Regional Strategy for the Prevention and Control of Sexually Transmitted Infections 2007–2015

Breaking the chain of transmission

World Health Organization
Regional Office for South-East Asia

IMPORTANT: ADDENDUM TO THE DOCUMENT *REGIONAL STRATEGY FOR THE PREVENTION AND CONTROL OF SEXUALLY TRANSMITTED INFECTIONS 2007–2015 [Page 2]*

Since the printing of this report in June 2007, India has revised its national estimate of the burden of HIV downwards. The new national HIV estimate as per the Government of India is 2.5 million (range: 2–3.1 million). Based on this, revised estimates will be released of the number of people living with HIV, the number of deaths, and the incidence of new infections in the South-East Asia Region and the world. These revised regional estimates will be released on World AIDS Day, 2007.

Regional Strategy for the Prevention and Control of Sexually Transmitted Infections

2007–2015

World Health Organization
Regional Office for South-East Asia

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Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Clinic
CBO	Community-Based Organization
CT	*Chlamydia trachomatis*
GASP	Gonococcal Antimicrobial Susceptibility Programme
GUD	Genital Ulcer Disease
HBV	Hepatitis B Virus
HIV	Human Immunodeficiency Virus
HPV	Human Papillomavirus
HSV	Herpes Simplex Virus
IDU	Injection Drug User
IUD	Intrauterine Device
MCH	Maternal and Child Health
MDG	Millennium Development Goals
MSM	Men who have Sex with Men
NG	*Neisseria gonorrhoeae*
NGO	Nongovernmental Organization
PAF	Population Attributable Fraction
PID	Pelvic Inflammatory Disease
PLHA	People Living with HIV/AIDS
PMTCT	Prevention of Mother-to-child Transmission
RTI	Reproductive Tract Infection
SCM	Syndromic Case Management
STI	Sexually Transmitted Infection
UD	Urethral Discharge
VCTC	Voluntary Counselling and Testing Centre
100% CUP	100% Condom Use Programme
100% TCP	100% Targeted Condom Programme

Preface

With its large population and young demographics, Asia accounts for approximately 50% of the global incidence of curable sexually transmitted infections (STIs). Four out of ten new infections – one million every two and a half days – occur in countries of WHO's South-East Asia Region alone. Each new infection carries risk of serious morbidity and mortality, with a disproportionate impact on women and children. In addition, high STI prevalence fuels HIV transmission in the Region.

Yet, such a situation can be turned around. As described in this Regional Strategy, solutions exist for most technical challenges. Many common STIs are curable using affordable antibiotics, and public health strategies for prevention and control have been shown to be highly effective. Several of the more prevalent STIs have been reduced to low levels or eliminated from countries in the Region. Importantly, countries that have been successful in controlling STIs have also managed to halt and reverse their HIV epidemics, or to prevent them altogether.

This *Regional Strategy for the Prevention and Control of Sexually Transmitted Infections 2007–2015*, builds on the global strategy endorsed in 2006 by the Fifty-ninth World Health Assembly. It outlines the key public health measures – including reaching vulnerable populations, improving health services and strengthening STI surveillance – that have been shown to work in the South-East Asia Region. It also proposes initial targets for countries and for the Region. WHO will continue to support Member countries to plan, implement, monitor and evaluate their national efforts to prevent and control STIs.

I am confident that Member countries will find this Regional Strategy both relevant and useful. Control of sexually transmitted infections is a vitally important and achievable public health outcome. It will also contribute to achieving several Millennium Development Goals, notably for improving maternal and child health, and for halting and reversing HIV epidemics.

Samlee Plianbangchang, M.D., Dr.P.H.
Regional Director

1 STIs and their Consequences

Global morbidity and mortality

Worldwide, nearly one million curable sexually transmitted infections (STIs) occur each day, half of them in Asia. [1] Where they are common, STIs are among the major causes of serious preventable conditions such as infertility, ectopic pregnancy, cancer and congenital infections (Box 1). Millions more incurable STIs add to the heavy burden of morbidity and mortality for women, men and children. Globally, unsafe sex ranks third among the morbidity risk factors, accounting for over 5% of attributable disease burden, and fifth for attributable mortality. [2] For these reasons, interventions to prevent and control STIs are among the most cost-effective public health measures, which moreover contribute to achieving several Millennium Development Goals (MDGs).

Box 1: STI-related morbidity and mortality [3]

STIs cause serious complications in women (MDG 5)

- Gonorrhoea and chlamydia are the main preventable causes of infertility. Between 10% and 40% of women with untreated chlamydial infection develop symptomatic pelvic inflammatory disease (PID). Post-infection tubal damage is responsible for 30–40% of cases of female infertility.
- Women who have had PID are 6–10 times more likely to develop an ectopic (tubal) pregnancy than those who have not; 40–50% of ectopic pregnancies can be attributed to previous PID.
- Human papillomavirus (HPV) infection results in approximately 500 000 cases of cervical cancer annually. It is the second commonest cancer in women after breast cancer, causing about 300 000 deaths yearly, mostly in resource-poor settings.

STIs are major causes of adverse pregnancy outcomes (MDG 4)

- In pregnant women with untreated early syphilis, 25% of pregnancies result in stillbirth and 14% in neonatal death – an overall perinatal mortality rate of about 40%.
- Up to 35% of pregnancies among women with untreated gonococcal infection end in spontaneous abortion and premature delivery, and up to 10% in perinatal death.
- In the absence of prophylaxis, 30–50% of infants born to mothers with untreated chlamydia or gonorrhoea develop ophthalmia neonatorum, which can lead to blindness.

STIs are important HIV cofactors (MDG 6)

More than 80% of HIV infections are transmitted sexually, and HIV epidemics depend on sexual transmission to spread widely. With an estimated 8.4 million HIV infections, South-East Asia is the second most heavily affected WHO Region. [4]

Similar behaviours put people at risk for both STIs and HIV. In addition, STIs directly increase the chances of transmitting and acquiring HIV (Box 2). Genital ulcers provide the virus with easy access to the bloodstream through disrupted skin and mucous membrane barriers. Other STIs have been shown to greatly increase the viral load in genital secretions as well as the number of inflammatory target cells that the HIV needs for replication. Effective STI treatment restores the integrity of the body's defences and reduces the amount of virus and target cells to lower levels.

Control of sexual transmitted infections is thus critical for the interruption of HIV epidemics. STIs are also sensitive markers of high-risk sexual activity. Monitoring STI rates can thus help in identifying HIV vulnerability, and evaluating the success of prevention programmes.

All STIs are preventable and many are curable. Moreover, several countries have shown that it is possible to reduce STI prevalence on a national scale and to eliminate some infections completely (Figure 1). In doing so, countries have

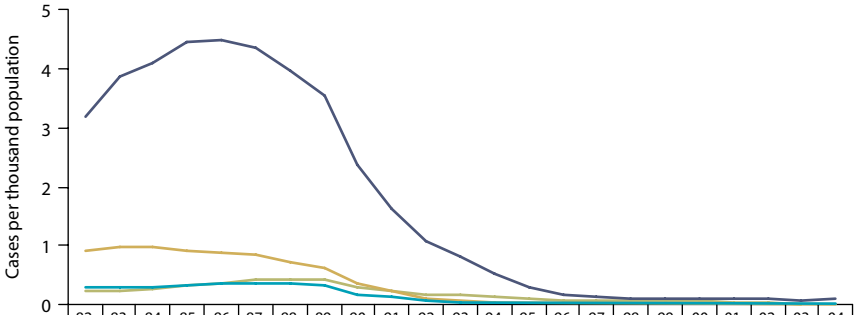
Box 2: STIs and HIV

An extensive body of evidence leaves no doubt that STIs amplify HIV transmission. [5–7] Studies that were adjusted for sexual behaviour estimate a three—to fivefold increase in risk. Since nearly all studies focus on HIV acquisition—rather than on infectiousness or transmission events – these studies underestimate STI cofactor effects at the population level.

Ulcerative STIs (chancroid, syphilis, herpes simplex virus type 2 [HSV-2]) breach the host mucosal barrier permitting easy access of HIV to blood and inflammatory cells, and increase the excretion of HIV in semen. Very high HIV incidence rates were documented among men with genital ulcers in early studies from Thailand, Kenya and India. [8–10] Based on such data, ulcerative STIs have been estimated to increase the risk of HIV infection per unprotected exposure by as much as 10–50 times for women and 50–300 times for men. [8,11]

Other studies have clearly demonstrated how STIs increase the infectiousness of HIV. *Inflammatory* STIs (such as gonorrhoea and chlamydia) increase the HIV viral load in genital fluids, and treatment of the STI reduces the genital HIV viral load to levels comparable with controls. [12–13] Increases in semen viral load have been estimated to increase the odds of transmission per coital act by 8–20-fold. [14]

Figure 1. Incidence of sexually transmitted infections (STIs) per 1000 population in Thailand (1982–2004) [16]



	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	00	01	02	03	04
syphilis	0.22	0.23	0.26	0.32	0.36	0.41	0.41	0.41	0.3	0.22	0.17	0.17	0.15	0.11	0.08	0.08	0.06	0.05	0.05	0.04	0.03	0.02	0.02
gonorrhoea	3.2	3.87	4.11	4.45	4.5	4.36	3.97	3.55	2.37	1.64	1.08	0.8	0.52	0.3	0.17	0.12	0.1	0.09	0.09	0.09	0.09	0.08	0.11
chancroid	0.93	0.99	0.98	0.93	0.89	0.85	0.73	0.63	0.35	0.22	0.09	0.05	0.03	0.01	0.01	0.01	0	0	0	0	0	0	0
LGV	0.29	0.31	0.31	0.32	0.34	0.37	0.37	0.32	0.18	0.12	0.05	0.03	0.01	0.01	0	0	0	0	0	0	0	0	0

reduced complications due to STIs, and slowed or reversed HIV epidemics. This regional strategy builds on such experience to promote replicable interventions and feasible targets for STI control in South-East Asia.

STIs in South-East Asia

Despite overall high incidence and prevalence, STI patterns are variable in South-East Asia. Some countries have high prevalence of curable STIs while others have much lower rates more typical of developed countries. Some countries have high rates of ulcerative STIs while others have few ulcers but high prevalence of bacterial infections such as gonorrhoea and chlamydia.

STI epidemics are also dynamic. Incidence and prevalence can increase or decrease rapidly depending on local conditions and control efforts. Sri Lanka, Thailand and Cambodia, for example, have documented progressively declining rates of STIs over the past two decades; with rapid control of ulcerative STIs and elimination of chancroid being early milestones. [15–17] In these countries, HIV mirrors STI trends—declining or remaining very low—in both high-risk and lower-risk population groups.

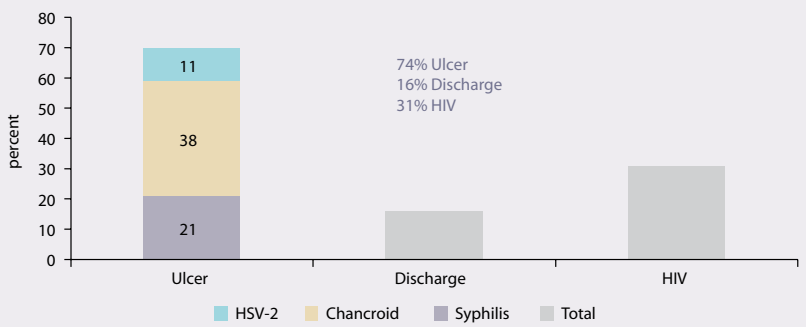
Yet STI control remains poor in much of Asia. Conditions—including high population mobility, commercial sex networks with high rates of partner change and inconsistent condom use—remain highly favourable for STI transmission in much of the Region. When HIV enters these networks, rapid transmission is possible (Box 3).

Box 3: Poor STI control and rapid spread of HIV in Thailand and India

In Thailand, condom use was low and STI rates high among sex workers and clients when the first AIDS cases were reported. [16] STI incidence as high as 76.5 new infections per 100 woman-months was reported among Bangkok massage parlour workers. [18] During 1991–94, HIV seroprevalence reached 47% for brothel workers and 13% for other sex workers in Chiang Rai. [19] By the early 1990s, HIV was spreading widely through male bridging populations. HIV incidence in 1991 was as high as 2.5/100 person-years for male military conscripts from northern Thailand. [20] Genital ulceration was strongly associated with HIV seroconversion, and prevalence of syphilis, chancroid, and HSV-2 increased with greater frequency of contact with sex workers. [21] By 1993, 12% of young military recruits based in northern Thailand were found to be HIV positive; HIV seropositivity was associated with commercial sex contact, STI and inconsistent condom use with sex workers. [22] Incidence of STIs was 17 per 100 person-years, mostly gonorrhoea and chancroid. [23] By 1996, HIV prevalence was as high as 7.1% among pregnant women in Chiang Rai. [24]. Among women with no risk factors for HIV other than sex with an HIV-infected partner, 46% were HIV-positive; these women were twice as likely to be HIV positive if their partners had a history of STI. [25]

Similar patterns and trends were seen in India (Figure 2). [26] In Pune, STI patients with HIV were frequently found to have had contact with a sex worker or were female sex workers themselves; lack of condom use, genital ulcer or other STIs were significant risk factors. [27–29] Both ulcerative and non-ulcerative STIs were associated with recent HIV seroconversions in prospective cohorts, and with viral shedding. [30-32] Among STI clinic attenders who were recent HIV seroconverters, unprotected sex with a sex worker and a genital ulcer were independent risk factors for HIV infection. [30] In a cohort of HIV-seronegative persons evaluated prospectively every 3 months, HIV incidence was 26.1/100 person-years among sex workers and 8.4 among other women; recurrent genital ulcer disease and urethritis or cervicitis during the follow-up period were independently associated with a 7- and 3-fold increased risk of HIV seroconversion. [31]

Figure 2. High rates of ulcerative STIs, among 215 first-time STI Patients, Mumbai, India 1995 [26]

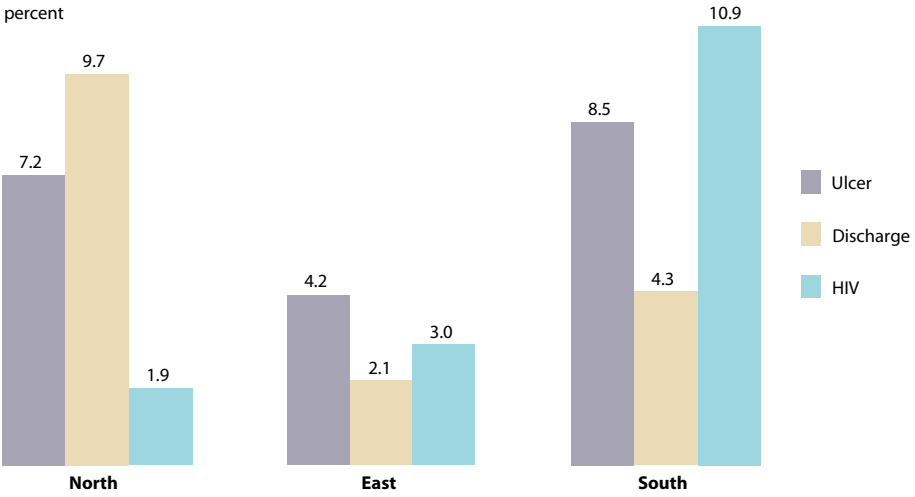


Early epidemics in Thailand and India highlight conditions that permitted extremely rapid dissemination of HIV through overlapping sexual and drug injecting networks. These included low condom use in commercial sex and high rates of ulcerative STIs. Such conditions have certainly changed or are changing in Thailand and in parts of India. Elsewhere in the Region, however, conditions still vary greatly.

The highest STI prevalence rates in the region continue to be found among sex workers. In 1999–2000, syphilis seroprevalence among sex workers in seven sites in India ranged from 7% to 56%; [33]. Gonorrhoea prevalence was 36% among street-based sex workers in Dhaka, Bangladesh compared to only 0.5% among women attending health services. [34–35] More than half of sex workers surveyed in 10 Indonesian cities in 2005 were found to have at least one curable STI. [15] The proportion of sex workers with at least one STI was 67% in Bangladesh and 72% in Nepal. [36–37] HIV prevalence is also consistently higher among sex workers than among other populations. [38] Yet only 20% of sex workers in the Region are estimated to have access to basic prevention services. [39]

With the highest rates of partner change, sex workers are not only exposed frequently to STIs but have many opportunities to transmit infection. Males, particularly those who travel frequently or are separated from families for long periods, may serve as

Figure 3. STI syndromes and HIV prevalence among long-distance truck drivers, India (2001) [40]

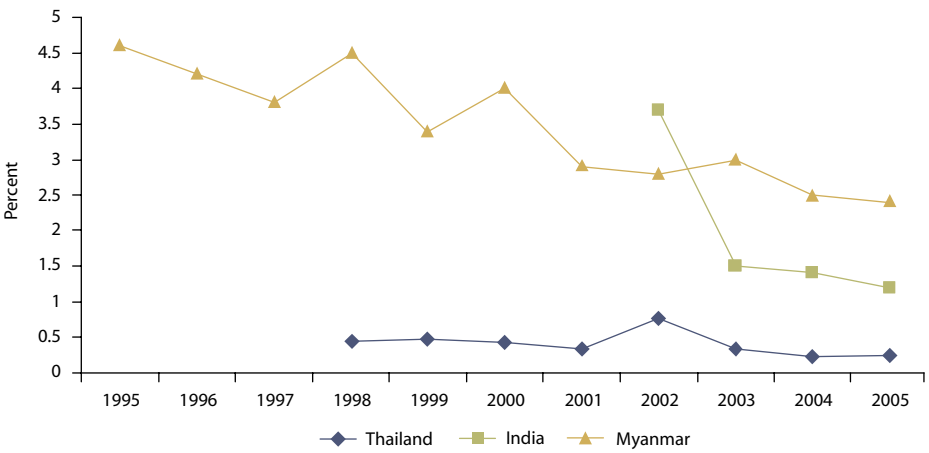


efficient bridging populations for STI transmission to the general population. Among long-distance truck drivers surveyed in 1999–2000 in three regions of India, between 4 and 8.5% had genital ulcers and 2 to 11% were HIV seropositive (Figure 3). [40]

Men who have sex with men (MSM) may have many casual or commercial partners. At highest risk for STI are MSM and transgendered persons (*waria, hijra, kitoi*, etc.) who sell sex. A high proportion of MSM also have sex with women. In Andhra Pradesh, MSM surveyed had six different male sex partners in the past four weeks; 56% did not use condoms even once during the last three contacts; 42% were currently married to women and 50% had vaginal/anal sex with women in the past three months; of these, 84% did not use a condom consistently. [15]

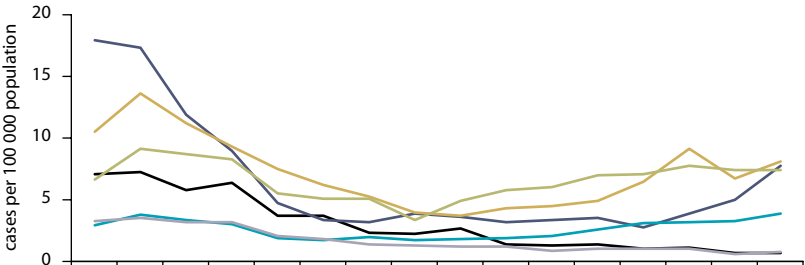
In Asia as elsewhere, epidemics of sexually transmitted infections including HIV do not spread evenly through populations. [41] Infection spreads to lower-risk populations largely through male bridge groups that have contact with both high-risk (sex workers) and lower-risk populations (spouses, girlfriends). Antenatal syphilis screening data can be a marker of sexual transmission trends (see Figure 4) in the general population but these data are reported from few counties. HIV prevalence in pregnant women remains below 1% in Asia with the exception of Thailand and several states of India.

Fig 4. Trends in antenatal syphilis rates – India, Myanmar, Thailand [15, 60]



STI surveillance is incomplete in most countries. In some areas, STI patterns are reportedly changing from high rates of curable and ulcerative STIs to lower overall rates with a higher proportion of viral STIs (Figure 5). This would be a good indication that interventions are working and that sexual transmission is decreasing. However, if both coverage of interventions and surveillance are poor, continued transmission in underserved areas may go undetected and can sustain high prevalence.

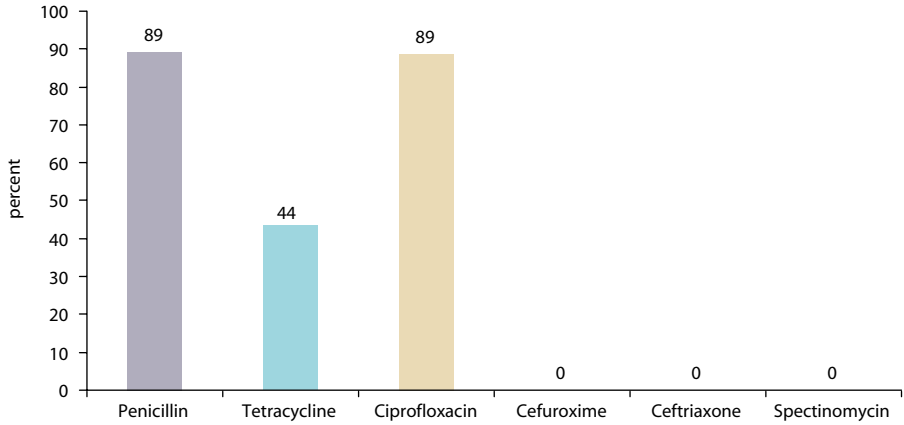
Figure 5. STI prevalence trends, Sri Lanka (1989–2004) [15]



	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Infectious syphilis	7.1	7.2	5.8	6.4	3.7	3.7	2.3	2.2	2.7	1.4	1.3	1.4	1	1.1	0.7	0.7
Gonorrhoea	17.9	17.3	11.9	9	4.7	3.4	3.2	3.9	3.6	3.2	3.4	3.5	2.8	3.9	5	7.8
NG infections	10.5	13.6	11.2	9.3	7.5	6.2	5.3	4	3.7	4.3	4.5	4.9	6.5	9.1	6.7	8.1
Genital herpes	6.6	9.1	8.7	8.3	5.5	5.1	5.1	3.4	4.9	5.8	6	7	7.1	7.8	7.4	7.4
Genital warts	2.9	3.8	3.4	3	1.9	1.7	2	1.7	1.8	1.9	2.1	2.6	3.1	3.2	3.3	3.9
Trichomoniasis	3.3	3.5	3.2	3.2	2.1	1.8	1.4	1.3	1.2	1.2	0.9	1	1	1	0.6	0.8

Monitoring antibiotic susceptibility trends (particularly for *Neisseria gonorrhoeae*) is important to inform national STI treatment guidelines. As elsewhere throughout Asia, Sri Lanka has documented high resistance to quinolones and continued sensitivity to ceftriaxone/cefixime (Figure 6).

Figure 6 Resistance of *Neisseria gonorrhoeae* to commonly used antibiotics, Sri Lanka (2005)




LEVIS

2 Global and Regional Response

WHO's global strategy

WHO recently launched its *Global strategy for the prevention and control of sexually transmitted infections for 2006–2010*. The global strategy provides strong economic and public health justification for an accelerated response to STIs, and shows how such action can contribute to achieving the Millennium Development Goals (MDGs) of reversing the spread of HIV and lowering maternal and child mortality (Box 4).

The technical content of the global strategy deals with methods to promote healthy sexual behaviour, the provision of barrier methods, how to deliver effective and accessible care for STIs, and how to improve methods for monitoring and evaluating STI control programmes. It points out that STIs occur with the highest frequency

Box 4: Why invest in STI prevention and control now?

To prevent adverse pregnancy outcomes

The fourth Millennium Development Goal seeks to reduce child mortality by 2015.

To prevent serious complications in women

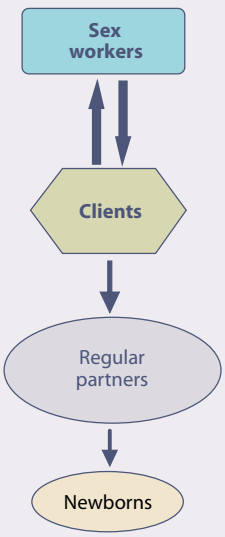
The fifth MDG seeks to reduce maternal mortality by three-quarters by 2015.

To prevent HIV infection

The sixth MDG calls on nations to reverse the spread of diseases, especially HIV/AIDS.

among marginalized populations who frequently have poor access to services and emphasizes that the public health benefits of improving coverage to these groups can be substantial (Box 5).

Box 5: Transmission dynamics of STIs



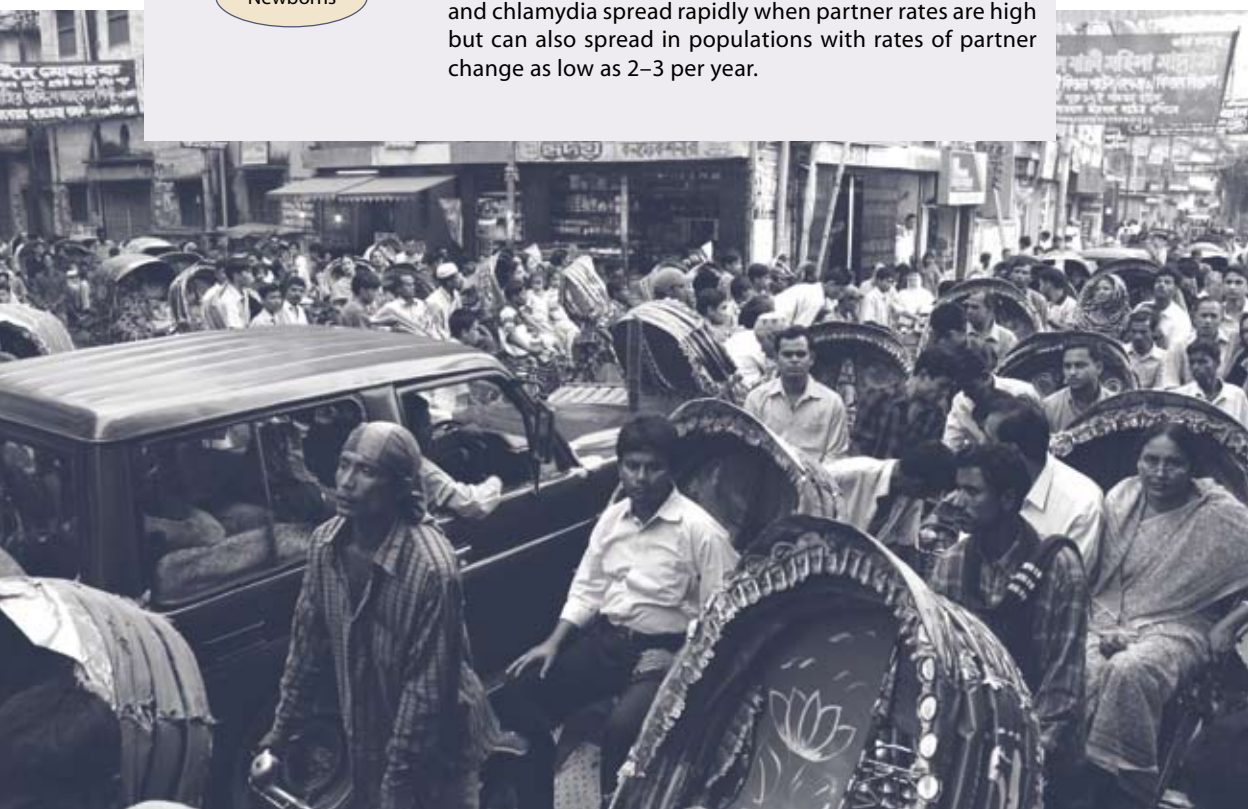
Within a given population, most STI transmission takes place among people with the highest rates of partner change.

The rate of growth or decline of an STI epidemic is determined by $\mathbf{R_0}$, the basic reproductive number. $\mathbf{R_0}$ represents the expected number of secondary cases produced by a single index case.

$\mathbf{R_0}$ is a product of three variables, represented as $\mathbf{R_0} = \beta\mathbf{cD}$, where β is the transmission efficiency of the pathogen (infectiousness), **c** is the rate of sexual partner change and **D** is the duration of infectiousness.

Condom use reduces β, behaviour change can reduce **c**, and early, effective STI treatment reduces **D**.

Some STIs (like chancroid) require very high rates of partner change to survive. Others such as gonorrhoea and chlamydia spread rapidly when partner rates are high but can also spread in populations with rates of partner change as low as 2–3 per year.



The strategy also makes a strong case for expanding the provision of good-quality STI care more widely into primary health care, reproductive health services and HIV services. It emphasizes opportunities to increase coverage by working collaboratively with community-based organizations, private providers and other government sectors such as education, labour, police, transport and tourism. The steps needed to develop health systems capacity are explained as is the need for reliable STI surveillance to guide control efforts.

This regional strategy is an adaptation of the global strategy for application in the South-East Asia Region. Reference is made to sections of the global strategy throughout this document, particularly in areas of advocacy and policy.

Building on regional success

In the South-East Asia Region, experience supports the combination of approaches outlined in the global strategy. Improved outcomes have resulted from improving STI services, reaching the highest-risk populations and basing programmes on reliable STI data.

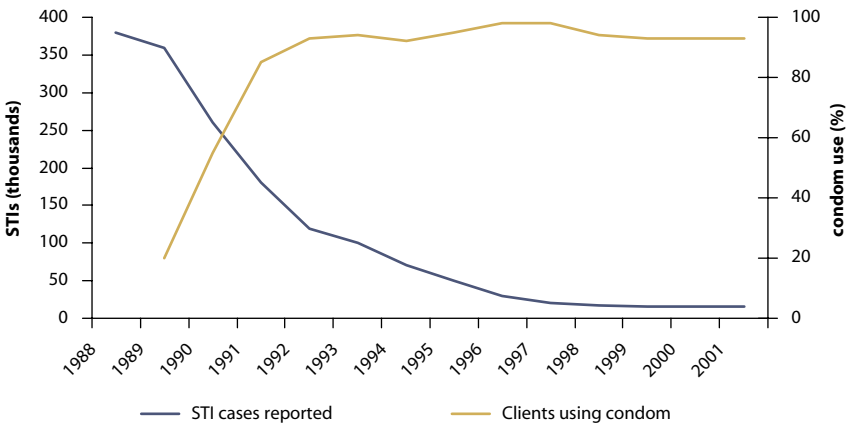
The 100% Condom Use Programme (CUP) in Thailand has enabled sex workers to demand condom use and access STI care. It has also had a large-scale public heath impact. Rates of curable STIs fell by over 95% during the 1990s and HIV prevalence

declined in most population groups (Figure 7). By 2002, an estimated 5.7 million HIV infections had been averted; this includes sex workers and their clients but also – factoring in averted secondary infections—far larger numbers of people at lower risk. [41] Similar results are also being reported to a varying degree where this approach is being adapted in other Asian countries including Cambodia, China, Mongolia and Myanmar. [42]

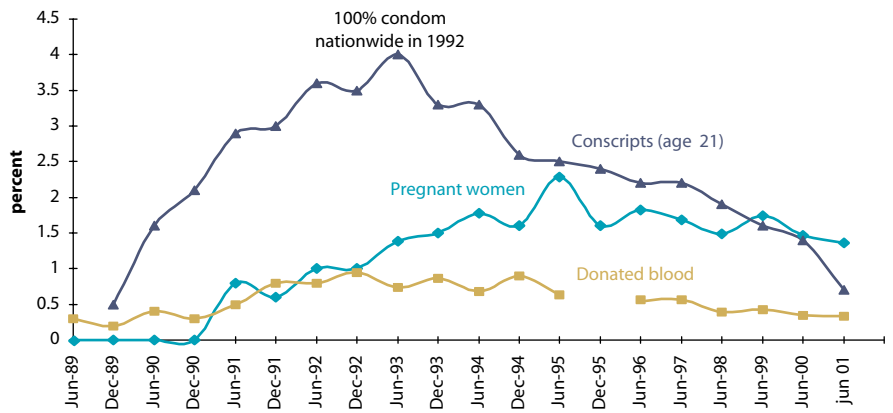
In the Sonagachi district of Kolkata, India, a different approach was taken. [43–46] Beginning with peer interventions and clinical STI services, a community

Figure 7. Thailand: (a) STI incidence and condom use; (b) HIV prevalence among military conscripts and pregnant women [15]

(a)



(b)



Box 6: 100% Condom use in commercial sex

Thailand 100% Condom Use Programme (100% CUP). Implemented through a network of public health STI clinics, the 100% CUP achieved early success by saturating the coverage of direct (brothel-based) sex establishments where condom use was mandated. The responsibility for enforcing condom use was on the establishment, which could be closed if it was non-compliant (although this was rarely done). One of the most important activities was local advocacy with the police and other gatekeepers. As sex work changed to less direct forms (massage, karaoke and bar-based), interventions were adapted to include more outreach and increased involvement of sex workers. The Thai response highlights the importance of political commitment and public investment, a rapid response based on reliable epidemiological information, and multisectoral collaboration.

Myanmar 100% Targeted Condom Promotion (100% TCP). Adapted from the 100% CUP experience in Thailand and Cambodia, the 100% TCP in Myanmar attempts to reach sex workers and their clients through peer outreach, establishment visits and STI clinics. A clear plan of start-up activities—formation of condom core groups, training of peers and clinical staff, etc.—has been rolled out in new sites. In five years, the 100% TCP has been scaled up to cover 154 out of 350 townships in the country.

empowerment model was progressively developed to take on a range of health and social harms faced by sex workers. Today, HIV prevalence among sex workers in Kolkata remains low (11%), compared to rates higher than 50% reported from the red-light districts of Mumbai, Pune and Goa. [44]

Elsewhere in India, experience from Sonagachi, Thailand and other places informs a combined approach to scaling up interventions with sex workers and MSM. The

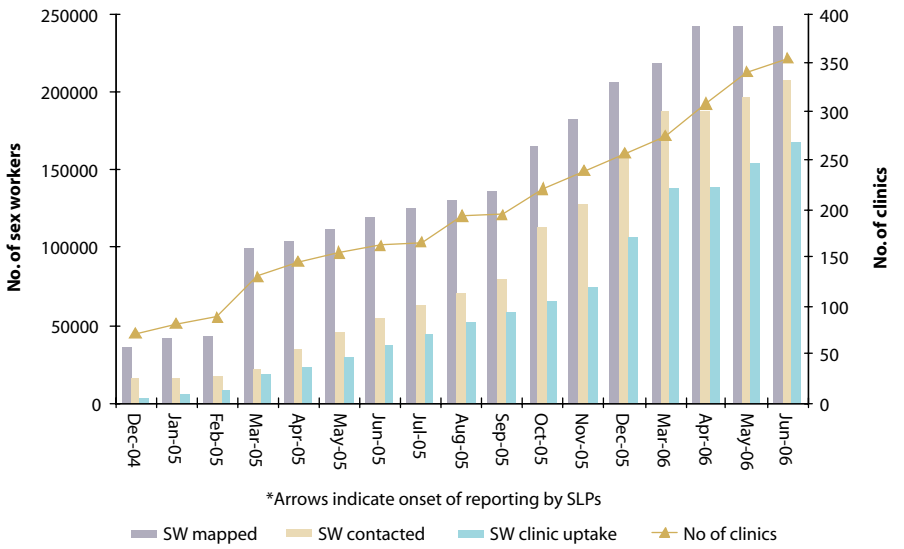
Box 7: Sex worker empowerment

Sonagachi empowerment model. STI/HIV services are one part of a broader effort to improve conditions under which sex workers live and work (community-led structural interventions). Sex workers participate actively in all aspects of both community interventions and clinic-based services. HIV prevalence remains low in Kolkata compared with other Indian cities. Over 60 000 sex workers participate throughout the state of West Bengal. Savings and credit schemes have reduced dependency on sex work, and self-regulatory boards effectively address a range of abuses from trafficking to child prostitution.

Avahan India AIDS Initiative. To scale up effective interventions for sex workers and other high-risk populations in India's six highest HIV-prevalence states, Avahan supports NGOs to organize outreach, community mobilization and dedicated clinics for sex workers (Figure 8). These clinics provide STI services including syndromic case management, regular check-ups and presumptive treatment of asymptomatic infections. Condoms are promoted and distributed by outreach and clinic teams. Local advocacy work is carried out with the police and others to promote enabling conditions for prevention work. Sex worker involvement is promoted in all aspects of the intervention, from community outreach to provision of clinical services.

India AIDS Initiative (Avahan), funded by the Bill and Melinda Gates Foundation, is scaling up interventions with sex workers and other high-risk populations in India's six highest HIV-prevalence states. [47–49] Within two years, clinics with

Figure 8. Scale up of clinical services and outreach for sex workers – Avahan [48–49]



community outreach for sex workers have been established in over 300 settings covering 77 districts. Mapping and size estimation have identified more than two hundred thousand sex workers in four large states; most of these sex workers have been contacted through peer outreach and have attended the clinic at least once. Supervision and monitoring facilitate standardization of services across sites.

In summary, several countries acted quickly to interrupt the transmission of HIV and STIs in areas where they were spreading most rapidly. These Regional successes contribute to global experience with STI control and HIV prevention (Box 8).

Box 8: STI interventions for HIV prevention

WHO recently reviewed the global evidence on STI control and HIV prevention. Strong evidence supports the epidemiological link between STIs and HIV, and the biological mechanisms for STIs to act as cofactors for HIV transmission.

Intervention trials have had mixed results, with little effect seen in trial sites where rates of curable STIs were already low. In settings with high STI prevalence, even limited STI interventions have been shown to have an impact on HIV transmission. In rural Mwanza, Tanzania, for example, merely improving STI case management in clinics reduced the incidence of new HIV infections by 40%. Other intervention trials have had disappointing results, showing little impact on either STI prevalence or HIV incidence.

Extensive modelling using trial and other data strongly support the importance of STI interventions for HIV prevention. Important conclusions include:

- STI control is most effective in reducing HIV transmission where rates of curable STIs are high.
- Ulcerative STIs, where common, are associated with the highest rates of HIV transmission.
- New HIV infections are most strongly linked to chancroid (high population attributable fraction [PAF]), especially in the early stages of HIV epidemics where STI control is poor.
- As risk behaviour changes and STI control improves, HIV incidence and PAFs for curable STIs decline, and the importance of incurable STIs (such as HSV-2) increases.

Note: No intervention trial to date has succeeded in controlling STIs to the extent achieved in countries such as Thailand and Cambodia. These regional experiences provide the strongest evidence to date of the potential of effective STI control in reducing HIV transmission.

The aim of this strategy is to provide direction for countries in the Region to review their STI epidemics and the status of their STI control programmes, and to set realistic priorities and targets. Regional experiences are highlighted to allow countries to adapt successful strategies for their STI programmes. Technical guidelines and tools are available to support interventions and services promoted in this document.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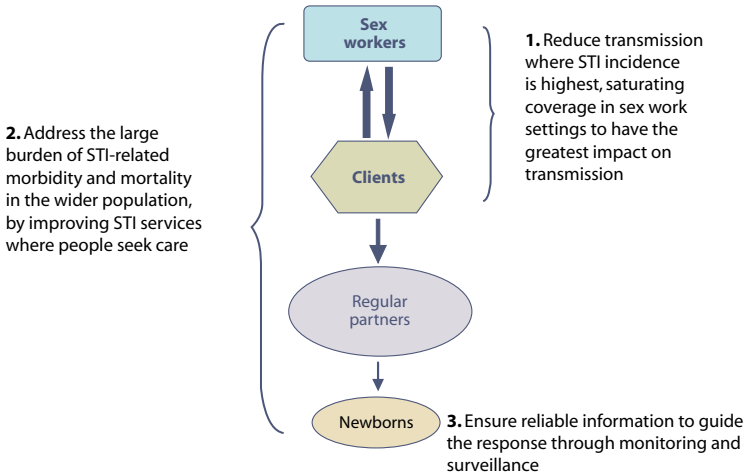
3 An STI Control Strategy for South-East Asia

Based on what is known about the transmission dynamics of STIs and patterns of risk in Asia, a regional control strategy would need to intervene simultaneously on several levels. First, it should reduce transmission where STI incidence is highest, saturating coverage in sex work settings to have the greatest impact on transmission. Second, it should address the large burden of STI-related morbidity and mortality in the wider population, by improving STI services where people seek care (primary health care, reproductive health clinics, private providers, etc.). Finally, reliable information is needed on STI trends and risk behaviours; better monitoring and surveillance would help programme managers to assess needs and programme performance, and to allocate resources to strengthen control efforts. These needs are illustrated below for different populations.

Figure 9. Focus of STI control objectives



These considerations, together with evidence and approaches from the WHO global strategy, inform the South-East Asia Regional Strategy for the Prevention and Control of STIs, which has the following goal and objectives.

Goal

- To reduce STI prevalence and STI-related morbidity and mortality

Objectives

- **Cut STI incidence in high transmission networks** to interrupt transmission and reduce prevalence at the population level
- **Improve STI case management for all** to further reduce morbidity and mortality
- **Ensure reliable data** to guide the response.

Guiding principles

- The regional strategy builds on several guiding principles which are essential to achieving the above goal and objectives. A broader discussion of these issues can be found in the global strategy.

Public health orientation

Sound public health principles provide the framework for efforts to control STIs and monitor progress. Reliable epidemiological and behavioural data – including incidence, prevalence, behavioural trends and programme coverage – should guide the response. For example, the 100% CUP in Thailand was closely monitored by tracking rates of condom use and STIs, first in one province, then nationwide. Interventions thus shown to be effective can progressively be scaled up for greater coverage.

Respect for human rights

Active involvement of affected communities is essential both for creating a sense of ownership and for increasing acceptance of the programme. Involvement in programme implementation will lead to greater utilization of services and better outcomes.

An enabling environment is necessary to reduce vulnerability and to increase access to interventions. For example, sex workers, MSM and other highly marginalized populations may avoid health services altogether if they fear identification and harassment by the police. Efforts to build a supportive and enabling environment—by gaining the cooperation of "gatekeepers" such as managers and the police—will strengthen community trust and engagement in efforts to improve STI prevention and control.

Attention to gender and cultural realities that influence norms and behaviour. For example, women may have to ask their husbands for permission to seek treatment, or health-care providers may be judgemental when sex workers and young people seek condoms or STI treatment. Addressing such attitudes and the context in which sexual relations occur will help to facilitate prevention and treatment-seeking behaviour.

Commitment to a multisectoral response

Active involvement of civil society contributes to a successful and sustained response. The participation of key stakeholders, policy-makers, political officials at various levels, health workers, NGOs as well as the targeted populations themselves can help make the implementation acceptable and successful.

Involvement of private health-care providers in the public health response to STIs. The private and informal health sectors are generally accessible and acceptable to local communities and are widely consulted for health problems. Efforts should be made to improve STI services wherever they are provided by these sectors.

Effective leadership and management

A strong level of political and financial commitment at the national and local levels to controlling STIs is needed to build an effective response. Political support is needed to leverage the resources needed to scale up programmes for wider coverage.

Effective programme management with sufficient technical support is most critical. Key elements required for effective and efficient programme management include goal- and target-setting, implementation support, resource mobilization, capacity building, monitoring and evaluation. The goal is to ensure that health-care providers and others have the means to provide effective STI-related interventions and services.

Strategic framework and key priorities

To achieve the goal and objectives mentioned above, this regional strategy calls for concerted action in three areas as highest priority. These components work together as part of a public health response that uses data on STI patterns and trends to direct control efforts. Each objective is expanded in the following strategic framework.

Table 1. STI programme priorities for HIV prevention

Goal	Expected benefits	Programmatic focus
STI control = reduced prevalence, morbidity and mortality Multiple intervention components (as below)	Fewer STI-related complications Fewer HIV cofactors reduces efficiency of HIV transmission among high- and low-risk populations	Elimination and control of ulcerative STIs (chancroid elimination and control of syphilis and HSV-2) Control of other curable STIs (gonorrhoea, chlamydia, trichomonas)

Objectives	Expected benefits	Programmatic focus
1. Cut incidence in high-transmission networks	Largest impact on STI transmission and prevalence Feasible interventions have population impact	Sex workers and their clients Men who have sex with men
2. Improve STI prevention and case management for all	Broad programme coverage complements targeted interventions Effective treatment shortens duration of STI and prevents complications	Public and private sector health facilities (PHC, reproductive health, STI clinics, etc.) Symptomatic STI patients, especially men, who can be treated and counselled Women and young people using reproductive health and other health-care services Identify and treat STIs early among people living with HIV and reduce genital viral shedding
3. Ensure reliable STI data to guide response	Surveillance and monitoring to guide efforts	Coverage data Universal and sentinel STI case reporting Syphilis prevalence in antenatal clinics (ANCs) (data from routine screening) STI prevalence surveys

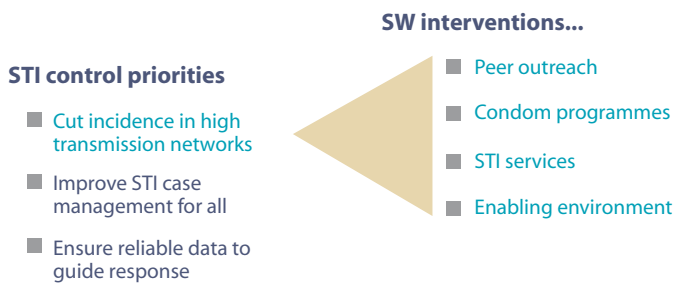
Objective 1 – Cut STI incidence in high-transmission networks

Most STIs in any society occur among population subgroups with the highest rates of sexual partner change (*high-transmission networks*). Sex work is a prime example – clients infect sex workers who can then pass on the infection to many other clients. These clients act as a transmission bridge to lower-risk populations – including wives and regular partners. Similarly, MSM and transgendered persons may be a part of overlapping high-transmission networks.

Such a model of STI transmission dynamics (Box 1) is the basis for targeted interventions such as the 100% CUP. Experience from Thailand, Cambodia and elsewhere has demonstrated that effective interventions reaching high-transmission networks can bring down STI prevalence rapidly. Importantly, it has been shown that reduction in the prevalence of STIs following targeted interventions are not confined to sex workers and their clients, but extend to lower-risk populations as well.

Based on the experience of several countries in the Region, the regional strategy recommends scaling up of targeted interventions to achieve saturation coverage of commercial sex and MSM networks, including clients of sex workers where they can be reached. Figure 10 provides an overview of the main components which are discussed in more detail below.

Figure 10. Main components of targeted interventions for sex workers



The main components of interventions for high-transmission networks include:

- *Peer outreach*. Sex workers, MSM and transgendered persons are frequently marginalized and criminalized, and will often avoid coming in contact with official services including health-care. Programmes need a strategy (or several strategies for different situations) for making contact with vulnerable populations, gaining their trust, promoting services and involving them in interventions. Without a feasible plan for reaching at least the most active sex workers, targeted interventions will have little impact. Outreach is most most effective when it involves the affected populations themselves working to promote condoms and services to their peers.
- *Condom programmes.* The most important intervention outcome to reduce sexual transmission in commercial sex networks is to achieve high rates of condom use (*see* 100% CUP). With condom use greater than 90%, there is little opportunity for STI transmission and prevalence falls quickly. Condom supply and promotion are important but not enough. In commercial sex settings, every effort should be made to influence the structure of sex work to make condom use the norm for all clients. This may be easier to do where sex work is establishment based, but high rates of condom use have also been achieved among freelance sex workers in many settings. [42]

- *STI services*. STI services complement and strengthen condom programmes in a number of ways. Treating STIs in sex workers and clients reduces secondary transmission and helps reduce STI prevalence as condom use increases; and lower STI prevalence reduces the risk of HIV transmission when condoms are not used or fail. Perhaps most importantly, good clinical services provide additional incentive for sex workers to participate in prevention programmes, and more opportunities to reinforce safer sex and condom use. Clinics also serve as a base for 100% condom programme implementation and monitoring in many countries. Condom promotion during clinic visits reinforces promotion by peers in establishments or on the street. High STI rates from clinics serve as warning signs that condom use is inconsistent in specific locations or establishments, and can help guide outreach efforts.

- *Enabling environment*. There are many factors that work against the prevention of STI and HIV in sex work settings. Sex work is illegal in most places and police action or interference from organized crime can prohibit access or disrupt interventions. Sex workers themselves may be isolated and have little power to decide whether condoms are used or how sex is performed. Sex work interventions should thus include advocacy to explain the public health objectives of the interventions to the police, managers and others involved in sex work. Strategies to progressively involve sex workers in outreach and other activities are important to build a sense of common norms and behaviour.

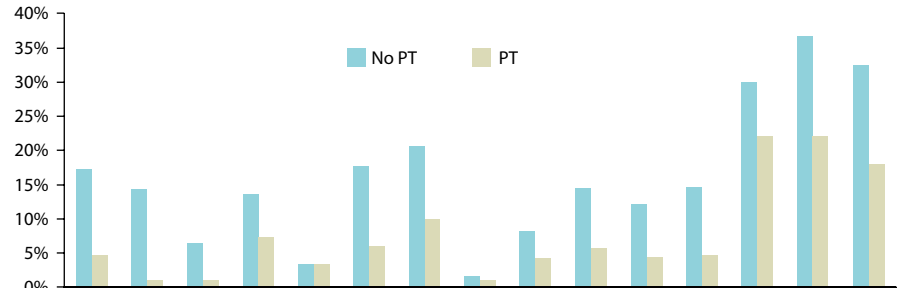
Increasingly, these different elements are being combined in successful interventions in different settings. In some, stronger STI interventions such as regular screening or presumptive treatment (Box 9) are being used to rapidly decrease STI rates among sex workers and their clients as other intervention elements are being strengthened.

Box 9: Periodic presumptive treatment

In areas where STI transmission is high and existing services are poor or inaccessible to those who need them, short-term interventions may be indicated to rapidly bring down high rates of curable STIs. Presumptive (epidemiological) treatment strategies targeting core groups with a high STI prevalence and exposure have been effectively used for short-term reduction of STI rates. As STI rates come down and conditions that justify presumptive treatment disappear, other interventions (increased condom use, effective STI case management) are needed to sustain control. WHO is developing guidance on such interventions and related operations research. Figure 11 summarizes the global experience in reducing STI prevalence among sex workers using interventions that included presumptive treatment strategies. [50]

Presumptive treatment protocols should be adapted to local conditions. Antibiotic treatment (azithromycin 1g + cefixime 400 mg) can be given to all sex workers regardless of symptoms. Periodic presumptive treatment (PPT) is given at 1–3-month intervals until STI rates are low and other control measures are in place. PPT should always be combined with efforts to increase condom use and improve clinical services for sex workers.

Figure 11 Gonorrhoea/chlamydia and genital ulcer prevalence among sex workers following interventions with presumptive treatment, WHO consultation (September 2005) [50]



	RSA Lesedi NG	RSA Lesedi CT	RSA Lesedi GUD	Benin Ghana NG	Benin Ghana CT	Kenya NG	Kenya CT	Kenya GUD	India NG	India CT	RSA Hill-brow NG	RSA Hill-brow CT	Mada-gascar NG CT	Philip-pines NG CT	Laos NG CT
No PT	17.3%	14.3%	6.4%	13.5%	3.2%	17.7%	20.6%	1.6%	8.1%	14.5%	12.1%	14.7%	30.0%	36.7%	32.4%
PT	4.7%	0.9%	0.9%	7.3%	3.2%	5.9%	9.9%	0.9%	4.2%	5.7%	4.4%	4.6%	22.0%	22.1%	18.0%

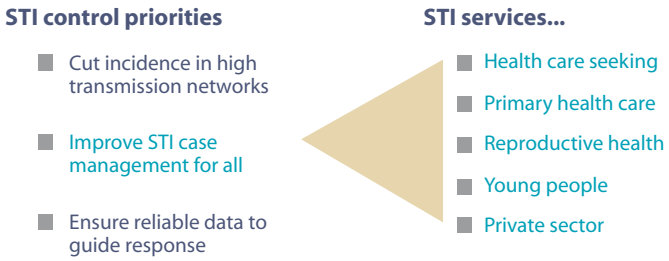
Attention also needs to be given to other vulnerable populations who may be at very high risk for STIs. Many of the interventions outlined above can be adapted for use among MSM, transgendered persons and drug users. Sexual risk behaviours may be related to selling or buying sex, or to drug use and casual sex with multiple partners. There are good models of interventions that have proven effective in reaching such marginalized populations.

Objective 2 – Improve STI prevention and case management for all

STI services should provide comprehensive STI prevention and case management, which includes early detection, effective treatment and prevention interventions for anyone who seeks care in any health-care setting. Comprehensive STI case management limits the spread of infection to sexual partners, reduces congenital transmission and prevents the development of long-term complications among those already infected. By raising the general awareness of STIs and by improving STI services in health facilities – including primary health care, reproductive health, youth clinics and among private providers – the community burden of STI-related morbidity and mortality can be further reduced.

People should be able to recognize the symptoms of STIs, realize the importance of seeking care early and have easy access to accurate diagnosis and effective

Figure 12. Strategies to improve STI prevention and case management for all



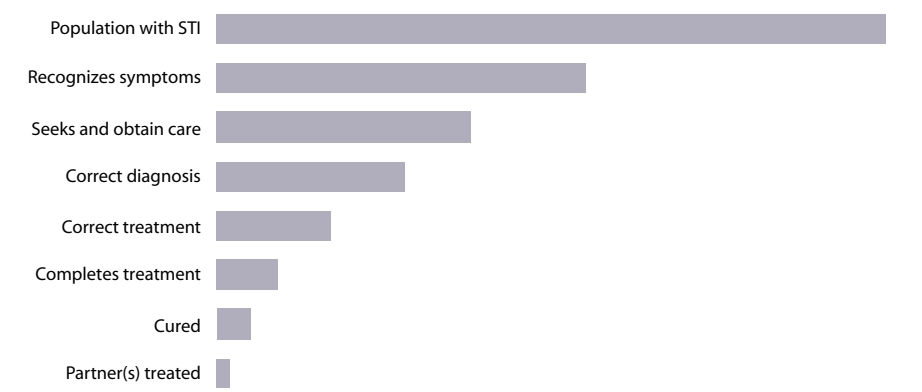
treatment. Figure 13 illustrates a population with STI and analyses barriers to effective treatment. Unless each of these barriers is addressed, services will have little impact on STI transmission or complication rates.

It is clear that, while improving STI care at health-care facilities can address lower-level barriers (beginning with correct diagnosis), broader community-oriented approaches are needed to increase the coverage and utilization of those services. STI programmes should thus widely promote accessible, acceptable services which offer comprehensive and effective case management. Special attention should be paid to reaching young people, migrant workers and other male bridging populations.

Promotion of services

A major problem in STI control is that many individuals infected with STIs are unaware of their infection or delay seeking treatment. People with symptoms of STI frequently attempt to self-medicate or buy antibiotics directly from pharmacies

Figure 13. Barriers to effective STI management and programmatic response



before seeking treatment at health-care facilities. Health-care seeking behaviour can be improved by raising awareness of STIs and promoting early treatment. Efforts to raise awareness of STI symptoms and promote early use of health-care services should reach widely into communities.

STI case management

The components of comprehensive case management of STI patients include:

- making a correct diagnosis by syndromic or laboratory diagnosis
- providing effective treatment
- reducing/preventing future risk through education and counselling
- promoting and providing condoms, and
- ensuring that sexual partners are notified and treated.

Whenever an infection is diagnosed or suspected, effective treatment for STIs should be promptly provided to avoid the development of complications and to break the chain of transmission. Patients should receive education and counselling on treatment compliance, partner management, risk reduction and condom use. Treatment or referral should be provided for any complications.

Syndromic management for STIs

STIs are frequently diagnosed on clinical grounds or by laboratory tests, often resulting in misdiagnosis and treatment delays. Moreover, the feasibility of

laboratory-based diagnosis is often limited due to the costs of maintaining a laboratory, a consistent supply of test kits and ensuring quality control. For these reasons, WHO recommends syndromic case management (SCM) using simple flowcharts at the primary health-care level[1]. SCM is based on identifying syndromes—defined by symptoms and easily recognized signs—and provides treatment for the most common organisms responsible for each syndrome. It also includes patient education on treatment compliance, partner treatment and prevention of future infection. The syndromic approach has been shown to be highly effective for most STI syndromes including urethritis in men, and genital ulcers in both men and women. Syndromic management of vaginal discharge is cost-effective in treating vaginitis due to trichomoniasis, bacterial vaginosis or candidiasis, but is neither specific nor sensitive for cervical infections due to gonorrhoea or chlamydia, especially among low-risk women. The asymptomatic nature of cervical infections in women requires additional strategies.

The strengths and limitations of SCM, together with strategies to detect and treat asymptomatic infections, are taken into account in different settings serving populations with different STI risk (Box 10).

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

Guidelines for the management of sexually transmitted infections. Geneva, World Health Organization, 2003.

Box 10: STI screening and presumptive treatment

Syndromic case management (SCM) is a starting point for improving STI services for those who need them. However, STIs are often **asymptomatic**, especially among women. There are several options for detecting and managing asymptomatic infections, and different strategies are recommended for women at high risk and for those at lower risk. These strategies include screening in settings where this is feasible, as well as presumptive treatment when STI risk is very high.

Women at low risk (such as Maternal and Child Health [MCH] clinic attenders)	**Women at high risk** (such as sex workers)
▪ The most common example of STI **screening** is routine testing of pregnant women for syphilis at antenatal visits. This is a highly cost-effective intervention and a potential source of STI prevalence data for the general population. ▪ **Screening** for other STIs – especially cervical infections such as gonorrhoea or chlamydia – is expensive and technically difficult with the available diagnostic methods. Unless the prevalence of these infections is very high, it is more cost-effective to simply treat women with vaginal discharge for common reproductive tract infections (RTIs) as per national guidelines.	▪ **Screening** can be done by clinical examination, laboratory testing or a combination of these. Regular check-ups with screening plus counselling to reinforce the use of preventive measures should be recommended for all sex workers. ▪ **Presumptive treatment** can be used to rapidly reduce STI prevalence in populations such as sex workers who have a very high prevalence of curable STIs (see Box 9).

Primary health care

STIs and other reproductive tract infections (RTIs) remain important causes of preventable reproductive tract morbidity and mortality. Improved awareness and services at the primary care level are highly cost-effective for these reasons alone.

Community sensitization and involvement is essential to raise awareness of STIs, to disseminate prevention advice and to promote utilization of clinical services. STI messages should be integrated into outreach and health education efforts reaching young people, women, migrant workers and other vulnerable populations.

Clinical services for STI at the primary care level are generally provided through reproductive health and outpatient clinics. These include SCM and screening for

antenatal syphilis, as well as prevention and screening for women seeking family planning and other RH services. Full integration of these services—including related logistics, laboratory support, supervision, reporting, etc.—and strengthening of health worker capacity should be a programmatic goal.

STI control and HIV prevention in primary care can be further strengthened through the interventions described in Box 11.

STI treatment guidelines will continue to be adapted as new interventions emerge and can be feasibly adopted. One example of such adaptation is the addition of acyclovir to genital ulcer disease (GUD) algorithms in areas with high HSV-2 prevalence.

Reproductive health

STIs and other RTIs contribute significantly to women's ill-health by increasing the risk of infertility, ectopic pregnancy, cervical cancer, spontaneous abortion and HIV infection. STI prevention, detection and early treatment are thus key elements of services for women.

Maternal and Child Health (MCH), and family planning clinics serve many women of reproductive age and can greatly extend the reach of STI services. Health education and counselling can be strengthened to promote prevention, awareness of symptoms, and early treatment-seeking behaviour. Screening methods exist to detect asymptomatic STIs and sequelae (such as syphilis, cervical infection and

Box 11: Strengthening HIV prevention in primary care

Strengthening of primary health care services in the following areas would also enhance HIV prevention:

- Emphasizing the detection and case management of genital ulcer disease (GUD) in men and women, and urethral discharge (UD) in men
- Because of the limitations of current diagnostic methods, emphasis should be placed on treating low-risk women for common RTIs while reserving screening or presumptive treatment of cervical infections for women at higher risk.
- Earlier and more effective interventions—including HIV testing and counselling—for people presenting with STI symptoms, some of whom may be in the early stages of HIV infection with a high viral load
- Early identification and effective treatment of STIs among people living with HIV through counselling on symptom recognition and improved STI screening
- Promoting STI symptom awareness and health-care seeking behaviour focusing on GUD in men and women, and UD in men.

cervical dysplasia); and treatment can avert many complications including adverse pregnancy outcomes. Other important areas of focus include:

- Ensuring contraceptive choice and safety—screening for and treating STIs, together with counselling on dual protection, are important elements in ensuring contraceptive choice and safety.
- Management of RTIs—endogenous RTIs (bacterial vaginosis and candidiasis) are the most common causes of vaginal discharge, and are often mistaken for an STI.
- Promotion of safe transcervical procedures—the presence of infection in the lower reproductive tract at the time of a procedure is a risk factor for complications. Women should be screened or treated for STIs before insertion of an intrauterine contraceptive device (IUD) or termination of pregnancy.
- Services addressing sexual and gender-based violence—health and social services include treatment of STIs, emergency contraception, post-exposure HIV prophylaxis and psychosocial support services. Gender-sensitive approaches to STI partner notification are needed to prevent partner violence.

In addition, MCH services for neonates and children should ensure:

- Prevention of congenital syphilis as one of the most cost-effective health interventions available. All pregnant women should be screened for syphilis at their first antenatal visit and provided treatment if needed.

- Prevention of neonatal blindness. Prophylaxis against ophthalmia neonatorum among neonates has been shown to be a highly cost-effective intervention.
- Services for STI care for children. Sexual exploitation and abuse of children and adolescents is increasingly recognized as a serious social problem. A standardized approach to the detection and management of STIs in children and adolescents who are suspected of having been sexually abused is important.

Youth-friendly health services

STIs are a major health risk for all sexually active adolescents. Young people are disproportionately affected by STIs, and the age at which infections are acquired is decreasing. Adolescents often do not seek treatment due to fear of stigma and judgmental attitudes of health care providers. Issues related to consent and confidentiality also contribute to low health care seeking behaviour by adolescents.

Primary and reproductive health care should include the following basic services oriented to the needs of young people.

- Improving young people's awareness and knowledge of STIs, their complications and how to prevent them
- Improving access to STI services for young people. Youth friendly health services can often build on services that already exist. Training of health

care providers in provision of adolescent and youth friendly health services is crucial. Mobile clinics or other approaches may be required to reach the most vulnerable youth, including sex workers and street children.

- Involving young people in the planning and implementation of interventions is crucial to ensuring utlilization.
- Strengthening STI surveillance with attention to young people. STI data should be stratified by age and sex to inform appropriate programme response to meet the needs of adolescents.

Private providers

Private providers are often more acceptable to many people because they are perceived to offer better access and confidentiality, and are less stigmatizing than public sector facilities. Self-medication and direct over-the-counter purchases from pharmacies and vendors is also common for similar reasons.

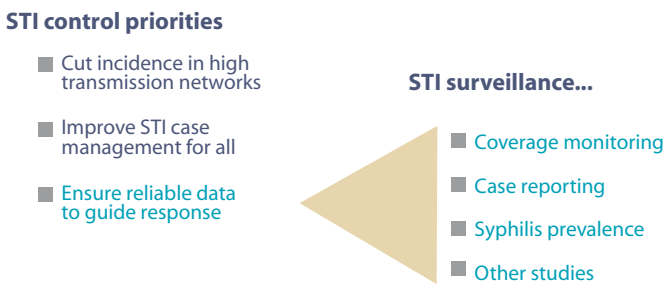
Efforts should be made to improve STI services wherever they are provided and to involve the private and informal sectors in the training plans. Appropriate regulatory measures should be in place to ensure technical quality, accountability and equity in private sector STI services. Public–private partnerships hold promise, especially in industries that employ migrant labour or involve high mobility (uniformed services, transport, etc.). Workplace interventions in such settings can reach important bridge populations of men at high risk.

Objective 3 – Ensure reliable data to guide response

STI control efforts should be guided by reliable data and information on STI programme coverage. Trends of short-duration STIs are a more sensitive indicator of high-risk sexual activity than those based on HIV prevalence and can be monitored widely, even in underserved areas where STI control may be poor.

As markers for HIV transmission, STI surveillance is a recommended component of second-generation surveillance. Yet STI surveillance remains very weak in many countries. Feasible methods, based on syndromic case reporting and periodic etiological surveys, should be implemented more widely to identify areas where STI control is poor. Figure 14 provides an overview of the main STI surveillance activities which are explained in more detail in below.

Figure 14. Interventions to ensure reliable data to guide response



Where STI surveillance activities are not functioning well, there is insufficient information for planning, implementing and evaluating STI and HIV prevention and control programmes. This regional strategy urges countries to adopt a two-phase approach: (i) to ensure that basic STI surveillance and monitoring activities are in place and used to track trends and coverage, and (ii) to build on and improve the basic system to develop better estimates of STI prevalence, antimicrobial resistance, etc. More detail on these surveillance activities follows.

It is important to monitor coverage of STI services, particularly for priority population groups. Simple systems based on clinic registers enable monitoring of new and repeat clinic visits, with disaggregation by age, gender and syndrome. Coverage of high-risk populations can be monitored by geographical area (i.e. number of districts with interventions or services) or by estimated population (i.e. percentage of sex workers contacted by outreach or using the clinic).

Figure 15. Components of STI surveillance

Routine reporting	Prevalence monitoring	Other activities
Universal reporting Common syndromes (discharges, ulcers) included in integrated disease surveillance	High-risk groups Sex workers & male bridge populations	STI aetiology & drug resistance monitoring At sentinel sites
Sentinel reporting Patient-level reporting Syndromic plus select aetiologic reporting	General population Antenatal clinic attenders (syphilis)	Special studies Integrated biological-behavioural suveys Operations research

The components of STI surveillance are illustrated in the avifigure.

STI reports can be collected from all sites (universal reporting) or from a few sites (sentinel reporting) where extra training and resources are provided to ensure a high quality of data. STI cases can be reported by either etiological or syndromic case reporting.

- In etiological case reporting, cases are diagnosed and reported using laboratory results that identify the specific microbial organism that caused the STI.
- In syndromic case reporting, cases are diagnosed and reported according to a set of clinical signs and symptoms that correspond to a few clinical syndromes (for example, GUD and male UD).

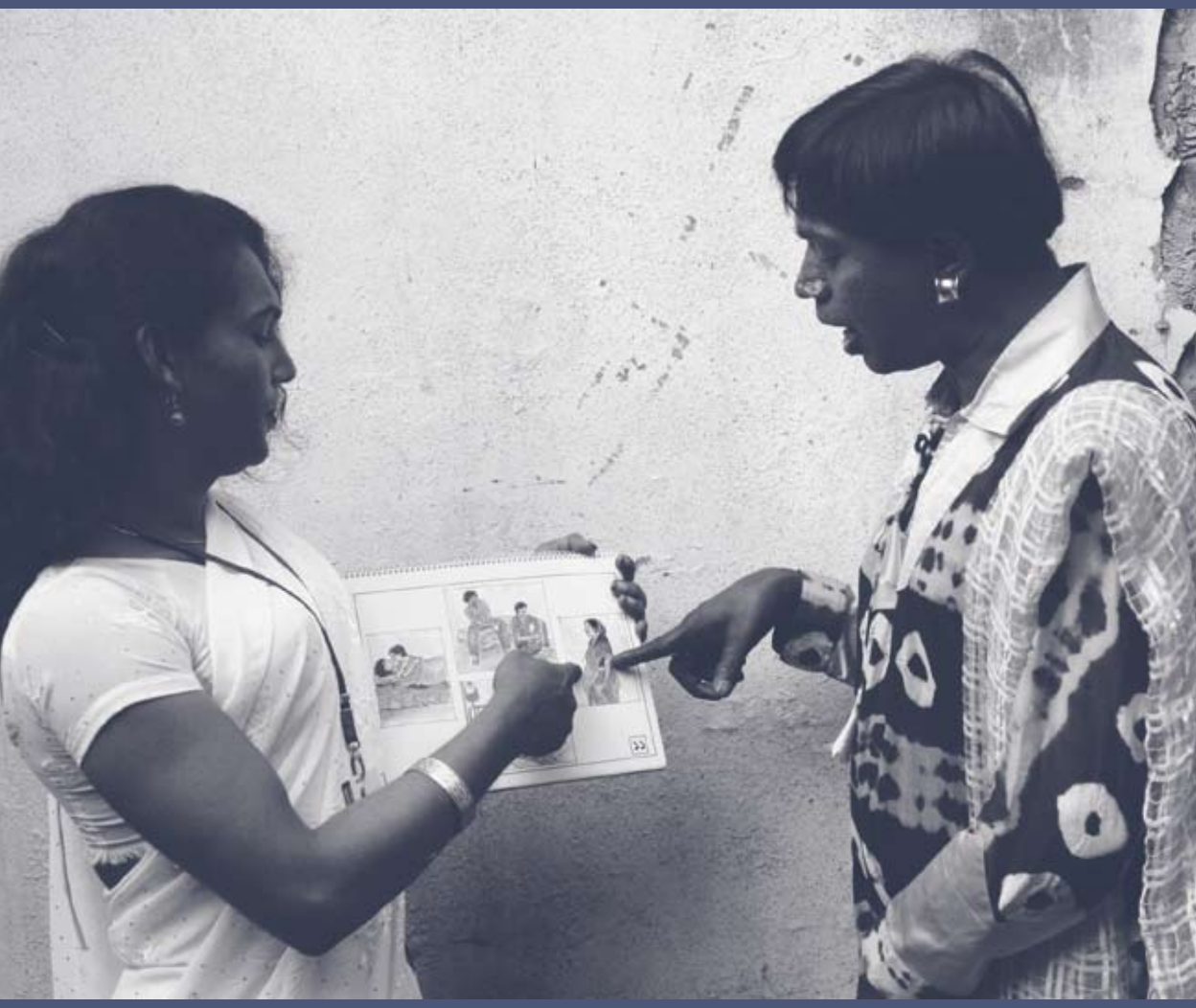
Syndromic case reporting is easier, cheaper and generally more widely practised in the Region. If well implemented, syndromic reporting can provide reliable information to guide programmes.

The second major component of STI surveillance is prevalence assessment and monitoring. The objective is to measure STI prevalence and monitor trends in high-risk populations (such as sex workers, MSM and male bridging groups) and in the general population. In many countries, antenatal clinics (ANCs) routinely screen pregnant women for syphilis often using the same blood samples as for HIV testing. However, few countries compile, analyse and report data on the prevalence of

syphilis. A high or increasing STI prevalence suggests that prevention and control efforts – both for STIs and HIV – need strengthening.

The following activities supplement the basic components of STI surveillance:

- Monitoring the etiological agents responsible for STI syndromes.
- Measuring antimicrobial resistance patterns to determine whether STIs such as gonorrhoea are sensitive to recommended treatments.
- Surveys to monitor behaviours in high-risk populations, often combined with STI and HIV testing (second-generation HIV surveillance) to triangulate results.
- Operations research to address questions not addressed by routine surveillance.



4 Special Initiatives and Areas of Focus

The first objective of the regional strategy is to cut the incidence of STI in high-risk networks as the most effective way of reducing population prevalence. There are more than twenty STIs, each with a different epidemiology and control potential. With increasing understanding of how different STIs spread and how STI patterns change in response to interventions, it is possible to set realistic targets for control and even elimination of specific STIs.

WHO's global strategy proposes several initiatives for the control or elimination of specific STIs. Because of the high prevalence, morbidity and mortality related to some of these infections, these initiatives are highly relevant to the South-East Asia Region.

- Enhanced control and targeted elimination of ulcerative STIs.
- Elimination of congenital syphilis.

The regional strategy supports disease-specific control targets where these are epidemiologically important and programmatically feasible. Such initiatives should

build on and reinforce general STI/HIV prevention and service delivery with specific STI control targets.

In addition, the regional strategy promotes several special areas of focus to improve STI control and prevent HIV transmission. These include:

- Strengthened HIV-related services.
- Roll-out of effective vaccines.
- Wider access to drugs and appropriate technology.

These initiatives and areas of focus are outlined below.

Enhanced control and targeted elimination of ulcerative STIs

Targets include control of infectious syphilis and elimination of chancroid. High prevalence of these infections is a marker for poor STI control and is commonly seen in high-transmission networks where unprotected commercial sex is common. Effectively designed targeted interventions have reduced the rates of GUD and syphilis, eliminated chancroid from previously endemic areas and contributed to slowing HIV transmission.

GUD, including chancroid, syphilis and HSV-2, has been implicated as a major cofactor for HIV transmission. This increased risk has been estimated to be as high as 50–300-fold per unprotected exposure. In countries where ulcers are common, the proportion of HIV infections attributable to ulcers (PAF) is high. Chancroid is most commonly found in populations with low rates of male circumcision (India, Myanmar) but has been controlled to the point of elimination in countries with similar conditions (Thailand, Sri Lanka). Strengthened surveillance is needed to identify areas with high rates of GUD/chancroid, especially in countries where most men are not circumcised.

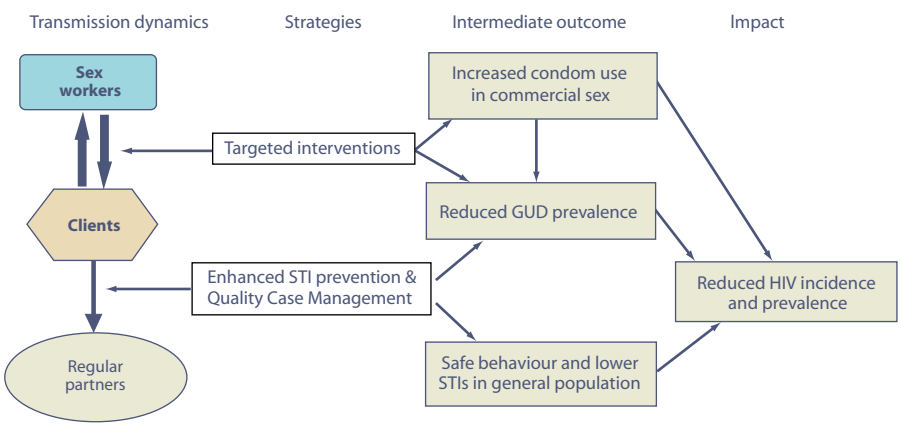
Countries are encouraged to set control targets for ulcerative STIs according to their local epidemiology. Country adaptation could include one or both of the following regional targets:

- Control of infectious syphilis (for example, below 1% in pregnant women)
- Regional elimination of chancroid.

Syphilis remains a problem in all countries of the Region although several countries have made significant progress towards control (*see* Figure 4) and reduced antenatal prevalence to 1% or less. The complications of syphilis are many, particularly for pregnant women and newborns (*see* the next section).

In addition, HSV-2 control targets may be added as interventions are shown to be feasible and effective. While separate control strategies and surveillance are needed for syphilis and chancroid, and for incurable HSV-2, most control activities would be implemented as part of broader efforts to reinforce STI control (objectives 1 and 2). Figure 16 illustrates an operational model for GUD control from the *Global strategy for the prevention and control of STIs*.

Figure 16. Intervention model for GUD control strategy [3]



Strengthening control efforts would require reliable surveillance to track STI trends and patterns on a wide scale. Serosurveillance of syphilis among both high-risk groups and pregnant women provides a reliable measure of prevalence which can be widely monitored even in remote areas. In areas where chancroid is common, genital ulcers may account for up to half the male STI cases seen in clinics and this ratio drops quickly once chancroid is controlled. Surveillance of syndromic STI trends can thus provide a rapid and inexpensive measure of chancroid prevalence. Periodic laboratory screening of vulnerable populations (sex workers, STI clinic patients) to assess the etiological profile of genital ulcers can be conducted less frequently to confirm syndromic trends.

Box 12: Chancroid elimination

Chancroid is a major cause of genital ulceration in regions with the highest rates of heterosexual HIV transmission. It is highly susceptible to control efforts and a good candidate for regional elimination and global eradication.

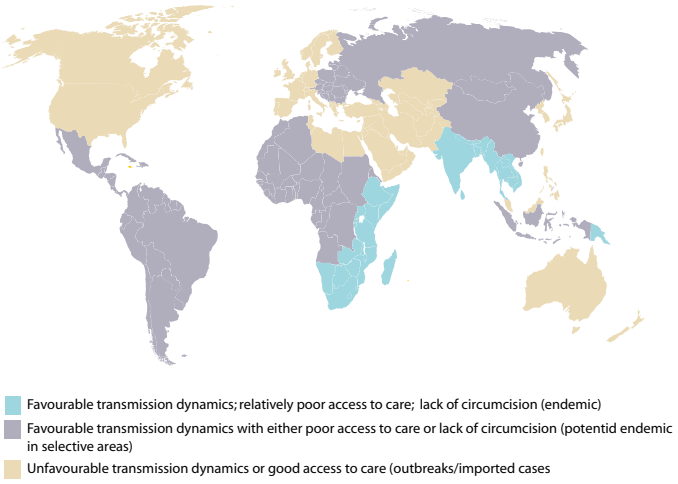
Haemophilus ducreyi, the causative organism of chancroid, has no non-human reservoir and infection is concentrated in small segments of the population. More than other curable STIs, chancroid is dependent on sexual networks with high rates of partner change (estimated 15–20 partners per year) for survival. Chancroid thus thrives under conditions of poverty, migrant labour, population displacement and commercial sex. Effective control of infection in vulnerable core groups such as sex workers results in elimination from the larger community.

Chancroid has shown itself to be highly vulnerable to interventions such as the following:

- The 100% CUP implemented in commercial sex establishments in Thailand resulted in virtual elimination of chancroid from the country within a few years.
- Peer education and improved access to STI services for sex workers in Nairobi led to a dramatic drop in chancroid prevalence.
- Periodic presumptive treatment with azithromycin of women at high risk led to rapid elimination of chancroid from several South African mining areas.
- Targeted preventive and curative services for sex workers—including regular screening or presumptive treatment—have been effective strategies for rapid control of outbreaks in non-endemic areas in North America.

Such interventions—when easily accessible to sex workers and their clients – have been shown to be effective components of local elimination strategies.

Figure 17. Regions where chancroid is endemic



Elimination of congenital syphilis

Elimination of congenital syphilis is another example of a specific control target. One of the major preventable causes of infant morbidity and mortality, congenital syphilis can be controlled using existing affordable technology.

Effective prevention and detection of congenital syphilis depends firstly on prevention of syphilis in pregnant women (*see above* under Control strategy for ulcerative STIs). In addition, 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, antenatal screening for syphilis followed by treatment of seroreactive women and their partners 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 levels below 1%).

- Pregnant women should routinely be screened at the first prenatal visit, ideally before 28 weeks of gestation. In communities where the risk of congenital

syphilis is high, a second screening test at 36 weeks or at delivery should be considered.

- As with other STIs, pregnant women should be offered HIV testing and counselling, and related services for the prevention of vertical HIV transmission. Programmes for HIV PMTCT and congenital syphilis should be integrated.

HIV-related services

STI clinic visits present opportunities to identify HIV-positive individuals and intervene in the early stages of the infection when they may have a high HIV viral load, but are unaware of their HIV status and are sexually active. *Inflammatory* STIs (such as gonorrhoea and chlamydia) increase the HIV viral load in genital fluids, and treatment of the STI reduces genital HIV viral load to levels comparable with those of controls. [12, 13] Increases in semen viral load have been estimated to increase the odds of transmission per coital act by 8–20-fold. [14] In Malawi, 2% of HIV antibody-negative men attending STI clinics were in the early stages of HIV infection with a high viral load; acute HIV infection was significantly associated with ulcerative STIs and inguinal adenopathy. Recommendations include:

- Earlier and more effective interventions—including provider-initiated HIV testing and counselling—for people presenting with STI symptoms, a significant proportion of whom may be in the early stages of HIV infection with a high viral load.
- STI screening and treatment for people living with HIV/AIDS (PLHA). This includes early identification and effective treatment of STIs among PLHA through counselling and improved STI screening .
- Promoting STI symptom awareness and health care-seeking behaviour focusing on genital ulcers in men and women, and UD in men.

STI case management guidelines will continue to be adapted as new interventions (for PLHA and others) emerge and can be feasibly incorporated.

Roll-out of effective vaccines

Immunization of populations at risk can be a highly effective method of controlling infectious diseases. Several vaccines show promise against STIs (Box 13). Countries in the Region will be supported to develop strategies for roll-out of specific vaccines as they become available and affordable.

Box 13: Vaccines

Vaccines against STIs will be an important addition to existing STI prevention technologies.

- Hepatitis B vaccine is effective and becoming more affordable.
- Preventive vaccination against oncogenic HPV types is currently expensive. A recent trial demonstrated the effectiveness of an HPV vaccine in preventing incident and persistent cervical infections with HPV-16 and -18. Discussions have been held with WHO and countries to determine the interest and address acceptability and feasibility issues related to implementation of an HPV vaccination programme.
- Clinical trials have found that a vaccine against HSV-2 was highly effective compared with placebo, but only in women who had not been previously infected with HSV-1. As research and clinical trials continue on HSV-2 vaccines, countries can begin to consider options for introduction.

For 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 to be at risk for STIs.

Access to drugs and appropriate technology

The regional strategy is supported by new technologies and approaches. Effective STI treatment is more affordable as several antibiotics have recently come off patent (Box 14). In addition, there are several promising developments in STI testing technologies that may be relevant for the Region in the next few years.

Box 14: Drugs for STIs

Consistent availability of appropriate drugs to treat STIs is essential for a successful STI control programme. Most drugs used to treat STIs are inexpensive and cost should not be a barrier to their availability.

A drug that is appropriate for STI treatment is one that is highly efficacious, has low toxicity, for which microbial resistance is either unlikely or will develop late, administered orally preferably as a single dose and is not contraindicated in pregnant or lactating women.

- Some medicines for the treatment of STIs—azithromycin, cefixime, acyclovir—are becoming more affordable. Azithromycin and cefixime have the advantage of single-dose administration.
- Penicillins have remained effective for the treatment of early syphilis and can be given as single-dose treatments, albeit by injection.


VIROLAMES 40

5 Next Steps

Reducing the high burden of STIs in the South-East Asia Region is feasible and would yield large public health benefits. To accomplish this will require commitment from countries to assess their situation and take steps to improve STI prevention and control.

Countries are encouraged to review their national STI control programmes and to adapt the regional strategy to their local context. Attention should be given to setting appropriate priorities and feasible targets. Efforts to improve STI control must be implemented on a sufficient scale to have public health impact.

Select milestones for the Region are proposed below. The WHO Regional Office will assist countries in adapting strategies and will support implementation and evaluation of efforts.

Planning for scale

Small-scale and pilot programmes provide only limited geographical and population coverage and cannot be expected to have a significant impact on the burden of STIs. To achieve greater impact, STI prevention and control interventions must be scaled up. This means increasing the geographical coverage and the number of people served. In scaling up, it is important to maintain a focus on priority populations – those with the highest rates of partner change – and reach as many individuals as possible within those populations. Scaling up requires a special focus on:

- Maintaining the quality of interventions—there is a risk of sacrificing quality as resources are stretched to reach more people.
- Ensuring adequate resources and strengthening capacity—sufficient resources should be made available to support scaling up; technical and capacity-building support is required to enable resources to be used.
- Planning for sustainability—mechanisms for sustainable provision of services should be established.

Implementing the strategy

This section outlines key programmatic areas that should be addressed in adapting and implementing the regional strategy[2]. STI control activities should be tailored to the local context, stage of the STI/HIV epidemic and level of resources. Effective implementation of STI control activities requires attention to a number of policy and programmatic areas including advocacy, policy development, resource mobilization, partnerships, programme management, capacity building and ongoing support, integrating services, monitoring and evaluation. These are briefly described below.

Advocacy aims to garner high-level political support for national strategic responses. A strategic approach should involve key stakeholders from an early stage to build consensus. Civil society organizations and affected communities can play an important role in mobilizing communities and maximizing participation. The media can reach a wider population and help increase awareness. They can also influence policy-makers by drawing attention to the problem and related needs. Advocacy should target appropriate sectors and be evidence-based, drawing on recent research in the field.

Policy development provides a sound foundation for strategic planning. National policy should provide clear priorities for government action and the broad strategies that it will adopt. It should spell out roles and responsibilities, rights and entitlements, and monitoring arrangements. Having a policy is not enough by itself. Efforts should be made to disseminate the policy among the government and the public.

Partnerships include various organizations, networks and ministries beyond the health system. NGOs or CBOs, for example, can be especially effective at the grassroots level and with marginalized or hard-to-reach groups. International partners can bring a range of expertise and financial resources. As there may be many partners involved, it is important to map activities and decentralize coordination mechanisms (partnership committees) with sufficient political and financial commitment to ensure that meetings take place regularly and are effective.

Resource mobilization is fundamental to the support of STI programmes. Assessment should be made of available resources to identify funding gaps. There should be a national funding plan based on estimated resources and costs required for implementation. Such a plan helps promote transparency, accountability and coordination among partners.

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[2] More attention to management issues can be found in the AIDS Programme Managers' Course developed by WHO/SEARO. In 2007, WHO/SEARO began conducting AIDS Programme Managers' Courses for mid-level managers of AIDS and STI control programmes.

Programme management including planning, budgeting, accounting and reporting may need to be strengthened at all levels. Assessment should be made of both financial and programme management skills. A capacity-building plan should address proposal writing, project report writing and coordination skills. Logistics and supply management are needed to procure and maintain equipment in working order and to ensure the quality and uninterrupted supply of commodities.

Monitoring and evaluation (M&E) are essential components of programme management yet are often neglected. The national plan with objectives and indicators of achievement should provide a clear framework for M&E. As with financial management, M&E needs should be assessed as a basis for capacity-building plans. Guidelines on M&E may need to be developed for implementing organizations.

Capacity-building support is also important in key technical as well as management areas. In scaling up, capacity-building plans should address recruitment, training, supervision and support, and human resource management. Specific technical capacity to support the programme should be strengthened at different levels, particularly at decentralized levels. Once capacity has been established or strengthened, it is necessary to sustain it through ongoing supervision and support at all levels.

Integrating services into pre-existing facilities – such as voluntary counselling and testing centres (VCTC), ANC and family planning clinics – can provide advantages including optimizing resources, wider awareness of STI and HIV issues, and decreased stigmatization. Integration of STI services in different health-care settings is addressed under Objective 2 of the strategy. Effective integration usually requires retraining of staff and reorganizing the way services are provided at a clinic.

Suggested milestones

Countries should set milestones for progress in line with their specific STI control objectives. As a starting point, the regional strategy proposes the following broad milestones for SEAR countries in 2007–2010.

WHO/SEARO can support countries in many of these areas including: setting coverage targets for interventions in sex work settings; updating guidelines on STI case management; establishing basic STI case reporting; reporting basic STI data (i.e. STI section in the UNAIDS *Epidemiogical fact sheets*) compiling baseline data on chancroid and syphilis, and setting control targets according to their epidemiological situation; compiling baseline data and setting coverage targets for routine screening of syphilis in pregnant women.

Proposed STI control targets for South-East Asia Region, 2007–2010.

Objective 1: Cut incidence in high-transmission networks

- Mapping and size estimates for vulnerable populations conducted in all countries in the region 2007–2010.
- 80% coverage of sex workers and other high-risk populations (including high-risk MSM/transgender) by 2010.

Objective 2: Improve STI case management for all

- Recommended drugs, guidelines and support provided to primary health care facilities, 2007–2010.
- 80% of primary health care facilities providing STI case management according to national guidelines by 2010.

Objective 3 Ensure reliable data to guide the response

- Regional and country plans developed by 2008. Training and implementation support provided in all countries during 2007–2010.
- All countries have basic reporting – universal or sentinel STI reporting plus antenatal syphilis prevalence – in place by 2010.

Disease-specific control targets

- Syphilis control and congenital syphilis elimination: 80% antenatal syphilis screening coverage by 2010. Reduction of antenatal syphilis prevalence to below 1% in all SEAR countries by 2015.
- Chancroid: elimination from South-East Asia Region by 2010.
- Effective vaccine roll-out: Five-year plan by 2008. Pilot studies, price negotiations and selective vaccine implementation 2007–10.

HIV prevention targets

- Prevention strategies/programmes for HIV-positive persons: strategies, curricula and materials by end 2007; implement interventions in 90% of HIV clinical services by 2008
- Provider-initiated HIV testing and counselling for STI patients: routine offer of HIV testing and counselling for STI patients in 80% of clinical settings by 2010.

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Sexually transmitted infections (STIs) are a major cause of preventable illness, disability and premature mortality in the South-East Asia Region. However, despite their overall high incidence and prevalence, several countries in the Region have managed to reduce the spread and even eliminate some STIs altogether. Where this has been successful, countries have also made progress in slowing or reversing HIV epidemics.

This publication describes the diversity of STI epidemics in the Region, and highlights opportunities for strengthening control efforts. It builds on regional successes and introduces new approaches endorsed in WHO's global STI strategy. It describes how countries can take concrete steps to:

- Reduce the incidence of STIs in high-risk networks where most transmissions take place;
- Improve STI services to further reduce morbidity and mortality, and
- Strengthen STI surveillance to provide reliable data to guide the response.

The publication also introduces several initiatives with targets for control or elimination of specific STIs including syphilis and chancroid. Other sections address strengthening of HIV-related services, roll-out of effective vaccines, access to drugs and appropriate technology, and planning for scale. Milestones are proposed for countries and for the Region.

The strategy put forth in the publication is intended for programme managers and others contributing to the national response. The potential benefits of STI control are many, including contribution to reaching the Millennium Development Goals (MDGs) for improving maternal and child health (MDGs 4 and 5), and for halting and reversing HIV epidemics (MDG 6).

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