets because of stigmatization can continue to do so.

- There is a failure to provide suitable education and services to populations identified as being particularly vulnerable to sexually transmitted infections, such as young people and adolescents, sex workers (both male and female) and their clients, men who have sex with men, transgendered people, substance users, prisoners, mobile populations (for work or recreation), children and young people on the street, and people affected by conflict and civil unrest.

2. AIMS AND SCOPE OF THE STRATEGY

2.1 Purpose and objectives

The purpose of the global strategy is to provide a framework to guide an accelerated global response for the prevention and control of sexually transmitted infections, towards the attainment of international development goals. In particular, the strategy will focus on achievement of the following objectives:

- to increase the commitment of national governments and national and international development partners for prevention and control
- to promote mobilization of funds and reallocation of resources, taking into account national prioritized results-oriented interventions that ensure aid effectiveness, ownership, harmonization, results and accountability¹
- to ensure that policies, laws and initiatives related to provision of care are non-stigmatizing and gender-sensitive within the prevailing sociocultural context
- to harness the strengths and capacities of all partners and institutions in order to scale up and sustain interventions for prevention and control.

The global response will be guided by two strategic components.

Technical component: a global technical strategy adaptable at the country and regional levels, including ways to package and deliver the key programmatic elements of prevention and control in a sustainable manner. The strategy will draw on lessons learnt and on clearly successful actions that need to be scaled up. It will identify shortcomings in such key areas as:

- availability or suitability of health-care services for priority target populations (e.g. adolescents and sex workers);
- diagnosis and treatment of asymptomatic infections;
- the syndromic approach for the management of abnormal vaginal discharge;
- management of sexually transmitted infections in sexual partners;

¹ Paris Declaration on Aid Effectiveness: Ownership, Harmonisation, Alignment, Results and Mutual Accountability. Paris, March 2005.

- attitudes of health-care providers;
- availability and reliability of data for planning purposes.

It will also identify appropriate opportunities for interfacing and integrating with HIV/AIDS and sexual and reproductive health programmes, and for involvement of the private sector.

Advocacy component: a global advocacy campaign to raise awareness and mobilize resources worldwide. This campaign will run alongside other initiatives such as campaigns for the elimination of congenital syphilis, the control and eradication of curable genital ulcer diseases, and the control of genital herpes and genital human papillomavirus infections.

2.2 Target audience

The strategy outlines the essential elements of an effective response to the burden of infection and provides information on key issues. It does not attempt to provide guidelines on how to develop or implement activities.

Its target audiences are the following: managers of national programmes on HIV/AIDS/sexually transmitted infections and sexual and reproductive health; health-sector stakeholders including public-sector and private-sector health-care providers; health ministers, policy-makers and other decision-makers in the health sector; international agencies and nongovernmental partners; other governmental departments and agencies; and donors.

2.3 Guiding principles

The strategy is underpinned by internationally agreed frameworks of ethics and human rights, which recognize the right of all persons to the highest attainable standards of health, including sexual and reproductive health. It conforms with the legal framework governing the reproductive health needs of children and adolescents, in particular the right to be free of coercion or abuse, including sexual abuse.

The strategy is also based on the following guiding principles:

1. Gender inequalities must be addressed through interventions that influence political will as well as societal norms and attitudes concerning sexual behaviour and the status of women. Active promotion of male responsibility and the empowerment of women in the prevention and control of sexually transmitted infections are crucial elements of an effective gender-sensitive response.
2. There should be a seamless continuum between prevention interventions and care. The balance and variety of activities will depend on the local determinants of epidemiology, patterns of infections and resources available. In each setting, the availability of and access to condoms and medicines for treatment of sexually transmitted infections will constitute elements of a fully effective response.
3. Interventions should form an integral part of a range of comprehensive sexual and reproductive health services. Close cooperation with sexual and reproductive health programmes, within the framework of WHO's strategy to accelerate progress towards the attainment of international development goals and targets related to reproductive health, is crucial for the implementation of strategies on both sexually transmitted infections and reproductive health.
4. Cooperation between prevention and care programmes for sexually transmitted infections and those for HIV is vital for the response, as not only are the risk behaviours that lead to infection with

HIV and other sexually transmitted pathogens the same, but also prevention and care of other sexually transmitted infections remain key elements of the primary prevention of HIV, especially in settings and populations with low HIV prevalence. Combining the strengths of the two programmes creates synergies for the fight against both HIV and other sexually transmitted infections. WHO's global health-sector strategy for HIV/AIDS 2003-2007 and the WHO/UNAIDS strategies for coming as close as possible to the goal of universal access to prevention, care and treatment will be instrumental frameworks for this collaboration.

5. Building partnerships is critical for improved prevention and care of sexually transmitted infections. The multisectoral approach should include the ministries of health, education, sports, tourism and transport, and the military and other uniformed forces, as well as the private and informal sectors.

6. Engagement of communities (including nongovernmental and faith-based organizations) and vulnerable populations as partners in the design, implementation and evaluation of interventions and services enriches the process, ensures ownership and culture-sensitiveness of the process and output, and mobilizes commitment for implementation.

7. Reducing stigmatization and discrimination at both individual and societal levels is a key component to improve health-care seeking behaviour and provision of health-care services in relation to prevention and control.

2.4 Essential elements of the response

The key strategic elements of a control programme for sexually transmitted infections at the national and regional levels are well-established and include the following:

- reviewing relevant policies, laws and regulations to ensure that they are non-punitive and non-coercive and contribute towards the aims of the prevention and control programmes and services
- promoting healthy behaviours: safer sexual and health-seeking behaviours, compliance with therapy, and responsible notification and management of infections in sexual partners
- delivering care including antenatal case-finding programmes for syphilis and other sexually transmitted infections, ophthalmic prophylaxis at birth for neonates, and immunization against hepatitis B
- ensuring a reliable supply of safe, effective, high-quality and affordable medicines and commodities for prevention and control, including male and female condoms and other effective barrier methods
- strengthening support components, including the adaptation of normative guidelines, training, information networks, commodities logistics, laboratory support, surveillance and research.

Innovative ways of packaging and delivering these core elements must be explored. The challenge is to determine how best:

- to use existing and new tools and technologies so as to benefit the people who need them most;

- to improve clinic environments to make them more accessible, user-friendly and client-centred so that they respond to clients' needs;
- to communicate clear health messages in local languages so that they are more memorable and effective;
- to develop strong relations with the media and recruit advocates for prevention and control across social networks that are difficult to penetrate;
- to promote a multisectoral response that works in sectors other than health, such as the legal and education sectors, the tourism industry and the private sector;
- to develop public-private partnerships for prevention and control;
- to rally international agencies, national governments, private philanthropic organizations and commercial interests around a set of priority interventions and initiatives;
- to move beyond the search for “magic bullets” to multifaceted interventions that work in concert across multiple components and levels, and are sustainable at the local level.

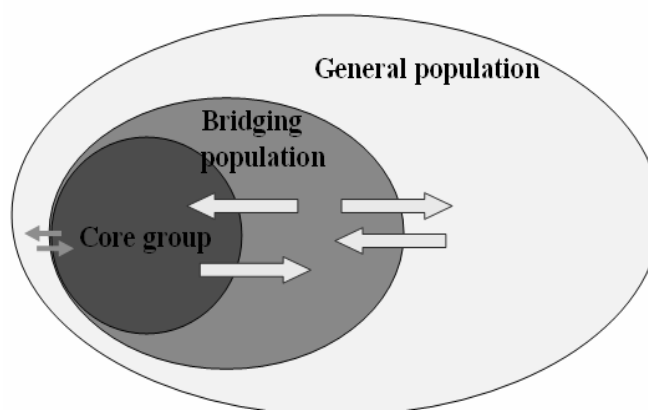
3. THE TECHNICAL STRATEGY: BUILDING ON SUCCESS IN PREVENTING AND CONTROLLING SEXUALLY TRANSMITTED INFECTIONS

3.1 Transmission dynamics

In the past 20 years, knowledge about the transmission dynamics of sexually transmitted infections has grown, as a consequence of the pandemic of HIV and increased efforts to control the other infections. Mathematical modelling and research have shown the importance of sexual networks in determining the spread of all these infections. This improved understanding of the transmission dynamics has implications for the design of strategic prevention and control interventions.

Within a given population the distribution of such infections is not static. Over time, epidemics evolve through different phases characterized by changing patterns in the distribution and transmission of the sexually transmitted pathogens within and between subpopulations. Generally, early in an epidemic or in some geographical settings, sexually transmitted pathogens are likely to be transmitted within and from high-risk persons with high rates of infection and frequent changes of sexual partner (*core groups*). As the epidemic progresses, the pathogens spread into lower-risk populations (*bridging populations*) who may be an important sexual link between the core groups and the general population. Social or economic conditions of certain population groups can increase their vulnerabilities for acquiring or transmitting an infection and bring them into this bridging category. Sexual networks vary from setting to setting but, in general, sexual partners of individuals with high rates of infection (i.e. bridging populations), in turn, infect other sexual partners, such as their spouses or other regular sexual partners within the general population. Figure 1 is a simplified representation of the population transmission dynamics for sexually transmitted infections.

Figure 1.
Transmission dynamics of sexually transmitted infections at the population level



The situation is further complicated by the different interaction dynamics between host and pathogen which are governed by a threshold parameter, R_0 , the basic reproductive number. R_0 represents the expected number of secondary cases produced by a single index case in a population of susceptible persons. R_0 is a product of three variables, represented as $R_0 = \beta \times D \times C$, where β is the transmission efficiency of the pathogen per single sexual contact (infectiousness), D is the duration of infectiousness and C is the rate of change of sexual partners. Some pathogens (e.g. *Haemophilus ducreyi*) are highly infectious but the period during which an infected person is infectious is of short duration, while others such as HIV and herpes simplex virus type 2 are of relatively low infectiousness but infected people are infectious for a long period. *Neisseria gonorrhoeae*, *Chlamydia trachomatis* and *Treponema pallidum*, on the other hand, are of intermediate infectiousness and duration. Thus, the pattern by which an epidemic will evolve will differ for different types of population-pathogen interactions. All these factors need to be taken into consideration, where possible, when planning an effective programme for the prevention and control of these infections.

Risk factors for sexually transmitted infections, including HIV infection, vary by sex, and women and their infants are disproportionately affected. Differences in vulnerability and sequelae are attributable to biological susceptibility and to gender differentials such as power inequalities, and behavioural factors including sexual practices, health-care seeking behaviour, and in some settings, poor access to care and low levels of education.

3.2 Prevention and control interventions

Given the transmission dynamics summarized above, strategies for prevention and control need to be appropriate in order to maximize the impact and gains. Programmes need to have an understanding of the following:

- which populations are at greatest risk;
- what behaviours or circumstances put these populations at risk;
- what are the best approaches and interventions to break the chain of transmission;
- how to prioritize, scale up and sustain the interventions.

In some geographical settings and countries rates of sexually transmitted infections in the general population are high, while in others high rates are confined to specific population groups. Exercises that map infection levels, sexual behaviours (e.g. number of sexual partners and rates of partner change), preventive behaviours (e.g. correct and consistent condom use), and health-related behaviours (e.g. treatment-seeking behaviours) in population groups with high rates of infection and in vulnerable groups, as well as in the general population, provide valuable information on the transmission dynamics and help to determine which interventions for control would be most successful. Targeted interventions should be prioritized according to the needs, feasibility and availability of resources.

The populations whose behaviours and vulnerabilities need to be analysed for possible targeted interventions vary between regions and among countries. Those frequently observed to be in need of targeted interventions include:

- sex workers (female, male and transgendered) and their clients who also might have sex with their regular partners;
- mobile populations such as long-distance truck drivers, fishermen, seafarers and migrant workers, who are at increased risk of infection primarily because of their mobility and high-risk sexual contacts;
- men who have sex with men who have multiple sexual partners and engage in unprotected anal intercourse;
- men who have sex with men and who also have sex with women (i.e. bisexual men);
- substance users, especially those who also sell or exchange sex to support their habit or who have sex with non-users;
- incarcerated persons, especially juveniles;
- external and internal refugees and displaced persons;
- members of the uniformed services, including military and police;
- tourists, especially recreational sex tourists;
- women or men who experience sexual and gender-based violence;
- children and young people on the street, and those who are abused or are orphans.

Adolescents are at special risk of infection with sexually transmitted pathogens, including HIV, because they might not have the information, skills, health care and support they need while going through sexual development. Their sexual relations tend to be unplanned and sporadic, and in many cases result from pressure or force or take place in exchange for acceptance or financial gain. Adolescent women in particular are more vulnerable than men for biological, social and economic reasons. In some cultures where adolescents, especially girls, marry at a young age, national programmes need to recognize that the young girls may be at increased risk because the social and biological factors referred to above still apply to them even though they will be regarded as adults by virtue of being married. The prevention and care of these infections, including HIV infection, among young people will require a range of age-appropriate interventions from a variety of different sectors. The health sector itself will be responsible for a number of such interventions, through a range of health-system partners. Some of these areas of activity for adolescents are discussed in section 3.4.1.

All targeted interventions, however, must be provided in the context of effective services for people with sexually transmitted infections and other health needs for the general populations as well as the populations being targeted.

3.2.1 Promoting healthy sexual behaviour

An effective response to the spread of sexually transmitted infections starts with prevention by providing accurate and explicit information on safer sex, including correct and consistent use of male and female condoms, as well as abstinence, delay in onset of sexual activity, keeping to one sexual partner or reducing the number of sexual partners. In addition to prevention interventions, health-care services must be available to provide early and effective treatment.

Communication about sexual behavioural change is part of an integrated, multilevel, interactive process with communities, aimed at developing tailored messages and approaches using a variety of channels. It should be an integral component of prevention efforts and incorporated into care and support activities. It can increase knowledge; stimulate dialogue within the community; promote essential changes in attitude; reduce stigmatization and discrimination; create demand for information and health-care services; advocate appropriate policies and laws; promote interventions for prevention, care and support; and improve skills and self-esteem.

When choosing the communication channels for sexual behavioural-change messages it is important to know which ones can most effectively reach the target population. One successful channel for targeted interventions is through peer educators and opinion leaders. Health talks through institutional or interpersonal networks, group discussions or other one-to-one approaches have also proved effective. Age-appropriate schools-based programmes help in reaching young people who are attending school, but for the out-of-school population other channels, such as peer education, are necessary.

Whatever channel of communication is selected, it is important to use language that is well understood locally. Care should be taken that the messages are sensitive to gender and culture and that they do not reinforce any existing norms that could be driving the spread of sexually transmitted infections. Prevention activities should be designed for the particular population for whom they are intended, by taking into consideration people's situations, vulnerabilities and specific needs.

Innovative strategies for raising demand for high quality services should be used, for example market-oriented methods for raising consumer awareness on what is the correct, high-quality treatment that they should expect from the care providers. This approach relies on the premise that increasing demand affects supply of health-care services. Creating high expectations that are not met can be detrimental to success.

Health education about sexually transmitted infections, and counselling of both infected and uninfected people, including voluntary counselling and confidential HIV testing, should be an integral part of any health service for those infections, as the counselling process creates motivation to change sexual behaviour in both infected and uninfected individuals. Education and counselling messages should also highlight the need for sexual partners to be informed and managed properly for any such infection in order to avoid repeated infections.

3.2.2 Providing condoms and other barrier methods

The male latex condom is the single, most efficient, available technology to reduce the sexual transmission of HIV and other sexually transmitted pathogens. Although the female condom is effective and safe, it has not achieved its full potential in national programmes because of its relatively high cost. Male and female condoms are a key component of comprehensive prevention strategies, and both should be made readily and consistently available to all those who need them in order to reduce risks of sexual exposure to pathogens including HIV.

Tests are currently under way to assess the effectiveness of diaphragms to protect the cervix against HIV and other sexually transmitted infections. Together, microbicides and the diaphragm offer the best promise of prevention tools that women can control. Currently, several new microbicides are undergoing field trials. Should any of these new methods of prevention prove effective, strategies will need to be developed to facilitate their introduction in different geographical and population settings.

Planning is essential to ensure that national needs are met on a consistent basis. Once procured, condoms should be promoted and distributed through both the public and private sectors, in clinical and non-clinical settings. Maternal and child health and family planning clinics are good additional outlets for condoms, making them accessible to women who could be at risk of sexually transmitted infections. Social marketing programmes have been shown to be particularly effective in ensuring that high-quality, affordable condoms are available where and when they are needed, in both traditional and non-traditional outlets. Condom distribution can also be supplemented by community-based distribution and outreach services to target populations.

3.2.3 Delivering prevention and care

The aim of delivering care services for people with sexually transmitted infections is to prevent the development of long-term complications and sequelae in people already infected and to prevent the spread of infection to uninfected sexual partners, the fetus or the newborn.

Strategic options for prevention and care

In any particular population there will be individuals infected and those not infected with sexually transmitted pathogens. A proportion from each of these groups will seek care either for symptoms perceived to be related to a sexually transmitted infection, or for ailments other than such infections. At the same time, within the community there will be a number of symptomatic people with sexually transmitted infections who do not seek care for one reason or another, and others who will be asymptomatic but infected. Strategies need to be identified and put in place to cope with this variety of presentations both at the community and health-centre levels.

Figure 2 presents a diagrammatic representation of such a scenario. The left side represents people with an established sexually transmitted infection and the right side represents those without an infection; the top half represents symptomatic persons (with or without a sexually transmitted infection) and the bottom half represents the asymptomatic group. The upper-left quadrant, therefore, represents persons with true symptomatic infections, while the lower-left quadrant concerns those without symptoms of infection. The challenge is how to detect the infection in these people who are infected but without symptoms. The upper-right quadrant represents people who are not infected but presenting with symptoms suggestive of infection. This group does not require treatment for sexually transmitted infections, but needs information and reassurance, along with treatment for the ailment that could be responsible for the symptoms. In this group, the challenge is how to exclude infection. The lower-right quadrant relates to people without infection and free of any symptoms. This is a healthy population that needs information and knowledge to remain free of infection. Such information can be provided either within the community or when these people come into contact with a health centre. Options and commodities necessary to provide a comprehensive prevention and care programme are discussed below, in terms of the transmission dynamics and the different categories of persons presenting at health-care facilities.

Sexually transmitted infections programmes should promote accessible, acceptable and effective interventions that offer comprehensive case management of infected persons to prevent further infections and their many complications and long-term sequelae. The components of such management are the following:

- correct diagnosis by syndrome or laboratory diagnosis;

- provision of effective treatment;
- reduction in or prevention of further risk-taking behaviour through age-appropriate education and counselling;
- promotion and provision of condoms, with clear messages for correct and consistent use;
- notification and treatment of sexually transmitted infections in sexual partners, where applicable.

Figure 2.
Diagrammatic representation of clinical presentations of sexually transmitted or reproductive tract infections and service needs

General population							
Clinical presentation	SYMPTOMATIC	Interventions	People with sexually transmitted infections (infected)		People without sexually transmitted infections (uninfected)		SYMPTOMATIC
			INFECTED AND SYMPTOMATIC		UNINFECTED BUT SYMPTOMATIC		
			Do not seek treatment	Seek treatment	Do not seek treatment		
			Treatment necessary		Avoid unnecessary treatment		
			Standardized case management Health education and counselling Behavioural change communication to raise awareness of symptoms of sexually transmitted infections and improve health-care seeking behaviour		Behavioural change communication to raise awareness and education on reproductive health and personal hygiene		
			Prevention messages against sexually transmitted infections, including HIV		Prevention messages against sexually transmitted infections, including HIV		
	ASYMPTOMATIC	Interventions	INFECTED BUT ASYMPTOMATIC		UNINFECTED AND ASYMPTOMATIC		ASYMPTOMATIC
			Do not seek care	Attend health facility for reasons other than sexually transmitted infections	Do not seek care		
			Treatment necessary		No treatment needed		
			Case-finding and screening Incorporation of rapid diagnostic tests for sexually transmitted infections Periodic presumptive treatment Awareness campaigns		Behavioural change communication to raise awareness and education on reproductive health and personal hygiene		
		Prevention messages against sexually transmitted infections, including HIV		Prevention messages against sexually transmitted infections, including HIV			

Whenever an infection is diagnosed or suspected, effective treatment should be provided promptly to avoid complications and to break the chain of transmission. The client should receive education and counselling on: adherence to treatment; notification and treatment of infections in sexual partners; risk reduction; and correct and consistent condom use. Referral for existing complications or sequelae should be provided, whenever needed.

Syndromic management

Traditionally, a presumed sexually transmitted infection has been diagnosed by either clinical appearance alone (which is often inaccurate) or a laboratory-based test, which can be complicated and expensive and commonly delays treatment while test results are awaited. Even if desirable, laboratory-based diagnosis is often limited, especially in resource-constrained settings, owing to the cost of maintaining a laboratory and a consistent supply of test kits as well as ensuring quality control. For these reasons WHO recommends the syndromic management of sexually transmitted infections in patients presenting with consistently recognized signs and symptoms shown in simple flowcharts that can be used at the primary health-clinic level.¹

Syndromic management is based on the identification of a group of symptoms and easily recognized signs associated with infection with well-defined pathogens. Treatment for each syndrome is directed against the main organisms within that geographical setting responsible for the syndrome. The syndromic approach has been shown to be highly effective for the management of urethritis and epididymitis in men and genital ulcers in both men and women, and works well in the management of infants with ophthalmia neonatorum. It should be noted that the syndrome of vaginal discharge is neither specific nor sensitive for predicting gonococcal, chlamydial or other cervical infections; however, if the primary objective is to treat vaginitis – attributable, for example, to bacterial vaginosis or trichomoniasis – the approach is of benefit and becomes cost effective in all settings.

Sexually transmitted infections often exist without symptoms, particularly in women. Different strategies are required for the detection and management of these asymptomatic infections. Some of the strategies are case-finding or screening, with enhanced interventions for reaching sexual partners in order to provide case management for a presumptive sexually transmitted infection, and increasing knowledge and awareness of individual risk. Case-finding refers to testing in individuals who seek health care for reasons other than a sexually transmitted infection. A very important application of case-finding is the provision of care for such infections in antenatal clinics and in maternal and child-health and family planning clinics. A common example of case-finding is the routine testing of pregnant women for syphilis at antenatal clinics.

Screening refers to testing of individuals who are not directly seeking any health care. For example, testing of blood donors for syphilis, HIV infection and markers of hepatitis B virus infection is an important application of screening. Community-based screening, when feasible and acceptable and done with due regard to confidentiality and human rights, can be an effective means of detecting and treating people with asymptomatic infections. Targeting screening to those at higher risk of infection will improve the cost-effectiveness of screening programmes.

Strategies for case-finding and screening for sexually transmitted infections require more than the development of rapid diagnostic tests but will be more feasible when these become available. In all cases, careful attention should be paid to patient confidentiality, counselling and treatment.

¹ WHO has developed protocols for seven syndromes: vaginal discharge, urethral discharge, genital ulcer, lower abdominal pain, scrotal swelling, inguinal bubo, and neonatal conjunctivitis.

Strategies for notification of sexual partners

Partner notification, which is an integral part of case management, is a process whereby the sexual partners of patients diagnosed with sexually transmitted infections are informed of their exposure to infection so that they may seek consultative screening and treatment. Partner notification aims to prevent reinfection of the index patient and reduce the spread of infections. Three main approaches have been followed:

- use of third parties (usually health-care personnel) to notify sexual partners
- index patients notify their sexual partners, or the patients are supplied with medications to deliver to their sexual partners
- index patients agree to notify their sexual partners, with the understanding that health-care personnel will notify those partners who do not present for treatment within a given time.

Epidemiological treatment (treatment for the same infection or syndrome as in the index patient) should be given to all recent sexual partners. Management of such partners for infections is one of the most difficult interventions to achieve, but it is an important component of control of sexually transmitted infections. It offers a significant opportunity for identifying and treating asymptomatic persons, particularly women, at an early stage and before the development of complications. This intervention should not be coercive, however, and special care needs to be taken to observe confidentiality and to take gender into account, in view of the fact that the implications for partners will differ according to their sex and their sexual and social norms.

There is no strong or consistent evidence for the relative effects of the three approaches or patient choice among strategies. Patient referral incurs fewer costs and can be more effective with appropriate education and counselling. More operational research, especially in developing countries, is needed to evaluate the different approaches in terms of acceptability, the number of sex partners that present for medical evaluation, the impact on index patient reinfection rates, and incidence of sexually transmitted infections. In addition, whatever approach of partner notification is implemented, costs and potential harm related to the process need to be monitored and documented.

3.2.4 Access to medicines and appropriate technology

Medicines

Consistent availability of appropriate medicines is essential for a successful sexually transmitted infection control programme. Prompt and effective treatment breaks the chain of transmission and prevents the development of complications and long-term sequelae. Most of these medicines are inexpensive, and cost should not be a barrier to their availability. Some of the newer and improved formulations are, however, expensive and require procurement mechanisms that would make them affordable to governments and clients. Factors related to affordability can include national, regional and international features such as patents, limited volume, limited competition, import duties and tariffs, and local taxes and mark-ups for wholesaling, distribution and dispensing.

A medicine that is appropriate for treatment of a sexually transmitted infection is one that is highly efficacious, that has acceptable toxicity, for which microbial resistance is either unlikely or will be delayed, that is administered orally and preferably as a single dose, and that is not contraindicated for pregnant or breast-feeding women. A two-tier medicines policy, with the provision of less effective medicines at the peripheral health-care level and the most effective (usually more expensive) ones

only at a referral level, can result in an unacceptable rate of treatment failures, complications and referrals, bring about drug resistance more rapidly and erode confidence in health services.

To ensure a consistent supply of safe and effective medicines, countries need to have a sustainable procurement strategy that ensures a 60-day reserve stock at a minimum. Procurement strategies are discussed in section 3.5.6.

Diagnostic tests

Some 80% to 90% of the global burden of sexually transmitted infections occurs in the developing world where there is limited or no access to appropriate diagnostics. There is a need for the development of rapid diagnostic tests in order to improve the quality of care and diagnosis for patients in resource-limited settings. There is a particularly urgent need for improved diagnostics for these infections in HIV-endemic areas, as some of them are important cofactors in the transmission of HIV.

Vaccines

As immunization of populations at risk is, in general, a highly effective method of controlling infectious diseases, the arguments for searching for effective vaccines against sexually transmitted infection, including HIV infection, are compelling. Such vaccines would be an important addition to the existing armamentarium of prevention technologies. Currently, hepatitis B vaccine is the only effective vaccine available against a sexually transmitted pathogen.

Preventive vaccination against the oncogenic human papillomavirus types will soon become available, as was shown by a recent trial which demonstrated a vaccine efficacious in prevention of incident and persistent cervical infections with types 16 and 18. Discussions have been held, under the auspices of WHO, to determine appropriate endpoint measures for human papillomavirus vaccines and encourage recognition of human papillomavirus infection as a public health problem. WHO is encouraging countries to consider the benefits of introducing these vaccines in their programmes as well as to explore issues of acceptability and feasibility when it comes to implementation of such vaccination programmes.

Clinical trials found that a vaccine against herpes simplex virus type 2 was highly effective compared with a placebo, but effectiveness was only in women, and only in women who had not been previously infected with herpes simplex virus type 1. As more research and clinical trials continue, country programme managers should engage in discussions on conducting herpes simplex virus type 2 vaccine trials in different epidemiological settings to evaluate utility, acceptability and feasibility, while at the same time building capacity for research and implementation.

For a successful implementation of any vaccination strategy, the target population must be carefully defined and the acceptability of the vaccine must be assured, especially within a population that may not perceive itself as at risk for sexually transmitted infections. Once the population has been defined and mobilized to accept the vaccine, it will be important to provide that population – reliably and consistently – with a potent vaccine to ensure the success of an immunization strategy. Lessons may be taken from some vaccination programmes against infectious diseases and, indeed, from the lack of widespread use of an existing vaccine against hepatitis B.

3.2.5 Scaling up

Small-scale and pilot programmes to prevent and control sexually transmitted diseases provide only limited geographical and population coverage and cannot be expected to have a meaningful impact on disease burden. Many programmes tend to implement interventions on a small pilot scale,

which, though producing good results, do not reach a wider population for a greater impact. To achieve greater impact, prevention and care interventions must be evaluated for their technical elements and those found to be effective must be scaled up. The objectives of scaling up are to ensure that an effective intervention reaches the populations in need of the service. This means increasing geographical coverage and the number of people served within a particular target population, extending a programme to reach additional target populations, and broadening the scope of interventions provided by a programme.

Scaling up such programmes will have the greatest impact when it is focused on priority target populations (i.e. those that affect the dynamics of the spread of sexually transmitted infections most) and reaches as many individuals as possible within those populations. Scaling up also requires a special focus on:

- quality of services, as there is a risk of trading off quality against intensity of efforts to reach more people;
- absorptive capacity, i.e. ensuring sufficient resources are available to support the scaling up;
- sustainability: before scaling up, mechanisms for sustained provision of care should be established.

3.3 Improving information for policy and programme development

3.3.1 Surveillance

Surveillance of sexually transmitted infections at the national, regional and global levels needs to be enhanced for the purposes of advocacy, programme design, monitoring and evaluation, and patient care. The basic components of surveillance that need to be enhanced include the following:

- case-reporting that disaggregates by age and sex (syndromic or etiological reports depending on the availability of diagnostic tests; universal or sentinel-site reports depending on whether a functional national reporting system for notifiable infectious diseases exists as well as on how services for prevention and control of sexually transmitted infections are delivered and organized)
- prevalence assessment and monitoring to identify and track the burden of infection (symptomatic and asymptomatic) in defined populations
- assessment of etiology of infection
- antimicrobial resistance monitoring
- special studies, for example assessment of quality of care using mystery clients.

The above components are complementary activities, and the ways in which each one of them is performed will depend on the existing surveillance infrastructure and on the systems that are already in place for reporting as part of integrated disease surveillance. The state of the HIV epidemic in a particular country also has implications for activities and priorities for surveillance of sexually transmitted infections.

Second-generation HIV surveillance

Surveillance of sexually transmitted infections is closely linked to and has a special role in second-generation HIV surveillance; the latter includes, in addition to HIV surveillance and AIDS case reporting, behavioural surveillance in order to monitor trends in risk behaviour over time and surveillance of sexually transmitted infections in order to monitor the spread of other such infections in populations at risk for HIV. For example, findings of studies on herpes simplex virus type 2 infections can be used as markers for HIV vulnerability. Strengthening of surveillance of sexually transmitted infections is, therefore, an important component of second-generation HIV surveillance.

Surveillance of sexually transmitted infections should be closely linked to behavioural surveys, especially to surveys on sexual behaviours, determinants of the epidemiology of such infections and health-care seeking behaviours and their relationship to underdetection and underreporting of these infections. Surveillance is also important in assessing which population groups should receive targeted interventions.

Periodically, there is a need to perform special studies to focus on other surveillance issues that are not part of the routine case reporting or prevalence assessment. These studies can include investigations for outbreaks of particular infections, such as syphilis, lymphogranuloma venereum and chancroid in certain populations and geographical settings.

The private sector, to the greatest extent possible, should be included in the reporting system, despite the reluctance often encountered to report sexually transmitted infections to public health authorities because of concerns about privacy and stigmatization, apathy, or a perception that little is to be gained from the notification process. In many countries patients with such infections seek to obtain medication directly from pharmacies or the informal private sector, without first seeking diagnosis from a clinician. This practice can be a source of a substantial amount of underreporting, and special studies could be necessary to determine its extent and the magnitude of underreporting. Incentives to encourage reporting should be considered. Some of these could include accreditation or franchising.

Current surveillance systems need to be strengthened through improving laboratory facilities, materials and personnel, and enforcing reporting mechanisms, especially when diagnostic facilities are in place. As current surveillance systems are further limited by underestimation of the burden attributable to asymptomatic sexually transmitted infections, accompanying strategies for screening and case-finding need to be put in place.

Data for advocacy

The timely collection of reliable data is required to estimate the burden of sexually transmitted infections, including their complications and their economic impact. In turn, this information provides the rationale for enhanced policy attention and resource allocation to control such infections at the national, regional and global levels.

Data for programme design and monitoring

Timely and reliable data are also required to support programme management. Prevalence studies in various populations help to assess the distribution of sexually transmitted infections, identify priority target populations and estimate the burden of asymptomatic infections in a community. Trend data are useful to evaluate the effectiveness and impact of control programmes and interventions, and also serve as biological markers of trends in unsafe sexual practices.

Data for patient care

Antimicrobial resistance to commonly used medicines that took decades to develop continues to diminish their effectiveness. Resistance develops largely because medicines are misused through indiscriminate use and over-prescribing. Medicines are misused by patients who do not complete prescribed courses either because of non-adherence or poverty; poverty often forces both health-care providers and their patients to opt for lower doses of prescribed medications or cheaper, less effective alternatives in order to save money. Ironically, far more expensive medicines must replace cheaper ones once the latter lose their effectiveness.

It is essential that health authorities regularly monitor and detect the relative prevalence of pathogens responsible for the clinical presentations in the local settings and the emergence of resistance, so that treatment guidelines and national lists of essential medicines can be kept up to date. Sexually transmitted organisms that particularly warrant monitoring include *Neisseria gonorrhoeae* and *Haemophilus ducreyi* among the bacteria and herpes simplex virus type 2 among the viruses.

As levels of resistance vary widely from one country to another, WHO does not recommend any one single first-line treatment for gonorrhoea. Instead, each country must make decisions according to its own resistance patterns – a quandary, given that many cannot afford surveillance and have to rely on proxy data gathered by neighbouring countries or use regional estimates.

3.3.2 Monitoring and evaluation

Progress of programme implementation needs to be monitored in order to ensure that activities are performed as planned, on time and within budgeted resources, and determine whether the activities are producing the expected outcome or impact. There is a lack of data at the implementation level that makes it difficult to measure accurately the effectiveness and cost-effectiveness of various interventions. Such information is important for priority setting, strategic planning and resource allocation. A data collection and analysis process should be established to monitor the following:

- service delivery (e.g. numbers of clients served, pregnant women screened and treated for syphilis, condoms distributed, and individuals referred for voluntary counselling and testing);
- quality of care provided (e.g. proportion of clients treated according to national guidelines using standard indicators);
- adequacy of staffing patterns (e.g. patient load);
- client response and satisfaction (e.g. total number of clients served, initial versus repeat or return visits, and proportion using facilities as first treatment option);
- capital and recurrent programme costs to assess efficiency and cost-effectiveness.

Further, it is important that the results of such monitoring, which could be limited to operational research, are linked in a meaningful way with programme implementation. The results should be used to evaluate and improve the ongoing programmes and in the design of new ones. More operational research is needed to examine which interventions work best in particular settings, and research on issues related to women's sexual and reproductive health should be conducted in order to guide the formulation of gender-sensitive strategies and interventions.

3.4 Interface with other programmes and partners

3.4.1 Public sector health programmes

Sexually transmitted infections are implicated in programmes concerned with adolescent health, family planning, women's health, safe motherhood, immunization, child survival and HIV prevention. These programmes are interdependent and strategically should be integrated or have interfaces. These interfaces are indispensable for broadening the coverage of interventions for clients, and reducing missed opportunities for the prevention, detection and treatment of sexually transmitted infections. It should also strengthen the collaboration between the public and private health sectors for better quality and wider coverage. However, such interfacing or integration is made difficult by the need to accommodate additional tasks in existing programmes, particularly when the health goals of the new tasks are different from those of the existing services. Additional supervision, and financial and managerial support, might be required. Until these are in place, integration cannot be assumed to have been established. Although interfacing and integration facilitate increased coverage for clients, access to health care and management planning, they are not easy to achieve or cheaper in the first instance. Benefits are felt and appreciated only after initial difficulties and costs.

HIV/AIDS

The predominant mode of transmission of HIV and other sexually transmitted infections is sexual. Other routes of transmission for both include injecting drug use, transfusion of blood and blood products, transplantation of donated organs or tissue, and vertical transmission from a mother to her fetus or newborn infant. Many of the measures for preventing the sexual transmission of HIV and other pathogens are the same, as are the target audiences and populations for the interventions.

Some sexually transmitted infections, when present, facilitate the transmission of HIV. Some studies have demonstrated that ulcerative infections are implicated to varying degrees, with relative risks ranging from 1.5 to 8.5 (see Table 2). The increase in transmission probability for HIV infection per single sexual act is probably much higher than the relative risks observed in cohort studies, because participants are not continuously affected by a sexually transmitted infection during the follow-up period. Although the cofactor effect seems to be higher for ulcerative diseases, non-ulcerative infections could be more important in some populations because of their frequency and prevalence. More recently, intervention studies have added information and weight to the sexually transmitted infection/HIV cofactor effect.

The community-based randomized control trial in the Mwanza district of the United Republic of Tanzania showed that strengthened case management of symptomatic patients, by using syndromic management provided through the existing primary health-care clinics, reduced HIV incidence by 38%. A study conducted in Malawi among HIV-1 seropositive men showed that men with urethritis had HIV-1 RNA concentrations in seminal plasma eight times higher than those in seropositive men without urethritis. Gonorrhoea was associated with the greatest concentration of HIV-1 in semen. After the urethritis patients received antimicrobial therapy directed against sexually transmitted infections, the concentration of HIV-1 RNA in semen decreased significantly at two weeks. Blood plasma viral RNA concentrations did not change. There was no significant change in seminal plasma HIV-1 RNA concentrations during the two-week period in the control group. These results suggest that treating urethritis decreases the infectiousness of men with HIV-1 infection, and give further evidence that HIV/AIDS control programmes that include detection and treatment of other sexually transmitted infections in patients already infected with HIV-1 could help to curb the epidemic.

Treatment of sexually transmitted infections is a cost-effective option for countries to invest in, both as a means of reducing the serious morbidity caused by such infections and as an intervention to

Table 2.
Studies on sexually transmitted infection as risk factor for HIV transmission

Reference	Study population	Sexually transmitted infection studied	Relative risk	Odds ratio
Plummer, 1991	Female sex workers, Kenya	Chlamydia		3.6
Laga, 1993	Female sex workers, Democratic Republic of the Congo	Chlamydia		3.6
		Gonorrhoea		4.8
		Trichomoniasis		1.9
Kassler, 1994	Heterosexual cohort, United States of America	Gonorrhoea		2.5
Craib, 1995	Cohort of MSM, Canada	Rectal gonorrhoea		3.18
Cameron, 1989	Heterosexual men, Kenya	Mainly chancroid	4.7	
Telzak, 1993	Heterosexual men, United States of America	GUD, chancroid	3.0	
Limpakarnjanarat, 1999	Female sex workers, Thailand	Syphilis		3.7
		GUD and herpes		2.0-2.4
Mbizvo, 1996	Antenatal care women, Zimbabwe	GUD + PID		5.8
Bollinger, 1997	Sexually transmitted infection clinic attendees, India	GUD		4.2
Stamm, 1988	MSM, United States of America	Herpes, syphilis	3.3-8.5	
Holmberg, 1988	MSM, United States of America	Herpes	4.4	
Darrow, 1987	MSM, United States of America	Syphilis	1.5-2.2	

MSM, men who have sex with men; GUD, genital ulcer disease; PID, pelvic inflammatory disease.

prevent HIV. Therefore, programmes on all such infections should establish and maintain strong linkages and complement each other's efforts, given the synergistic interactions between HIV and other sexually transmitted infections and the common elements for prevention of both. Already, in many regions and countries of the world, programmes on sexually transmitted infections and HIV are fully or partially integrated or coordinated through joint planning.

Areas of collaboration between these programmes include advocacy, policy formulation, training, programme planning and evaluation, surveillance and research. The two sets of programmes should not only collaborate but also share their resources for planning and implementing these activities. They can work together to:

- educate clients on risk behaviours and prevention methods at the health-centre level and in the community, involving the public and private sectors alike
- offer counselling and confidential, voluntary testing for HIV to enable individuals to know their HIV status and be appropriately evaluated for antiretroviral treatment
- offer effective treatment for other established sexually transmitted infections to improve the quality of life of persons living with HIV and to reduce infectivity
- develop and implement strategies in order to improve access to appropriate, safe and effective medicines and condoms of high quality at affordable prices
- ensure that national investments in health systems infrastructure and commodity distribution systems contribute to improving the quality and accessibility of care for sexually transmitted infections, including HIV
- ensure a comprehensive prenatal care package that includes screening for infections such as HIV infection and syphilis.

Sexual and reproductive health

The interface between services for sexually transmitted infections and sexual and reproductive health is extensive. Both seek to improve the quality of life and, in particular, the sexual and reproductive life of women and men. The two sets of services engage in the following key areas of activity.

- Improving access to services for prevention and control of sexually transmitted infection. As antenatal, maternal and child health, and family planning clinics serve many women of reproductive age, they constitute a network of health facilities that have the potential to expand the reach and coverage for care of sexually transmitted infections to a significant segment of the general female population that would otherwise not be reached through specialized clinics and general curative medical services. Age-appropriate health education and counselling for these infections and their risk factors can be provided and help in further prevention of infection. Through the establishment of systematic screening programmes, women with asymptomatic infections could be detected and treated, and many adverse pregnancy outcomes of untreated infections avoided.
- Improving women's health. Sexually transmitted infections and reproductive tract infections contribute significantly to a woman's ill-health by increasing her risk of infertility, ectopic pregnancy, cervical cancer, spontaneous abortion and HIV infection. Prevention, detection and early treatment of sexually transmitted infections, therefore, constitute key elements in women's health services.
- Ensuring contraceptive choice and safety. As the presence of some sexually transmitted or reproductive tract infections restricts a woman's access to the full range of contraceptives, and since the contraceptive user may attribute the symptoms of such an infection to a side-effect of a particular contraceptive method (leading to decreased acceptance and discontinuation of contraceptive methods), screening and treatment of sexually transmitted infections, together with counselling on dual protection, are important elements in ensuring contraceptive choice and safety.
- Dealing with sexual and gender-based violence. Violence against women can have serious consequences for women's reproductive health, including the acquisition of sexually transmitted infections. Treatment of those infections and post-exposure prophylaxis for HIV after rape need to be offered. Gender-sensitive methods for partner notification in the case of a sexually transmitted infection need to be explored in order to avoid violence. There is a need to identify successful case studies of partner notification in different cultural settings, and at the same time to initiate operational research to learn how to conduct partner notification in a more acceptable manner across different sociocultural and religious settings.
- Screening and treatment for sexually transmitted infections. Screening and treatment can improve health outcomes following abortion, as the presence of an infection in the lower reproductive tract at the time of abortion is a risk factor for post-procedural complications. Therefore, pre-abortion management of these infections is an important step in preventing post-procedural infections.
- Incorporating gender-sensitive approaches. Services for sexually transmitted infections and sexual and reproductive health both face similar challenges of incorporating gender-sensitive approaches, in particular involving men, reaching marginalized or otherwise neglected populations (such as sex workers, substance users, the poor people in urban and rural areas,

migrant populations, displaced persons and refugees) and responding to adolescents' special needs.

- Preventing reproductive tract infections. These infections, other than those that are sexually transmitted, usually present with symptoms that can be mistaken for a sexually transmitted infection. The endogenous reproductive tract infections, e.g. bacterial vaginosis and candidiasis, result from alterations in the balance of normal, protective bacterial flora in a woman's reproductive tract. Bacterial vaginosis is the most prevalent reproductive tract infection in the world, and it is the most prevalent cause of vaginal discharge in developing countries. Up to 50% of pregnant women have been found to have bacterial vaginosis in sub-Saharan Africa. Bacterial vaginosis has been implicated as a cause of preterm birth, low birth weight, preterm pre-rupture of membranes, postpartum sepsis and spontaneous miscarriage. Bacterial vaginosis has also been implicated in the transmission of HIV infection. Education for the prevention of reproductive tract infections and their complications requires a common approach with services for control of sexually transmitted infections within reproductive health-care settings.
- Promotion of safe transcervical procedures. For example, clients should be checked or treated for endogenous or sexually transmitted infections before insertion of the contraceptive intrauterine device or termination of pregnancy, in order to avoid ascending bacterial contamination of the upper genital tract. Alternatively, women who select to use the intrauterine device should be encouraged to choose a different form of contraception if they consider themselves at risk of exposure to a sexually transmitted infection.
- Scaling up provision of existing and potential vaccines to prevent genital and liver cancers and some sexually transmitted infections. Collaboration and joint planning between programmes against sexually transmitted infections and those for sexual and reproductive health, within national immunization programmes, will facilitate the roll-out of existing and potential vaccines such as hepatitis B and human papillomavirus vaccines, and provide a ready channel for the introduction of any new vaccines.

In addition, sexual and reproductive health services are best positioned to ensure the health of women, neonates and children in collaboration with sexually transmitted infection programmes. Thus, sexual and reproductive health services should ensure the following:

- Health education to prevent HIV and other sexually transmitted infections, including their long-term sequelae such as pelvic inflammatory disease, infertility, ectopic pregnancy and genital cancers. Gender inequalities, culturally constructed roles and biological factors all contribute to women's and young people's vulnerability to infections. Recognizing the influence of ethnicity, culture, sexual orientation, geographical location (urban, rural or inaccessible remote locations), age and different life-skills is essential for better targeting and tailoring responses to the burden of sexually transmitted infections and their complications and long-term sequelae.
- Prevention of congenital syphilis. Effective prevention of congenital syphilis depends first on prevention of syphilis in pregnant women. If that fails, then secondary prevention involves screening for syphilis during pregnancy and providing adequate treatment for both the woman and her sexual partner. Given the high social and economic costs of congenital syphilis and the possibility of changes in the epidemiology of syphilis, prenatal syphilis screening followed by treatment of seroreactive women is a highly cost-effective intervention for the prevention of congenital syphilis and the complications of untreated syphilis in the parents, even in settings with prevalence rates of below 1%. Services should take the following actions:
 - Pregnant women should routinely be screened during their first prenatal visit, ideally before 28 weeks of gestation. In communities where the risk for congenital syphilis is high, a

policy to institute a second screening test at 36 weeks or at delivery should be considered. Clear national guidelines will need to be developed on clinical and serological follow-up for both mother and child.

- Discussion concerning treatment of sexually transmitted infections in sexual partners should be held and an assessment of the risk of reinfection should be made and appropriate action taken.
- As with other sexually transmitted infections, pregnant women found to have syphilis should be offered voluntary counselling and confidential testing for HIV. In high HIV prevalence settings, voluntary counselling and testing should be offered to all pregnant women.
- Prevention of neonatal blindness. Prophylaxis against ophthalmia neonatorum among neonates has been shown to be highly cost effective where the prevalence of gonorrhoea among pregnant women is 1% or more.
- Assessment and management of sexually exploited and abused children. Sexual exploitation and abuse of children and adolescents have come to be recognized as serious social problems that require the attention of policy-makers, educators, and a variety of professionals who deliver social and health care and basic social services when sexual exploitation or abuse is suspected. Screening and exclusion of a sexually transmissible agent, including HIV, should be performed by a trained child clinician following locally defined procedures and guidelines. A standardized approach to the management of sexually transmitted infections in children and adolescents who are suspected of having been sexually abused is important because the infection could be asymptomatic. Psychological and social support should be included for complete management of these young patients.

Adolescent health services

Sexually transmitted infections are a major health risk to all sexually active adolescents¹. Every year, one in 20 adolescents contracts sexually a bacterial infection, and the age at which infections are acquired is becoming younger. Most projects to improve sexual and reproductive health for adolescents have focused on sexual health counselling and family planning but have neglected care for sexually transmitted infections among their service-delivery objectives. Involving parents and young people at the appropriate age of maturity in the planning and implementation of interventions for them is crucial in making an impact on their behaviour. Programmes, including sexual and reproductive health services as part of primary health care, should, at a minimum, institute and provide the following basic interventions.

- Strengthening surveillance of sexually transmitted infections among adolescents and young people. Data need to be stratified by age and sex to enable an appropriate programme assessment and response to meet the needs of adolescents.
- Improving the awareness and knowledge of adolescents about sexually transmitted infections and their complications, and how to prevent them. Appropriate sexual education and consistent access to male and female condoms, with clear messages about correct and consistent use,

¹ WHO has defined adolescents as persons in the 10–19 years age group, while youth has been defined as the 15–24 years age group. “Young people” is a combination of these two overlapping groups, covering the range 10–24 years.

should be available to all who need them. This will lead to the common goal of improving the sexual health and well-being of adolescents.

- Improving adolescents' access to services. It is unlikely that one model for the delivery of care for sexually transmitted infections will suffice to meet the needs of all adolescents. Services can build on those that already exist, including: adult health clinics made youth-friendly through special training of health-care providers; sexual and reproductive health clinics dedicated to adolescents; "one-stop shops" where all health-care services for young people can be obtained; multi-purpose youth health centres; and age-appropriate school-based or linked services. However, new innovative formats such as mobile clinics might be required to reach the most vulnerable youth, including sex workers and street children, particularly during main festivals and events.

3.4.2 The private sector

Although free public-sector services are available even in most resource-poor countries, they might not always be acceptable to the clients or have appropriate health personnel or the necessary medicines available. The private sector or traditional healers and informal providers are frequently the first port of call for patients with sexually transmitted infections, even for those who believe that government health clinics are technically superior. Private providers, whether medically qualified or not, are more acceptable to many people because they are perceived to offer better access and confidentiality, and often have the reputation of being less stigmatizing than public sector facilities. Self-medication, following direct over-the-counter purchases from pharmacists, druggists and vendors, is also common.

Given this scenario, public policy and interventions should necessarily involve the private and informal sectors, and public-private partnerships should be established in the provision of care for sexually transmitted infections. Effective and appropriate regulatory measures should be taken by governments to ensure technical quality and accountability in the private sector services. Strategies for collaboration and quality control should be examined at the country level; these can include training of pharmacists and private practitioners on case management and national guidelines. Governments should explore how to establish formal relations for the promotion of appropriate care with pharmacists' unions, traditional healers' associations and other providers, depending on the setting and prevailing policies, laws and regulations. This should be done in collaboration with the communities themselves.

3.4.3 Community involvement

The involvement of the community in decisions that affect their health is important, and programmes to control sexually transmitted infections need to devise mechanisms for obtaining input from the whole community through appropriate representatives of civil society. This can best be achieved by forming partnerships with nongovernmental organizations, faith-based organizations, community-based organizations and the private sector. Communities should be educated about the availability, advantages and disadvantages of the different types of providers of care. Consumer advocacy groups can be established, and well-informed and discerning patients can also help to improve care. Consumers can be encouraged to use providers who adhere to predefined, agreed and well-publicized quality standards. Strategies to engage the community include the following activities:

- providing information in order to increase community awareness of the problem and increase community demand for interventions and services;
- holding ongoing consultations with the community;

- involving the community in the design and implementation of interventions;
- sharing accountability and responsibility with the community for programme outcomes;
- involving local political leaders and opinion-makers, including traditional and faith leaders, in advocacy for prevention and care of sexually transmitted infections.

Religious and faith-based organizations are often instrumental in shaping opinions, attitudes and behaviour of the followers of the faith and the community in general. In many places they are uniquely placed to provide health education on HIV and other sexually transmitted infections through their extensive networks that reach even the most remote villages and communities. These community-based organizations can be vital partners in promoting prevention, counselling, home care, clinical care and even advanced treatment as well as reducing stigmatization and discrimination. They should, therefore, be engaged in discussions on sexuality, gender and sexually transmitted infections, including HIV, in order to facilitate and enhance an environment for open discussion of these issues. Strengthening collaboration with, and capacity of, these organizations is important to ensure that they work more effectively in partnership with governments and others in the prevention and control of sexually transmitted infections.

3.4.4 Other partners

There are several other partners and stakeholders who should be included in the response to sexually transmitted infections, depending on the setting. These can include other government departments such as education and labour, sports and cultural authorities, police and border control officials, and private companies such as the transport and tourism industries, among others. Different strategies for prevention and control can be explored with them, including prevention and care in the education sector and the workplace. Mechanisms should be developed to encourage organizations to be accountable for such care. In some settings there is a need for cross-border collaboration to establish interventions among cross-border traders, temporary or permanent migrants, displaced persons and persons whose occupation puts them in a different place at one time or another in the course of their work.

3.5 Strengthening the capacity of health systems for effective service delivery

Health systems, broadly defined as comprising all the organizations, institutions and resources devoted to producing health actions, are a prerequisite to the establishment, delivery and monitoring of programmes on sexually transmitted diseases and the success of their outcomes. The capacity of each country's health system will largely determine the extent to which national programmes are able to provide high quality care with the largest geographical spread, reaching disadvantaged and targeted populations in order to achieve a measurable impact on reducing the burden of sexually transmitted and other reproductive tract infections, while preventing new infections. The ability to provide services in an equitable manner is an important consideration, particularly given the stigmatization that surrounds the primary prevention and treatment of sexually transmitted infections. In many resource-limited settings, health systems are overstretched, inadequately funded and ill-equipped to cope with the present and future demands for care. In strengthening health systems, a special focus must be placed on financing to ensure sustainability (including resource mobilization, pooling, allocation and payment), stewardship and regulatory guardianship (to ensure quality and equity) and public-private partnerships to extend the reach of the programme to the largest coverage possible.

In countries where health system reform is under way, efforts should be undertaken to ensure that services for people with sexually transmitted infections are considered in the process. Priority-

setting processes that are used to select an essential package of health interventions for primary care should reflect the significant contribution of these infections to the burden of reproductive ill-health. The goals of reform (improving quality, equity and client responsiveness – as well as sustainability and efficiency) must also take into consideration providers of health care for those with such infections. In particular, financing by the private sector and the effective engagement of the private sector should be used to expand access to care.

The health system response must be based on an analysis of the epidemiology of sexually transmitted infections, sexual risk behaviours and vulnerabilities, patterns of health-seeking behaviour and the skills and attitudes of health-care providers. Based on the findings of the analysis, a comprehensive programme for prevention and control should be developed to cover all the population groups for which interventions are required. Care-delivery strategies should be tailored to the needs of the particular population groups for whom they are intended. The programme should include a continuum of all aspects of prevention and control of sexually transmitted infections, including health promotion, curative services, linkages to family planning, sexual and reproductive health, immunization, HIV/AIDS and other services. It should expand the collaboration among its different partners, in both the public and private sectors, for a multisectoral response.

The programme should also include a plan for monitoring the impact of the implementation of the interventions. The provision of timely data on programme performance and impact will assist in securing resources for additional activities, and provide an evidence base for future programme directions.

3.5.1 Access to services

In most countries, patients with sexually transmitted infections have a choice of settings from which to seek care. Public providers compete with many different types of qualified and unqualified private providers and traditional practitioners. In both the public and private sectors, potential sources of care include specialized clinics, hospital outpatient departments of other specialties such as obstetrics and gynaecology, dermatology or urology, dispensaries and primary health-care centres, and family planning, maternal and child health and antenatal care clinics. The extent to which services are offered through primary care centres or specialized clinics will depend on the epidemiological, organizational and resource circumstances and should take into account the health-care seeking behaviours and preferences of the different subpopulations.

In many settings, the problem is one of an unmet need for good quality care for people with sexually transmitted infections. Providing a supply of care in the public sector does not necessarily lead to better coverage for priority populations, even when such services are of a technically superior quality and are offered free of charge. Additional factors need to be taken into account in order to achieve access to care, and a client-oriented approach should be adopted in all settings. Particular attention should be given to gender equity, adolescents, and poor and marginalized groups when planning the services. Services should be made more user-friendly by improving factors such as distance to residence, professionalism of health-care staff, privacy, confidentiality and reduction of waiting time. The private sector, including pharmacists and other dispensers of medicines, needs to be engaged and committed to providing good quality services, including measures for regulatory supervision and control. Communities and consumers should be educated on health matters in general and sexually transmitted infections in particular, by stressing the importance of having these infections diagnosed and treated by a trained health professional. The price or availability of medicines and condoms can be a barrier to access for some populations. Policies may need to be changed in order to improve the availability of medicines and options such as subsidies for poor people, widespread condom provision for all population subgroups, coverage of diagnostic expenses in health insurance schemes, and referral mechanisms for higher-level care may need to be considered. Outreach may improve access to care for hard-to-reach populations, where needed.

3.5.2 Quality assurance

Decentralization and privatization of the medical sector are two of the components of health sector reform embarked upon by governments. A key challenge for governments is ensuring quality in the large and rapidly growing private sector, about whose role and practices there is little information. Governments must fulfil the core public function of stewardship and put in place processes that ensure good quality of care for the population, both in the public and private sectors.

National guidelines for case management of sexually transmitted infections

In order to promote good-quality case management, guidelines based on identified patterns of infection and disease should be developed and disseminated to all providers of care related to sexually transmitted infections. The processes of elaborating, adopting and disseminating guidelines should involve representatives of both the public and private sectors. Training on the content and use of national guidelines should be imparted to both public sector health workers and private sector health-care providers.

A syndromic approach to management of sexually transmitted infections overcomes many obstacles to the provision of good-quality and efficient management, particularly (but not only) in resource-limited settings. Although desirable, etiological diagnosis for these infections is not feasible in many resource-constrained settings. National experts and committees should be consulted on the most appropriate strategy for management of sexually transmitted infections that will benefit all sectors of the population in need of care. A carefully planned and implemented mixture of protocols may be devised based on the financial, human and technical resources available and the burden of disease.

Licensing, certification and accreditation

Licensing of professionals and certification of facilities help to maintain the quality, safety and geographical distribution of health-care services. Licensing and certification not only apply to the health-service industry but also to the pharmaceutical and health-insurance industries. Effective government stewardship functions through these enforcement mechanisms, which are best established through strong ties with, and broad participation of, the private sector. Professional associations and other self-regulatory bodies that function outside of or in partnership with government are an essential element of regulatory and quality control.

Accreditation is a process of certifying that a facility meets certain standards, and is often linked to coverage of procedures by health insurance schemes. Provider licensing and certification supported by professional associations, as well as community-based consumer educational campaigns in local languages, can help to ensure standards for quality of care. There is an important role for accrediting pre-service and in-service training programmes in helping to ensure quality (including the monitoring of training curricula and requirements for continuing medical education).

Where the capacity to monitor and enforce regulations is limited or non-existent, as is the case in many resource-limited settings, national and local policy-makers should find incentives for rewarding good practice. Accreditation or other forms of recognition linked to payment modalities of private providers (including health insurance coverage) who provide comprehensive high-quality and reasonably-priced care for people with sexually transmitted infections is one possible incentive. Incentive payments can be linked to the obligation to provide data to health authorities on a regular basis, participation in continuing medical education, and willingness to have practices audited. Other incentives not linked to payments but of a financial nature could include access to subsidized medicines or other commodities (e.g. a condom social marketing programme), preferential access to

diagnostic and referral services, and options to participate in schemes which franchise or contract out service provision, such as vouchers or other forms of pre-payment given to the clients directly. Adherence to regulations can be enhanced by provision of adequate resources to regulatory bodies, a clear distinction of roles between regulators and those being regulated, and the establishment of consumer advocacy groups.

Peer review and self-regulation

Settings that have effective regulatory mechanisms in place are characterized by frequent dialogue in a range of different venues between government and professional associations in the private sector. Professional associations and provider networks can be called upon to exert peer pressure and promote self-regulation in partnership with government. For example, they can promote a high quality of service provision by their members through the introduction of professional points (or continuing education credits) for attending sessions and workshops that educate and update participants. However, several randomized controlled trials have found that continuing medical education programmes that are not linked to financial incentives or access to better working conditions have limited success in improving practice.

Supportive supervision and monitoring

Regular supervisory and monitoring visits to health facilities are an important component of ensuring the continued provision of good quality care and sustaining provider morale and motivation, as also demonstrated in the trial in Mwanza (United Republic of Tanzania). Such supervisory visits need not be confined to the public sector. They can be adapted to the private sector to maintain quality, provide continuing education and serve as a means of collaboration between the private and the public sectors. Supervisory visits need to adopt a facilitation process in order not to be a threat to the health-care providers, but rather a source of encouragement, and a means of updating health-care providers and constantly improving quality of care. Training of supervisors is important, so that they can reorient their skills to being supportive rather than judgemental and fault-finding.

Referral centres

Establishment of national and regional centres for referral of complicated cases and confirmatory diagnosis improves quality control. Referral protocols, specifying when and where to refer, should be part of the standard management protocols developed for all health workers involved in care for people with sexually transmitted infections. High drop-out rates among referred patients are common. Care should be taken not to send patients on long and expensive journeys to centres that have nothing extra to offer.

Active supervision and continuing medical education through feedback on cases and formal in-service training sessions help to build the links between the centres. Consultations and communication between health centre and referral centre by means of visits or radio link also facilitate the development of professional trust and confidence.

Most important, however, is the establishment of a programme at the district level with agreed goals and objectives, standard protocols, performance targets and annual or semi-annual review sessions. The link with the referral centre then becomes more comprehensive and interactive, which thereby establishes a more meaningful and motivational relationship among staff.

3.5.3 Financing services

Financing and payment are central functions for any health-care system, and involve four distinct functions: resource mobilization, resource pooling, resource allocation, and payment and purchasing. Although every health system carries out these functions, each will organize them differently, reflecting variation in institutional structures, societal expectations and systems of governance. Health system financing has a strong impact on programme coverage, equity and health outcomes.

Resource mobilization for activities for prevention and control of sexually transmitted infections is necessarily linked to that for HIV/AIDS programmes. Ensuring that adequate funds are devoted to prevention and control of other infections within the overall HIV/AIDS funding envelope is an essential aspect of both international and national fund-raising decisions, particularly given the need to scale up existing interventions for control of sexually transmitted infections. Given that prevention and control of those infections are part and parcel of HIV funding, policies relating to user fees for care of those with HIV and other sexually transmitted infections should be the same.

Shifting the responsibility of resource mobilization to the point of service delivery, through the introduction of user fees, must necessarily include exemption schemes for poor people. Universal coverage will be achieved if pre-payment systems such as health insurance or social health insurance are developed rather than relying on user fees. As countries move towards the creation or expansion of health insurance systems (public-provided, employment-based or privately purchased schemes and community-based pooling schemes), sexually transmitted infection programmes will need to ensure that their medical procedures are included in the benefit packages. In many resource-constrained countries, the cost of medicines is the largest portion of out-of-pocket expenses (those met by patients themselves rather than the health system or a health insurance) for an individual or household. Out-of-pocket expenditure for all medicines can be as high as 65% of total cost of medicines in sub-Saharan Africa and 81% in Asia. In industrialized countries it rarely exceeds 20%.

Adequate or reasonably adequate financial flows at every level of the system improve the responsiveness and effectiveness of service provision. In countries where such decisions are decentralized, financial allocations are often made at the local level, requiring the sexually transmitted infection programme manager to have effective lobbying presence and skills in elaborating and implementing a business plan. In general, public health-care clinics in resource-constrained countries are often poorly equipped and inadequately financed, resulting in low staff morale. Flexibility in designing and implementing different payment and purchasing options that respond to local conditions should be encouraged. Options from both the demand side (e.g. vouchers) and the supply side (e.g. incentive payments as salary supplements) need to be tried.

As many governments and donor agencies move towards sector-wide approaches to channel aid to the health sector, sexually transmitted infection programmes will be challenged to ensure that treatment and preventive activities are valued in the definition of the sector's goals and objectives. Through sector-wide approaches, funds are given to the entire health sector rather than to specific health projects, and ministries of health determine the priorities within the health sector. While this is intended to improve efficiency, there is a risk that funding for services for people with sexually transmitted infections, historically accorded a low priority in developing country health budgets, will be further curtailed.

3.5.4 Human resources development

Discussions about training in leadership, management and strategic planning, advocacy, commodity management, health information systems and other functional areas relevant to the

management of national programmes on sexually transmitted and reproductive tract infections are beyond the scope of this strategy, and should take place in the context of a broader development strategy for human capacity in the health sector. This section focuses on training health personnel in the delivery of care for people with sexually transmitted infections.

Projected personnel requirements for such services can be satisfied, to some extent, through the retention and retraining of existing health personnel and, in part, through recruitment and training of additional staff. Members of the programme team should be trained for their respective roles in management of different components of the programme. Health personnel should be trained according to their respective functional areas. For example, if health-care providers in antenatal care and family planning clinics are expected to provide care to people with sexually transmitted infections, their training should reflect this. Similarly, if physicians are expected to provide patient education and counselling, their training should be broadened to include these skills.

Medical schools and other tertiary educational institutions need to play a greater role in comprehensive training on sexually transmitted infections, including all the aspects of prevention, care and counselling, for physicians, nurses, laboratory workers, pharmacists and public health staff during their basic training. Training in syndromic approaches, their application to sexually transmitted infections, scientific basis and advantages and shortcomings should be incorporated in the respective curricula. A component on sexually transmitted infections should also be an essential feature of postgraduate medical training curricula in public health.

In-service training should be provided to all members of the health-care team, including clinicians, pharmacists and front-line workers such as clerks and receptionists. Training should not be limited to the biomedical aspects of case management but must also address provider attitudes and beliefs. Innovative approaches such as distance and computer-assisted learning should be explored.

Professional associations can play an important role in providing continuing medical education and skills updating, particularly to private sector providers, through training sessions, conferences, journal articles and mailings in the form of newsletters and self-instruction manuals.

Continuing retraining (refresher training) of staff should be based on the results of monitoring and evaluation of control of sexually transmitted infections and programmes for staff development. Skills for prevention and control should be enhanced in other sectors as well as within communities through strengthening capacities and building awareness. The role of community health workers in the management of sexually transmitted infections should be explored in settings where this cadre exists.

Albeit frequently neglected because of resource constraints, follow-up and supervision are crucial aspects of training and of ensuring quality of care.

3.5.5 Laboratory support for programme management

In many communities cost and inconsistent availability of supplies, test kits and expertise severely limit the practicality and availability of laboratory investigations of sexually transmitted infections. Even when such resources are available, the large numbers of cases of sexually transmitted infections and the degree of difficulty in identifying some of the organisms responsible, as well as frequent coinfections, make individual laboratory-based case management impractical and unreliable in many settings. Also, most laboratory tests take a considerable length of time to process, resulting in delays in treatment or loss to follow-up. Reliability of laboratory results compounds the problem further, as test kits for the same organism differ from one manufacturer to another, and performance of the same test can be subject to the experience of the technician and the specimen collection technique, as well as the storage and transport capacity of the health system. On account of these limitations,

laboratory support should be confined to situations where it is essential for programmatic or clinical decisions.

Good-quality laboratory systems should be established wherever laboratory-based diagnoses of sexually transmitted infections are made, either for the diagnosis of individual infections or for providing support for syndromic management. Appropriate training should be provided for all laboratory personnel, and clear guidelines should be given regarding which tests should be used by the laboratory, the interpretation of results obtained and expected turn-around times. Internal quality-control guidelines should be established and adhered to, and participation in external quality-assurance programmes encouraged.

Adequate laboratory support is important for an effective control strategy; clear guidelines should be defined, stipulating where laboratory facilities need to be strengthened and for what purpose. Laboratories should be established and strengthened at national and regional levels and, where feasible, laboratory support can be established at a local level. Such a network of laboratories can work together to strengthen services. To be cost effective, the network can identify clear roles and areas of responsibility, as recommended below:

National level

- conducting epidemiological, sentinel and etiological surveys to monitor disease trends and effectiveness of interventions
- validating and adapting flowcharts for recommendations and guidelines for syndromic management
- establishing national proficiency and quality control systems for the laboratory diagnosis of sexually transmitted infections
- providing training workshops for laboratory diagnosis of sexually transmitted infections
- evaluating performance and cost-effectiveness of new diagnostic tests
- collating data on antimicrobial susceptibility patterns and making recommendations
- at referral centres, establishing diagnosis in those cases that fail syndromic case management and those for medico-legal purposes (e.g. rape or sexual abuse)
- initiating or strengthening screening programmes, where feasible, for asymptomatic gonococcal and chlamydial infections, especially among target populations such as sexually active young women and men

Regional level

- conducting etiological surveys to monitor disease trends and effectiveness of interventions
- monitoring patterns of antimicrobial susceptibility
- supporting regional proficiency and quality control systems for the laboratory diagnosis of sexually transmitted infections
- providing training workshops for laboratory diagnosis of sexually transmitted infections

Local level

- supporting sentinel surveys
- providing routine serological testing for syphilis in pregnant women.

3.5.6 Procurement and logistics management

In order to function effectively, health personnel should have access to medicines, supplies (e.g. gloves, syringes and laboratory supplies), condoms and medical equipment (e.g. examination tables, examination light, screens for privacy, specula for vaginal examinations and sterilization equipment). Thus, the four basic elements of the logistics cycle to be considered are the following:

- selection of supplies to be stocked (requiring coordination with the national government's essential medicines programme in order to ensure that the required medicines and commodities are licensed by the country's national regulatory authorities and included in the country's essential medicines and commodities lists)
- a procurement strategy that seeks to ensure that supplies are purchased at competitive and affordable prices in an open and transparent process
- a distribution system that ensures that supplies reach the sites where they are needed on a regular basis (recognizing that most medicines used in treating sexually transmitted infections are commonly used to treat other infections)
- commodity management that ensures timely procurement, disbursement and replenishment of supplies.

Access to medicines for sexually transmitted infections is poor in many developing countries, affected by factors such as affordability, sustainable financing and erratic procurement, which lead to frequent shortages. Most medicines are generic and not prohibitively expensive, yet the cost is a significant contributor to the level of access in most developing countries. In fact, most of the medicines used in the treatment are not specifically for sexually transmitted infections but are used to treat other diseases. An analysis needs to be performed to identify the reasons for, and resolve the problem of, inconsistent supply of medicines for management of these infections. Strategies to expand access to the full range of such medicines can include using safe high-quality generic medicines, bulk purchasing to obtain the lowest price, differential pricing, financing strategies, and rationalizing the prescription of medicines (e.g. through the introduction of standardized protocols for management).

Other accompanying support mechanisms to promote access to medicines can be looked at and considered from region to region and country to country, and could involve policy formulation, innovation and regulatory mechanisms. Aspects to be considered could include:

- instituting a mandated multidisciplinary national body to coordinate medicine use policies and introduce appropriate and enforced regulations;
- establishment of medicines and therapeutic committees in districts and hospitals;
- problem-based training in pharmacotherapy in undergraduate curricula;
- continuing in-service medical education as a licensing requirement;

- public education in local languages about medicines;
- provision of independent medicine information for prescribers, other than that obtained solely from the pharmaceutical industry;
- supervision, audit and feedback of prescribers;
- sufficient government expenditure to ensure availability of medicines and staff;
- avoidance of financial incentives from industry to prescribers who use certain medicines.

3.6 Priority components for immediate action

As a priority, countries must implement or scale up the provision of care for those with sexually transmitted infections through key activities for which there is sufficient knowledge and evidence for impact and feasibility (Table 3, Priority 1 activities). These interventions have been implemented in many places with modest additional human and financial resources, but they have not been sufficiently scaled up for maximum impact at national level. Some components may be implemented within the “plan, do, assess and scale up” concept in order to gather more information, gain more knowledge and collect data, while providing service at the same time. For interventions that may require substantial additional human and financial resources, plans should be made to implement them in a stepwise manner as resources become available (Table 3, Priority 2 activities). Each component needs to take into account the transmission dynamics, sexual networks, vulnerable populations and service provision, while appreciating that a person with a sexually transmitted infection may present with or without symptoms at any of the many health facilities that exist in the country.

3.6.1 Good-quality case management

Comprehensive case management of sexually transmitted infections must have, as a minimum, the following components:

- correct diagnosis;
- effective treatment;
- health education and counselling for risk avoidance and risk reduction for sexually transmitted infections, including HIV infection;
- promotion and provision of condoms, and information on their correct and consistent use;
- notification and treatment of sexual partners.

There is enough evidence that syndromic management is effective and has had an impact on the epidemic of sexually transmitted infections in many care settings. For example, declines in incidence rates have been observed following introduction of control strategies based on the syndromic approach in several countries, including interventions among sex workers in Côte d’Ivoire, Senegal and South Africa, and in clinics for sexually transmitted infections in Burkina Faso and Kenya. At community level, impact has been demonstrated by studies in Uganda (Masaka) and the United Republic of Tanzania (Mwanza). This approach is particularly effective for urethral discharge in men and genital ulcer disease in both men and women.

Table 3.
Summary of actionable interventions for immediate implementation

Priority 1 activities	Indicators	National-level targets
1. Build on success. Scale up of services for diagnosis and treatment of sexually transmitted infections (Use syndromic management where diagnostic resources are limited.)	1(a). Proportion of primary point-of-care sites providing comprehensive case management for symptomatic infections.	1(a). 90% of primary point-of-care sites provide comprehensive care for people with sexually transmitted infections by 2015.
	1(b). Proportion of patients with sexually transmitted infections at selected health facilities who are appropriately diagnosed, treated and counselled according to national guidelines.	1(b). By 2015, 90% of women and men with sexually transmitted infections at health-care facilities are appropriately diagnosed, treated and counselled.
2. Control congenital syphilis as a step towards elimination.	2. Proportion of pregnant women aged 15–24 years attending antenatal clinics with a positive serology for syphilis.	2(a). More than 90% of first-time antenatal clinic attendees aged 15–24 years screened for syphilis. 2(b). More than 90% of women seropositive for syphilis treated adequately by 2015.
3. Scale up sexually transmitted infection prevention strategies and programmes for HIV-positive persons.	3. Proportion of HIV-positive patients with sexually transmitted infections who are given comprehensive care including advice on condom use and partner notification.	3(a). Strategies and guidelines on interventions for HIV-positive patients with sexually transmitted infections in place by 2010. 3(b). 90% of primary point-of-care sites provide effective care to HIV-infected patients with sexually transmitted infections.
4. Upgrade surveillance of sexually transmitted infections within the context of second-generation HIV surveillance.	4(a). Number of prevalence studies regularly conducted (at sentinel sites or in sentinel populations) every three to five years. 4(b). Annual incidence of reported sexually transmitted infections (syndromic or etiological reporting).	4(a). At least two rounds of prevalence surveys conducted by 2015. 4(b). Routine reporting of sexually transmitted infections established and sustained over at least five consecutive years by 2015.
5. Control bacterial genital ulcer disease.	5(a). Proportion of confirmed cases of bacterial genital ulcer disease among patients with genital ulcerative diseases. 5(b). Percentage of pregnant women aged 15–24 years attending antenatal clinics with a positive serology for syphilis.	5(a). Zero cases of chancroid identified in patients with genital ulcer disease by 2015. 5(b). Less than 2% of positive syphilis serology among antenatal clinic attendees aged 15–24 years.

(Table 3, continued)

Priority 1 activities	Indicators	National-level targets
6. Build on success. Implemented targeted interventions in high-risk and vulnerable populations.	6(a). Health needs identified and national plans for control of sexually transmitted infections, including HIV, for key high-risk and vulnerable populations developed and implemented.	6(a). By 2010, health needs, policies, legislation and regulations reviewed; plans in place and appropriately selected country-specific targeted interventions implemented.
7. Implement age-appropriate comprehensive sexual health education and services.	6(b). Proportion of young people (aged 15–24 years) with infections that were detected during diagnostic testing for sexually transmitted infections.	6(b). At least two rounds of prevalence surveys conducted among groups with high-risk behaviour and among young people by 2015.
8. Promote partner treatment and prevention of reinfection.	7. Percentage of schools with at least one teacher who can provide life-skills-based education about prevention of HIV and other sexually transmitted infections.	7(a). Review of policies and development of age-appropriate training and information materials for schools completed by 2007.
9. Support roll-out of effective vaccines (against hepatitis B and human papillomavirus and, potentially, herpes simplex virus type 2 infections).	8(a). Proportion of patients with sexually transmitted infections whose partner(s) are referred for treatment.	7(b). Increased number of teachers trained in participatory life-skills-based HIV education that includes other sexually transmitted infections by 2015.
10. Facilitate development and implementation of universal opt-out voluntary counselling and testing for HIV among patients with sexually transmitted infections.	8(b). The proportion of patients who bring in, or provide treatment to, their partner(s) doubled by 2010.	8(a). Plans and support materials for partner notification developed, and health-care provider training in place by 2010.
	9(a). Policy and plans for universal vaccination against hepatitis B.	8(b). The proportion of patients who bring in, or provide treatment to, their partner(s) doubled by 2010.
	9(b). Plans and policy reviews and strategies for use of human papillomavirus and potential herpes simplex virus type 2 vaccines.	9(a). Plans in place regarding vaccination against hepatitis B and human papillomavirus infection by 2008.
	10. Proportion of patients assessed for sexually transmitted infections who are routinely counselled and offered confidential testing for HIV.	9(b). Pilot vaccination programmes initiated and scaling up in progress by 2010.
		10(a). HIV testing and counselling available in all settings providing care for people with sexually transmitted infections by 2015.
		10(b). The proportion of patients with sexually transmitted infections who receive voluntary counselling and testing for HIV doubled.

Syndromic management for urethral discharge and genital ulcer disease can be scaled up to cover at least 90% of relevant primary point-of-care sites and patients presenting with such conditions. The following are important in implementation:

- medicines logistics systems;
- training of health personnel;
- confidentiality;
- periodic validation of flowcharts in order to adapt them to the epidemiological patterns of sexually transmitted infections in a given setting;
- strategies for partner notification that include: notification of sexual partners by health-care providers; patient-delivered therapy, where applicable; use of the Internet, where applicable; and presumptive treatment of infections in sexual partners, especially those of symptomatic men.

3.6.2 Access to essential commodities and medicines

Access to an essential package of medicines and commodities is crucial for management, prevention and care, and should be maintained and improved. Every health-care facility that provides a service for control of sexually transmitted infections should have available, as a minimum, a 60-day reserve stock of the necessary commodities.

3.6.3 Interventions for high-risk and vulnerable populations

Interventions should be put in place and scaled up to increase access to care, depending on locally determined criteria and sensitive to local cultural values, for high-risk and vulnerable populations, including young people, sex workers, men who have sex with men, and injecting drug users, among others. A recent comparison of evidence-based HIV prevention activities ranked interventions targeted at female sex workers first in terms of efficiency ratio and effect and lowest in terms of cost and dependence on the health system. Given existing knowledge of what works best and with allowance for innovative approaches in some areas, priority areas for action for countries are proposed as follows:

- information about and interventions against sexually transmitted infections to reach at least 90% of persons identified as sex workers, male or female, and other locally determined priority vulnerable groups
- age-appropriate comprehensive sexual education in schools, including review, development and provision of evidence-based and skills-based prevention education for HIV and other sexually transmitted infections
- development and implementation of age-appropriate media-based educational interventions (e.g. information and education on sex and relationships, sexuality and correct and consistent condom use) in order to reach all young people and communities (through, for instance, Internet online chat rooms, mass media, advertisements, posters and postage stamps, and theatre with a focus on improved sexual behaviours)

- ensuring the availability of age-appropriate client-friendly health-care services, particularly for adolescents, through retraining of health-care providers and the implementation of client-centred policies for the provision of health care
- endorsement and support of efforts to control bacterial genital ulcer diseases and eliminate congenital syphilis through an integrated syphilis and genital ulcer disease control strategy, bearing in mind that:
 - elimination of congenital syphilis is becoming increasingly easy to implement at national level;
 - prevalence of chancroid is already decreasing in many countries, but more data and increased effort are needed for the areas where the disease remains endemic;
 - reducing genital ulcer disease prevalence involves many of the interventions that are important in HIV transmission
- targeted health education and counselling to prevent further transmission of HIV and other sexually transmitted infections, including:
 - counselling for patients with HIV, and voluntary HIV counselling and testing of patients with other sexually transmitted infections;
 - linking programmes on mother-to-child transmission of HIV with syphilis screening, and screening of other sexually transmitted infections where feasible, in order to ensure that the potential for congenital syphilis is detected and treatment is given concurrently with HIV care in order to reduce child mortality (Millennium Development Goal 4, target 5)
- facilitating, supporting and promoting universal vaccination against hepatitis B, especially in people with sexually transmitted infections and high-risk persons, and development of strategies for up and coming vaccines such as those against human papillomavirus and herpes simplex virus type 2 infections
- building partnerships for implementing this strategy, and implementing interventions horizontally in sexually transmitted infection/HIV, sexual and reproductive health, and other primary health care services, including developing policy and operational frameworks for horizontal implementation
- seeking additional technical and financial assistance from international and national organizations in order to meet targets and maintain quality of care.

3.6.4 Surveillance and data collection

Countries need to have at their disposal strategic information obtained through an assessment of the epidemiology of sexually transmitted infections and the response to the burden and needs. Accurate data enable strategic planning and provide information for advocacy and prioritization of interventions. As second-generation surveillance for HIV and other such infections has become increasingly feasible, countries should put in place a surveillance system that includes risk behaviour. Information and data should be collected from various population groups, including adolescents in and out of school and uniformed corps, such as the military and the police force.

3.6.5 An integrated approach to implementation: shared responsibilities

In order to accelerate accessibility of services to the population, a collaborative implementation of activities by different health disciplines at various levels of the health system is necessary. Table 4 summarizes key activities that can be undertaken collaboratively among programmes against HIV and other sexually transmitted infections and for sexual and reproductive health and ministries of education and labour. At national level some health implementers can be recruited into this collaborative approach to preventing and controlling sexually transmitted infections, with appropriate local adaptation. These may include women's groups, clubs, community associations and religious institutions.

4. THE ADVOCACY STRATEGY: MOBILIZING POLITICAL AND SOCIAL LEADERSHIP AND FINANCIAL RESOURCES

4.1 Advocacy

However good the technologies and interventions that are available, they are of no benefit to the population without the political will and resources to sustain their implementation. The stigmatization associated with sexually transmitted infections prevents public discussion and community involvement around the issue of their prevention and care. Having such an infection is still considered socially unacceptable, and there are limited patient-based constituent groups who advocate publicly or lobby for programmes related to sexually transmitted infections. Advocacy needs to occur at both the country and global levels to put control of these infections high on the health agenda. Furthermore, strong leadership (with support from civil society), a clear vision and clear messages, strategies and interventions (with a solid science base) are required to inspire action. Advocacy will be enhanced by:

- documenting the situation strategically and packaging the messages;
- identifying key constituencies that can influence policies and resource allocation;
- creating multidisciplinary and multisectoral coalitions and networks to influence decision-makers.

At the country level, advocacy should promote enabling policies and legislation. Existing regulations and legislation should be reviewed to assess their utility and contribution to prevention and care policy, goals and objectives relating to sexually transmitted infections. Consideration should be given to reforming policies and legislation that obstruct the goals of prevention and care according to sound scientific evidence.

Advocacy efforts can build on the experience and lessons learnt from other successful advocacy campaigns such as those for immunization programmes, poliomyelitis eradication, Stop TB, Roll Back Malaria, and tobacco control.

Table 4.**A guide to collaborative implementation of interventions for prevention and control of sexually transmitted infections**

Programme	Primary, prioritized core activities	Collaborative activities
HIV/AIDS	<ul style="list-style-type: none"> • HIV/sexually transmitted infection prevention and care • Condom promotion • Positive prevention • Voluntary HIV counselling and testing • Second-generation surveillance with indicators for sexually transmitted infections • Monitoring and evaluation • Operational research 	<ul style="list-style-type: none"> • Sexual health • Targeted interventions for HIV and sexually transmitted infection prevention and care • Promotion of syndromic management of sexually transmitted infections
Sexually transmitted infections	<ul style="list-style-type: none"> • Guidelines, curriculum development and integration, training, quality assurance • Syndromic management in sexually transmitted infection clinics • Partner treatment guide and plan • Condom promotion • Surveillance for sexually transmitted infections • Targeted interventions for prevention and control of sexually transmitted infections • Monitoring and evaluation • Operational research and cycle of “plan, do, assess and scale up” 	<ul style="list-style-type: none"> • Sexually transmitted infection prevention among persons with HIV • Antenatal syphilis screening • Second-generation surveillance • Voluntary HIV counselling and testing in sexually transmitted infection services
Sexual and reproductive health	<ul style="list-style-type: none"> • Antenatal syphilis prevention and care • Condom promotion for dual protection against sexually transmitted infections and pregnancy • Age-appropriate sexual health guidelines • Treatment for sexually transmitted infections in reproductive health settings • Monitoring and evaluation • Operational research and cycle of “plan, do, assess and scale up” 	<ul style="list-style-type: none"> • Second-generation surveillance
Ministerial (education and youth)	<ul style="list-style-type: none"> • Age-appropriate comprehensive sexual health education and services, including production of information materials in local languages 	<ul style="list-style-type: none"> • School health centres, where feasible
Ministerial (labour, tourism, and other)	<ul style="list-style-type: none"> • Workplace interventions with peer education and information • Screening for and treatment of sexually transmitted infections 	<ul style="list-style-type: none"> • Health clinics with capacity to screen for and treat sexually transmitted infections

4.2 Working with the media

Public health has become news, and the media are now covering health issues and disease threats in an unprecedented fashion. The field of sexually transmitted infections needs to attract more positive media coverage and more proactive work needs to be done with the media. Success stories that emphasize positive achievements are a key component of strong communication. Partnerships with key media representatives should be built in order to promote the goals of the global strategy, and include:

- building the capacity of media personnel to develop and promulgate supportive messages;
- improving the public's perception of prevention, control and care related to sexually transmitted infections;
- helping to mobilize political will;
- helping to diminish stigmatization in society and communities;
- communicating prevention messages and raising awareness about the devastating consequences of sexually transmitted and other reproductive tract infections.

4.3 Building effective partnerships

A broad-based approach that engages multiple partners and sectors should be adopted because the goals of prevention and control of sexually transmitted infections can be achieved only by joining forces. It is therefore crucial to create strategic alliances and coalitions between the private and public sectors, multilateral and bilateral aid agencies, organizations in the United Nations system, the pharmaceutical industry, the media, professional and civil society organizations, and academic and other institutions. Partnerships can increase the visibility, momentum and effectiveness of prevention and care efforts by uniting diverse elements, working synergistically and reducing unnecessary duplication of efforts.

Specific areas and issues for partners to rally around include:

- the control of specific sexually transmitted infections and their complications, such as the elimination of congenital syphilis and the control and elimination of chancroid;
- expanding access to, and the range of, appropriate technologies for prevention and care, such as rapid diagnostic tests for and vaccines against sexually transmitted infections, and female-controlled barrier methods, including microbicides;
- ensuring access to safe and effective, high-quality medicines for treatment of sexually transmitted infections and other essential commodities at affordable prices;
- complementary interventions, such as the prevention of mother-to-child transmission of HIV and syphilis in order to ensure that babies are born free of both infections.

The development of interregional collaboration, regional networks of expertise and experience, provision of regional assistance and the development and strengthening of regional “centres of excellence” are all important and relevant strategies to strengthen national programmes.

4.4 Mobilizing financial resources

In order to implement the strategy there needs to be a mechanism to mobilize additional resources. For developing or resource-limited countries, various sources can be explored. For example, there are resources linked to the Global Fund to Fight AIDS, Tuberculosis and Malaria; countries should take the opportunity to develop proposals for the Global Fund that include strategies to control sexually transmitted infections. At the global level, international agencies should intensify discussion to facilitate provision of funds for sexually transmitted infection control through such mechanisms. There are also other opportunities, such as foundations that have an interest in sexually transmitted infection control in general or for specific populations or interventions. At the national level, wherever sector-wide approaches are an approved funding mechanism, advocacy strategies for adequate resource allocation for programming for the prevention and control of sexually transmitted infections should be developed.
