Guidelines for the Care of Sexually Transmitted Infections in Conflict-Affected Settings

Developed by the Women's Commission for Refugee Women and Children on behalf of the Reproductive Health Response in Conflict Consortium 2004

RHRC Consortium

The Reproductive Health Response in Conflict Consortium

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Mission Statement

The Reproductive Health Response in Conflict (RHRC) Consortium is dedicated to the promotion of reproductive health among all persons affected by armed conflict. The RHRC Consortium promotes sustained access to comprehensive, high quality reproductive health programs in emergencies and advocates for policies that support reproductive health of persons affected by armed conflict.

The RHRC Consortium believes all persons have a right to quality reproductive health care and that reproductive health programming must promote rights, respect and responsibility for all. To this end, the RHRC Consortium adheres to three fundamental principles: using participatory approaches to involve the community at all stages of programming; encouraging reproductive health programming during all phases of emergencies, from the initial crisis to reconstruction and development; and employing a rights-based approach in all of its work, as articulated in the 1994 International Conference on Population and Development Program of Action.

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*Please note that all of the photos are taken from conflict-affected settings but do not have any association with sexually transmitted infections.

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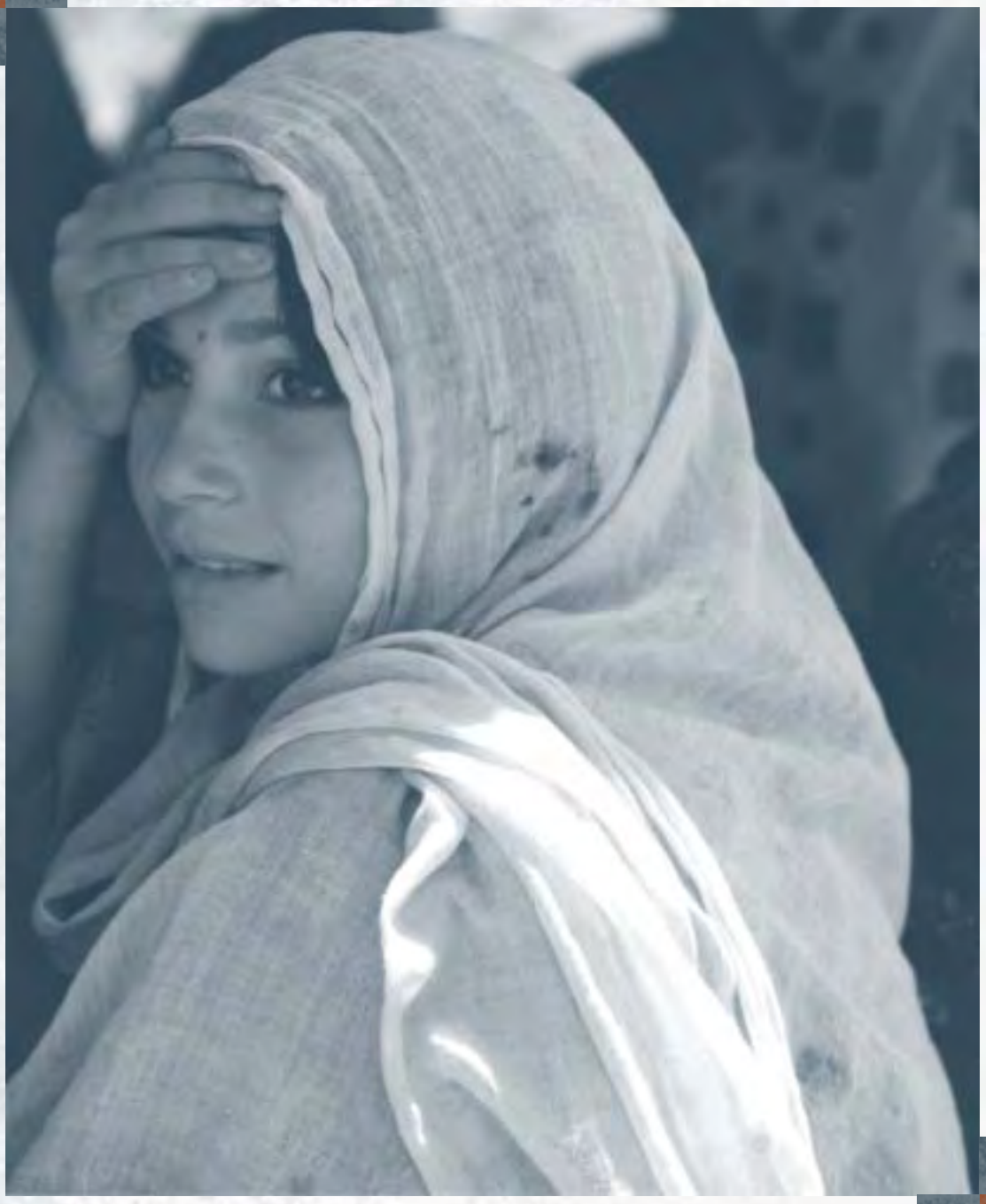
Acronyms

ANC	>>>	Antenatal care
BCC	>>>	Behavior change communication
BV	>>>	Bacterial vaginosis
CDC	>>>	(United States) Centers for Disease Control and Prevention
CSW	>>>	Commercial sex worker
GUS	>>>	Genital ulcer syndrome
HIV	>>>	Human immunodeficiency virus
HPV	>>>	Human papilloma virus
HSV-2	>>>	Herpes simplex virus type 2
IEC	>>>	Information, education and communication
KAPB	>>>	Knowledge, attitude, practice and behavior
KOH	>>>	Potassium hydroxide
LCR	>>>	Ligase chain reaction
NGO	>>>	Non-governmental organization
PCR	>>>	Polymerase chain reaction
PID	>>>	Pelvic inflammatory disease
PMTCT	>>>	Prevention of mother-to-child transmission
RPR	>>>	Rapid plasma reagin
RTI	>>>	Reproductive tract infection
STD	>>>	Sexually transmitted disease
STI	>>>	Sexually transmitted infection
UDS	>>>	Urethral discharge syndrome
UNAIDS	>>>	United Nations Joint Programme on HIV/AIDS
UNHCR	>>>	United Nations High Commissioner for Refugees
VCT	>>>	Voluntary counseling and testing
VDS	>>>	Vaginal discharge syndrome
WHO	>>>	World Health Organization



Section 1

Introduction

Sexually transmitted infections (STIs)[a] are a common health problem with potentially serious consequences, including infertility, chronic illness and death. Furthermore, STIs enhance the transmission of HIV infection. Effective measures for the prevention and care of STIs are available, but are often poorly implemented.

[a] This document uses the term "sexually transmitted infection" (STI) rather than the older term "sexually transmitted disease" (STD). In 1998, WHO and the international community changed the term sexually transmitted disease to sexually transmitted infection. As not all infections result in disease, STI reflects both symptomatic and asymptomatic infections, in both men and women.

1.1 Who are the guidelines for?

Conflict-affected settings are associated with conditions that may fuel the spread of STIs. However, conflict and its aftermath may also present new opportunities for combating STIs.

The guidelines are aimed at individuals and organizations concerned with improving the quality of care of STIs in conflict-affected settings.

The document primarily targets workers involved in resource allocation, programmatic decision-making and management. The guidelines should be useful to health coordinators, program managers and technical advisors, both in government and non-governmental organizations (NGOs). While technical components relevant to clinical health workers are included, the guidelines will also provide non-clinical staff with insights into the scope and complexity of an important public health issue.

1.2 What is the purpose of the guidelines?

The guidelines provide a framework for **clinic-based** care of STIs and aim to show that:

- STIs are an important public health problem in conflict-affected settings.
- Conflict-affected settings pose challenges but also present opportunities for STI control.
- Effective STI care requires investment in technical capacity to design and implement appropriate, technically sound programs.
- Effective service delivery is based upon reliable data, drug management, training and supervision, as well as effective clinical care.
- Advocacy is needed to ensure that STI control receives the necessary attention in conflict-affected settings.

1.3 What are the guidelines about?

"…STI control programmes must be designed to address each country's unique epidemiological situation, behavioral patterns and cultures. Consequently, no standard STI programme will be appropriate for every country, and even within a single country, a control programme is likely to change over time to address changes in STI epidemiology, in society and in control programmes…"[b]

STIs are a significant public health problem. The factors influencing the control of STIs are complex and resource-poor settings present particular challenges. Conflict-affected settings are associated with conditions that may fuel the spread of STIs, thus adding a further layer of complexity. STI care is further influenced by a variety of programmatic issues and a range of sensitivities, uncertainties and controversies.

[b] World Health Organization. Control of Sexually Transmitted Diseases. 1985.

Defining an approach to STI care in conflict-affected settings poses a number of challenges:

- Conflict-affected settings vary with regard to epidemiological patterns.
- The factors affecting STI care vary from context to context.[c]
- There are considerable differences in resource availability among various settings; resource availability is a key factor in determining the feasibility of an approach to STI care.
- STI care must be adapted to the stage of the emergency.
- The syndromic approach is currently the only feasible method of STI case management in most conflict-affected settings, but has well-recognized limitations.
- Clinical care does not function in isolation. Appropriate staff, equipment, drugs, training, supervision and surveillance systems are needed and must be supported by effective financial, administrative and logistical systems. The system as a whole requires political support to promote appropriate resource allocation. Furthermore, services must be accessible and acceptable to the community.

There are no "quick fixes" for STI control. A multi-sectoral approach is needed, addressing the underlying economic, social and cultural factors along with the health care issues. Within the health sector, STI control requires both clinic-based and community-based strategies. The two strategies are closely linked and reinforce each other. Insufficient attention to either will reduce the overall effectiveness of STI control efforts. Within both strategies, behaviors and contexts must be addressed in addition to the clinical aspects of STI control. Adequate discussion of all the components of STI control is beyond the scope of this document. Important community-based components, such as condom programming, behavior change communication and interventions targeting specific groups, warrant separate discussions. Annex 11 suggests a number of reference materials.

The guidelines address the management of STIs other than HIV/AIDS. However, STIs and HIV/AIDS are closely linked. Effective treatment of STIs is an important HIV/AIDS prevention strategy. Trends in STI incidence and prevalence can also serve as early indicators of changes in sexual behavior and thus assist in monitoring the effectiveness of HIV/AIDS prevention programs.

As conflict-affected settings vary widely, there can be no single "best practice" approach for STI management in these situations. However, program managers and clinicians across a variety of settings may face a number of common challenges. *This document aims to raise awareness of the complexities of STI care and to highlight areas where improvements may be possible*.

Sections 2 and 3 describe STIs and provide a broad overview of the STI problem. Section 4 highlights the implications of STIs in conflict-affected settings. Section 5 provides a contextual framework for STI programs and reviews the debate around syndromic management. Section 6 introduces an approach to clinic-based STI care in conflict-affected settings. Sections 7, 8 and 9 describe components of clinic-based care including data collection, service delivery and utilization. Recommendations for both minimum and comprehensive responses are presented, acknowledging the need to adjust responses to the phase of the emergency. At the end of each section, a summary of key points is provided. Section 10 presents an overview of key points and a summary of recommendations. The annexes include supplementary documents and suggestions for further reading.

[c] For example, NGO services versus government health services, camp settings versus dispersed communities, urban versus rural communities, diverse social, cultural and religious contexts.

The risks for the spread of STIs in conflict-affected settings warrant urgent intervention. **In spite of the challenges associated with STI control, conflict and its aftermath may present new opportunities for combating STIs.** ***The need and the potential for intervention should be realized and appropriate resources allocated from the outset of the emergency.***

Section 2

What are sexually transmitted infections?

Sexually transmitted infections are infections for which the most common route of transmission from person to person is through sexual contact.

2.1 Overview

Definitions and routes of transmission

Sexual transmission may include penis-to-vagina, penis-to-mouth, penis-to-anus, mouth-to-vagina and mouth-to-anus contact. Ejaculation does not have to occur for STIs to be transmitted. STIs can also be spread to other parts of the body through contact with discharges or ulcers. For example, a gonorrhea eye infection can result after touching infected genitals and then eyes.

STIs are part of a broader group of infections known as reproductive tract infections (RTIs). RTIs refer to all infections of the reproductive tract, including infections not caused by sexual contact. RTIs not caused by sexual contact may result from unsterile medical procedures (iatrogenic infections), or from overgrowth of organisms normally living in the reproductive tract (endogenous infections), such as BV and candidiasis.

Several STIs can also be transmitted from mother to baby during pregnancy and delivery, for example, syphilis, gonorrhea and herpes.

Classification of STIs

More than 30 sexually transmitted organisms have been identified. These include bacteria, viruses, protozoa, fungi and parasites. STIs may be classified as ulcerative or non-ulcerative, curable or incurable. Curable STIs can be treated with medications which stop the disease, but cannot repair any permanent damage resulting from the infection. Incurable STIs are caused by viruses. For some viral STIs, although cure is not possible, measures can be taken to prevent the development of disease (e.g., hepatitis B vaccine) or to alleviate symptoms (e.g., antiviral drugs for genital herpes).

Table 1. Classification of common sexually transmitted infections

INFECTION	CAUSATIVE ORGANISM	ORGANISM CLASSIFICATION
Curable		
Non-ulcerative		
Gonorrhea	Neisseria gonorrhea	Bacterium
Chlamydia	Chlamydia trachomatis	Bacterium
Trichomoniasis	Trichomonas vaginalis	Protozoan
Candidiasis	Candida albicans	Fungus
Bacterial vaginosis (BV)	Gardnerella vaginalis	Bacteria
	Mycoplasma species	
	Anaerobic species	
Ulcerative		
Syphilis	Treponema pallidum	Spirochete bacterium
Chancroid	Haemophilis ducreyi	Bacterium
Granuloma inguinale/donovanosis	Calymmobacterium granulomatis	Bacterium
Lymphogranuloma venereum	Chlamydia trachomatis (L1-L3)	Bacterium
Incurable		
Non-ulcerative		
HIV/AIDS	Human immunodeficiency virus (HIV)	Virus
Genital warts	Human papilloma virus (HPV)	Virus
Hepatitis B	Hepatitis B virus	Virus
Hepatitis C	Hepatitis C virus	Virus
Ulcerative		
Genital herpes	Herpes simplex virus type 1 (HSV-1)	Virus
	Herpes simplex virus type 2 (HSV-2)	Virus
	Human herpes virus type 8 (HHV-8)	Virus

This document focuses on the most common curable STIs, those toward which STI programs are usually directed in resource-poor settings, namely syphilis, chancroid, gonorrhea, chlamydia and trichomoniasis. Genital herpes, while not curable, is also discussed, in the light of increasing prevalences and implications for HIV/AIDS. BV and candidiasis are considered RTIs, not STIs, although both can also be transmitted sexually. These infections are included because they are common causes of vaginal discharge. Furthermore, both BV and candidiasis may increase the risk of HIV transmission and BV has been associated with negative pregnancy outcomes.

STIs vary in their geographical distribution. Syphilis, genital herpes, chlamydia and gonorrhea are universally distributed. Chancroid is commonly found in sub-Saharan Africa and the Caribbean. Granuloma inguinale is found mostly in the Caribbean and South East Asia.[1]

Symptoms and signs of STIs

STIs may cause symptoms and signs in the reproductive organs, as well as in the skin around the vagina, penis or anus, or in the throat or mouth. Some STIs also cause systemic symptoms and signs.

Common symptoms and signs of STIs

- unusual discharge from the vagina or penis
- pain or burning with urination
- itching or irritation of the genitals
- sores, blisters or lumps on the genitals
- rashes, including those on the palms of hands and soles of feet
- lower abdominal pain
- swelling in the groin (inguinal swelling)

Asymptomatic STIs

Some STIs may not cause any symptoms or may cause only very mild symptoms. An infected person may therefore not realize they have an infection. Up to 80 of women and 10 percent of men with gonorrhea are asymptomatic.[2] With chlamydia infection, 80 to 90 percent of women[3] and up to 50 percent of men[4] may be asymptomatic. Trichomonas vaginitis may be asymptomatic in 50 percent of cases.[4] **Asymptomatic infections can be transmitted to others**.

STIs, including asymptomatic infections, can result in serious complications, especially if they are not treated early. Effective treatment reduces the risk of complications and the possibility of spreading the infection.

2.2 STIs and gender

Vulnerability of women

Women are more vulnerable than men to diseases of the reproductive tract, including STIs, for a number of reasons. This has important implications for STI control.

Reasons women are more vulnerable than men to STIs[5]

Biological

- The vagina is lined by a mucous membrane, which is more penetrable to infection than the skin of the penis.
- A woman's genitals have a larger surface area through which infection can occur.
- During intercourse, the receptive partner is usually more exposed to genital secretions in terms of quantity and duration of exposure.
- Changes in the cervix during the menstrual cycle can facilitate infection.
- Younger women are particularly vulnerable because their cervical tissues are less mature and more easily penetrated by organisms.

Damage to genital tissues

- Lack of lubrication during intercourse can result in abrasions which provide an entry for infection. Older women are more likely to get small abrasions in the vagina during sexual activity because of the thinning of the tissues and dryness that occur with age. Cultural practices such as dry sex also increase the risk of abrasions. (Dry sex involves inserting substances such as herbs or powder into the vagina to reduce lubricating secretions.)
- Vaginal or cervical trauma, such as may occur during violent sex or loss of virginity, may increase the risk of STI transmission.
- Scar tissue resulting from female genital cutting may be easily traumatized and may thus increase the risk for infection.
- The use of vaginal douches increases the risk of pelvic inflammatory disease (PID).
- Women who already have an infection (particularly an STI that causes ulcers) are more likely to acquire or transmit HIV. Since women are often asymptomatic when infected with an STI, they are often not aware of this increased risk.

Social

- Social and economic vulnerabilities further increase women's risk of infection. Many women are dependent on their partner and fear abandonment or violence. Therefore, they have little control over when and how they have sex.
- Patterns of sexual mixing and gender power issues put women at increased risk. Many young women have sex with older men who have already been exposed to the risk of STIs for many years. Anecdotal evidence from sub-Saharan Africa suggests that as men become more aware of the dangers of HIV/AIDS, they may seek out younger partners in the belief that young women are unlikely to be infected. Men may be less likely to use condoms in these relationships. Furthermore, the unequal balance of power between older men and younger women makes it exceptionally difficult for the women to negotiate safer sex.[6]

KEY POINTS

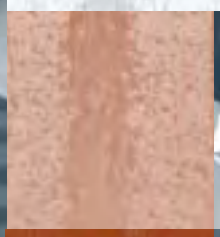
- The most common route of transmission for STIs is sexual contact: vaginal, anal or oral.
- Some STIs can also be transmitted through contaminated medical equipment or blood transfusions, and from mother to baby during pregnancy and delivery.
- The most common curable STIs are syphilis, chancroid, gonorrhea, chlamydia and trichomoniasis.
- Incurable STIs are caused by viruses, e.g., HIV/AIDS, genital herpes, genital warts and hepatitis B and C.
- Candidiasis and BV are considered reproductive tract infections rather than STIs.
- Common STI symptoms include:
  - unusual discharge from the vagina or penis
  - pain or burning with urination
  - itching or irritation of the genitals
  - sores, blisters or lumps on the genitals
  - rashes, including those on the palms of hands and soles of feet
  - lower abdominal pain
  - swelling in the groin (inguinal swelling)
- Many STIs do not cause any symptoms, especially in women.
- Asymptomatic STIs can still have serious consequences and can still be transmitted to others.
- Women are more vulnerable than men to STIs, for biological, social and economic reasons.

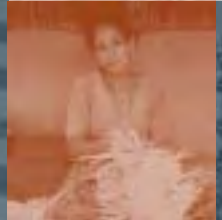
1 WHO. Report of an expert consultation on improving the management of sexually transmitted infections. 2001.
2 WHO. Global prevalence and incidence of selected sexually transmitted infections. 2001.
3 EngenderHealth. Sexually Transmitted Infections. Online minicourse. www.engenderhealth.org. 2004.
4 WHO. Regional Office for the Western Pacific. Laboratory tests for the detection of reproductive tract infections. 1999.
5 Adapted from: EngenderHealth. Sexually Transmitted Infections. Online minicourse. www.engenderhealth.org. 2004.
6 Laga M, Schwartlander B, Pisania E, et al. To stem HIV in Africa, prevent transmission to young women. Journal of AIDS. 2001; 15: 931-4.

Section 3

Why focus on sexually transmitted infections?

In developing countries, STIs and their complications are among the top five disease categories for which adults seek health care.[1]





3.1 STIs are a common health problem

Even excluding HIV, STIs and their complications are second only to pregnancy-related factors as causes of disease, death and healthy life-years lost in women of reproductive age (15-49 years).[2]

The World Health Organization estimates that during 1999 about 340 million new cases of syphilis, gonorrhea, chlamydia and trichomoniasis occurred throughout the world in men and women of reproductive age. These infections represent the most common curable STIs.

Table 2. Estimated prevalence and annual incidence of curable STIs by region – 1999[3]

REGION	POPULATION 15-49 yrs (million)	PREVALENCE (million)	PREVALENCE (per 1,000)	ANNUAL INCIDENCE (million)
North America	156	3	19	14
Western Europe	203	4	20	17
North Africa & Middle East	165	3.5	21	10
Eastern Europe & Central Asia	205	6	29	22
Sub-Saharan Africa	269	32	119	69
South & South East Asia	955	48	50	151
East Asia & Pacific	815	6	7	18
Australia & New Zealand	11	0.3	27	1
Latin America & Caribbean	260	18.5	71	38
Total		**3,040**	**116.5**	**340**

Table 3. Global estimated new cases of curable STIs among adults – 1999[4]

Syphilis	12 million
Gonorrhea	62 million
Chlamydia	92 million
Trichomoniasis	174 million
Total	**340 million**

While South and South East Asia have the greatest total number of prevalent cases and of new cases, sub-Saharan Africa has the highest number of STIs per 1,000 population and the highest number of new cases per 1,000 population per year. [c]

The tables above represent the most recent global estimates of these infections. Data are presented as estimates, because data on the incidence and prevalence of STIs and their complications are limited and may substantially underestimate the burden of these diseases.[5] The reasons for this underestimation are discussed in Section 6.

[c] Calculated by dividing the annual incidence by the population.

Estimated new cases of curable STIs – 1999

(Source: WHO. Global prevalence and incidence of selected sexually transmitted infections. 2001.)

3.2 STIs have serious consequences

Medical

STIs may cause serious illness and have severe long-term medical consequences. In some cases, STIs may result in death. Pelvic inflammatory disease (PID) can result in acute illness and/or chronic pelvic pain. In developing countries, one in seven males has been reported to develop urethral stricture (narrowing) as a consequence of STIs.[6] STIs are also implicated in the development of cancers of the penis, cervix, vagina and anus.

Infertility is a potential consequence of STIs in men as well as in women. About one in five women with PID will become infertile.[7] Among women in Africa, PID may account for 50 to 80 percent of infertility.[8]

The effects of an STI during pregnancy or delivery on the fetus and newborn may be severe. STIs can result in ectopic pregnancy, spontaneous abortion, premature rupture of membranes, premature labor and low birth weight. For example, syphilis during pregnancy will result in fetal loss in one-third of cases and congenital abnormalities in a further one-third. Data from South Africa on syphilis during pregnancy revealed that perinatal death was 19 times more likely if incomplete treatment or no treatment was received.[9] Infections in the newborn such as pneumonia, eye infections and meningitis may also result from an STI during pregnancy or delivery. About 3 percent of newborns with gonococcal eye infection will develop complete blindness if not treated, and 20 percent will have some degree of corneal damage.[10] Further impacts of STIs on the fetus include neurological damage and congenital abnormalities such as blindness and deafness. Some of the consequences of STIs may be apparent at birth but others may not be detected until months or years later.

Emotional and social

Concern about health consequences and guilt about infecting a partner or child may be a source of considerable emotional stress. STIs are furthermore associated with significant social stigma. Infertility may have a severe emotional impact on individuals and also carries a stigma, especially for women in societies where a high value is placed upon the ability to bear children. Social impacts of STIs and infertility include relationship problems, domestic violence, divorce and abandonment.

Table 4. Consequences of STIs

MEDICAL CONSEQUENCES	EMOTIONAL AND SOCIAL CONSEQUENCES
Illness ■ Pelvic inflammatory disease ■ Chronic pelvic infection / pain ■ Urethral stricture ■ Cancers of genitals and anus ■ Cardiovascular, neurological & musculo-skeletal complications ■ Death	■ Anxiety ■ Guilt ■ Stigma of STI ■ Stigma of infertility ■ Relationship problems ■ Domestic violence ■ Divorce ■ Abandonment
Infertility ■ Infertility in men and women	
Mother and child ■ Ectopic pregnancy ■ Spontaneous abortion ■ Premature rupture of membranes ■ Premature labor ■ Stillbirth ■ Neonatal death ■ Low birth weight ■ Neonatal infections ■ Congenital abnormalities	

3.3 STIs enhance HIV transmission

HIV/AIDS perspective

According to the 2003 World Health Report, HIV/AIDS is now the world's leading cause of death in adults aged 15–59 years.[11] UNAIDS estimated that at the end of 2003, 40 million people were living with HIV worldwide. Of these, two thirds are in Africa, where between 7.5 and 8.5 percent of adults are now estimated to be living with HIV. Of the 5 million new HIV infections that occurred during 2003, 3.2 million were in Africa. HIV/AIDS is also a significant concern in other regions, where more recent epidemics have continued to expand in China, Indonesia, Papua New Guinea, Vietnam, several Central Asian Republics, the Baltic States and North Africa.[12]

Increased infectiousness and susceptibility

STIs enhance HIV transmission through:

- Increasing infectiousness:
  the presence of an STI in an HIV-positive individual increases their ability to transmit or "give" HIV.
- Increasing susceptibility:
  the presence of an STI in an HIV-negative individual increases their ability to become infected with or "get" HIV.

A large number of biological and epidemiological studies conducted in four continents have shown that STIs facilitate HIV transmission.[13] The links between STIs and HIV/AIDS are complex. The effects of STIs on HIV transmission have been shown to vary for different STIs, between women and men, among different populations and at different stages of the HIV/AIDS epidemic.

Table 5. Effect of STIs on HIV transmission

	INCREASED INFECTIOUSNESS	INCREASED SUSCEPTIBILITY
ULCERATIVE STIs	■ HIV has been isolated in men and women from genital ulcers.[14-16] ■ In addition to shedding of the virus directly from the ulcers, increased concentrations of HIV have also been found in the semen[17] of men and cervico-vaginal fluids[18] of women with genital ulcers.	■ Genital ulcers may increase susceptibility to HIV through epithelial damage and by increasing the number and activation of HIV-susceptible cells in the genital tract.[19, 20] ■ Increased susceptibility has been documented for HSV-2, chancroid and syphilis.[21, 22]
NON-ULCERATIVE STIs	■ Increased urethral shedding of HIV has been documented in men with urethritis.[23-25] ■ Both symptomatic and asymptomatic urethritis are associated with increased HIV shedding[26] and treatment of urethritis has resulted in decreased HIV shedding.[27, 28] ■ Cervical inflammation has been associated with increased viral shedding[29, 30] and reduced shedding has been observed following treatment.[31]	■ Non-ulcerative STIs may increase susceptibility by increasing the presence of HIV-susceptible cells in the genital tract.[32] ■ Significant association with HIV seroconversion has been documented for gonorrhea.[33, 34] ■ Infection with chlamydia and trichomonas has also been associated with increased susceptibility to HIV.[35, 36]

Herpes (HSV-2) and HIV

HSV-2 may be of particular significance in the spread of HIV, especially in Africa.[37] HSV-2 is one of the most common STIs worldwide.[38, 39] High sero-prevalences have been reported in both developed and developing countries, with particularly high rates in some parts of Africa.[40-43] A number of studies in Africa have documented a strong association between HSV-2 and HIV/AIDS.[44-46] Mathematical modeling of the HIV/AIDS epidemic in Uganda estimated that genital ulcers were responsible for about 90 percent of HIV infections during the first ten years of the epidemic.[47]

High prevalences, the lifelong recurrent and often asymptomatic nature of the infection, as well as limitations in diagnosis and treatment, contribute to the role of HSV-2 in facilitating HIV transmission.[48] Furthermore, a two-way interaction between HIV/AIDS and HSV-2 has been demonstrated. While HSV-2 infection enhances the transmission of HIV, HIV increases the frequency, duration and severity of HSV-2 clinical manifestations.[49] Recent population-based studies from Africa suggest that most individuals (up to 90 percent) infected with HIV are also infected with HSV-2.[50] Evidence is thus accumulating that HSV-2 and HIV/AIDS are mutually reinforcing epidemics and that this relationship is of particular significance in parts of Africa.

Other reproductive tract infections and HIV

BV and candidiasis both cause vaginitis but are not traditionally considered STIs. While both the candida yeast and the organisms associated with BV can be transmitted to a woman from a partner, both infections can also occur as a result of other factors.

Candidiasis appears to double female susceptibility to HIV.[51] BV has been strongly associated with HIV infection[52-54] for both susceptibility and infectiousness. In every society, BV is the most common cause of abnormal vaginal discharge.[55] Thus, BV may have important implications for the spread of HIV.

Summary of the effects of STIs on HIV transmission

- *Ulcerative STIs have been shown to have a greater overall enhancing effect on* HIV transmission than non-ulcerative infections.[56, 57]

A review of available studies up to January 2000 presented the following broad conclusions:[58]

- Ulcerative STIs increase the susceptibility of men to HIV about *4 times* and increase the susceptibility of women to HIV about *3 times*.
- Non-ulcerative STIs increase the susceptibility of men to HIV about *3 times* and the susceptibility of women about *twice*.
- STIs in general appear to increase the infectiousness of an HIV-positive individual about *twice*.

The reviewers noted, however, that these conclusions are tentative and that further studies are needed to improve understanding of the complex interactions between HIV and various STIs.

3.4 STI treatment interventions can reduce the incidence of HIV infection

A 2003 review concluded that treatment of most RTIs results in a reduction of genital tract HIV-I viral load.[59] There is also evidence that interventions to improve the management of STIs can reduce the incidence of HIV infection.

World Health Report 2002 findings[60]

The World Health Report 2002 evaluated various HIV prevention interventions. These included population-wide mass media, voluntary counseling and testing (VCT), school-based HIV/AIDS education, interventions

for sex workers, peer outreach for men who have sex with men, prevention of mother-to-child transmission (PMTCT), antiretroviral therapy and treatment of STIs. The report noted that specific interventions may have different impacts in different settings. However, it concluded that in all areas except the A-subregions,[d] the treatment of STIs had a higher impact on reduction of HIV transmission at population level than the other preventive interventions. (In the A-subregions, peer education among men who have sex with men had a higher impact.)

Mwanza and Rakai trials

Between 1991 and 1994, a landmark randomized control trial conducted in the Mwanza Region of Tanzania assessed the impact of improved STI management on about 12,000 adults. The intervention resulted in significant reductions in the prevalences of syphilis and symptomatic male urethritis. HIV incidence in the general population was reduced by about 40 percent compared with a control group.[61] The Mwanza trial was the first study to provide direct evidence that improved clinical services for STIs can reduce HIV incidence. In contrast, however, a randomized controlled trial in Rakai, Uganda, found that intermittent mass treatment reduced the prevalence of some STIs, but had no effect on HIV incidence.[62] The different outcomes of the Mwanza and Rakai trails have been a source of considerable debate. Possible explanations for the differences are discussed in Annex 3.

A WHO/UNAIDS review of the findings of the two trials concluded that there are sufficient scientific data pointing to the fact that STI control can have a significant impact on HIV transmission. The review further concluded that the impact of STI control is greater in the early stages of an HIV epidemic but remains an important control strategy even in mature epidemics.[63]

In conflict-affected settings where the HIV epidemic may be in the early stages, the need for early effective STI intervention is clear. It is also worth noting that while mass treatment did not have a significant impact in the Rakai trial, there may be a role for mass treatment in some conflict-affected settings; for example, where HIV prevalence is low and where there is little interaction between displaced groups and members of the surrounding community, thus limiting opportunities for reinfection after treatment.[64]

Summary of the links between STIs and HIV/AIDS[65]

- The main transmission route for both HIV and other STIs is sexual.[e]
- Other transmission routes for both HIV and STIs include blood, blood products, donated organs or tissue, and transmission from an infected mother to her fetus or newborn infant.
- Many of the measures for preventing sexual transmission of HIV and STIs are thus the same, as are the target audiences for these interventions.
- Clinical services for STIs are important points of contact with persons at high risk of both HIV and STIs, both for diagnosis and treatment as well as for education and counseling.
- STIs facilitate the transmission of HIV.
- Early diagnosis and effective treatment of STIs are important strategies for the prevention of HIV transmission.
- There is growing evidence that HIV and some STIs may reinforce the spread of each other.
- Trends in STI incidence and prevalence can be useful early indicators of changes in sexual behavior and may serve as proxy indicators for HIV. Bacterial STIs are, unlike HIV, curable. Therefore, new STI cases are likely to reflect much more recent sexual activity than HIV infection, which can indicate risk behavior many years earlier.[66]

[d] The WHO member states have been divided into five mortality strata on the basis of their levels of child mortality and adult mortality. The six WHO geographical regions have been divided into fourteen subregions based on mortality strata. The A subregions represent the lowest child and adult mortalities.

[e] There have been recent suggestions that unsafe health care practices, particularly injections, may account for the majority of HIV infections in Africa. These suggestions have been strongly refuted by WHO and UNAIDS. An expert committee concluded that evidence points overwhelmingly to the fact that sexual transmission is the primary mode of HIV transmission in Africa. UNAIDS. Press statement. Expert group stresses that unsafe sex is primary mode of HIV transmission in Africa. Geneva, March 14, 2003.

3.5 Effective control measures for STIs are available

Cost-effectiveness of treatment

Many STIs are easily curable with appropriate treatment.

"Syphilis is the classic example of an STI that can be controlled by public health measures due to the availability of a highly sensitive diagnostic test and a highly effective and affordable treatment..."[67]

In Africa during the 1990s, syphilis prevalence amongst pregnant women varied from 2.5 percent in Burkina Faso to 17.4 percent in Cameroon. WHO has advised that antenatal screening and treatment of pregnant women for syphilis is cost-effective, even in areas of prevalence as low as 0.1 percent.[68] It has been estimated that the prevention or cure of 100 initial cases of gonorrhea in non-core groups would prevent 426 future cases of gonorrhea over the following 10 years. If the 100 cases were from core (high transmission) groups, the number of cases prevented would be 4,278.[69]

The Mwanza trial intervention, which improved the clinical management of STIs, resulted in a decrease in incidence and prevalence of some STIs as well as HIV. The intervention compared favorably with other cost-effective health care interventions such as childhood immunization programs.[70] STI treatment becomes even more cost-effective when the benefits of reduced HIV transmission are included. In financial terms, the costs of preventing and treating STIs are outweighed by the longer-term gains to the health care system and the economy in terms of cases and complications averted. Furthermore, effective management of STIs reduces the emotional and social costs of illness, infertility, stigma and potential relationship problems.

Alleviation and prevention

The viral STIs, such as genital herpes and hepatitis, are incurable. However, for some viral STIs, measures are available to shorten the duration of illness, alleviate the symptoms and reduce the frequency of recurrence, for example, acyclovir treatment for genital herpes.

All STIs are preventable. For some, such as hepatitis B, vaccines are available. Most importantly however, all STIs can be prevented through behavioral measures.

3.6 STIs are poorly managed in many settings

"…[STI] control in many countries tended to be coercive – police rounding up prostitutes and so on. [STIs] tended to be approached more as an individual's problem than as a public health problem. And they were always given a very low priority…" Peter Piot.[71]

In spite of the existence of effective prevention and care measures, STIs remain a significant public health problem in both developing and industrialized countries.[1] For example, in the United Kingdom rates of gonorrhea, syphilis and chlamydial infections have more than doubled since 1995, and increases have also been documented in other Western European countries.[72]

Many factors contribute to the failure to control STIs. An awareness of these underlying issues is important when designing and implementing STI interventions for conflict-affected settings.

Reasons for failure to control STIs[73]

Policy

- Low priority for resource allocation to address STIs by policy-makers and planners, possibly as a result of failure to recognize the magnitude of the problem. Stigma associated with STIs could also be a contributing factor.
- Restrictive policies limiting services provision to women and youth, or which prevent lower cadres of providers from prescribing.
- Lack of a rational, practical package of activities that could be the basis for STI control programs.
- Inadequate data upon which to base decisions and justify the need for resources.

Access

- Lack of appropriate health care facilities, long distances and lack of resources to pay for transport and treatment.
- Service delivery through reproductive health services not accessed by all women or by men or youth.
- Socio-cultural factors which prevent women or youth from seeking health care.
- Lack of acceptability of health services as a result of privacy, confidentiality and staff attitude issues.
- Lack of awareness of STIs, myths and social stigma.

Service delivery

- Poor health system infrastructure.
- Inadequately trained health care providers.
- Lack of quality control in public and private sector services.
- Lack of laboratory facilities and lack of simple, affordable, reliable tests for use at peripheral level.
- Lack of affordable, effective drugs, little control of drug quality, irrational use of antibiotics and antimicrobial resistance.
- Lack of condoms.

Patient care

- Limitations of the syndromic approach, including lack of means to address asymptomatic infections.
- Lack of awareness or lack of acceptance of the syndromic approach by practitioners.
- Lack of emphasis on counseling, reducing risk behavior and partner management.

KEY POINTS

- STIs are among the most common health problems affecting adults worldwide.
- Sub-Saharan Africa has the highest incidences and prevalences of STIs.
- STIs can have serious medical consequences, including chronic illness, death, infertility, spontaneous abortion, neonatal illness and congenital abnormalities.
- STIs can have emotional and social consequences.
- Both ulcerative and non-ulcerative STIs enhance HIV transmission through increasing infectiousness and increasing susceptibility.
- Effective treatment of STIs can reduce the incidence of HIV infection.
- Many STIs are curable with appropriate treatment.
- Effective STI management is cost-effective in terms of averting future costs to the individual, the health system and society.
- STIs are poorly managed in many settings for a variety of economic, structural and social reasons.

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Section 4

Why focus on STIs in conflict-affected settings?

"(W)arfare is an amplifier of disease, creating ideal conditions for its spread: poverty, famine, destruction of health and other vital infrastructure, large population movements, and the breakdown of family units and thus protective networks for women..." [1]

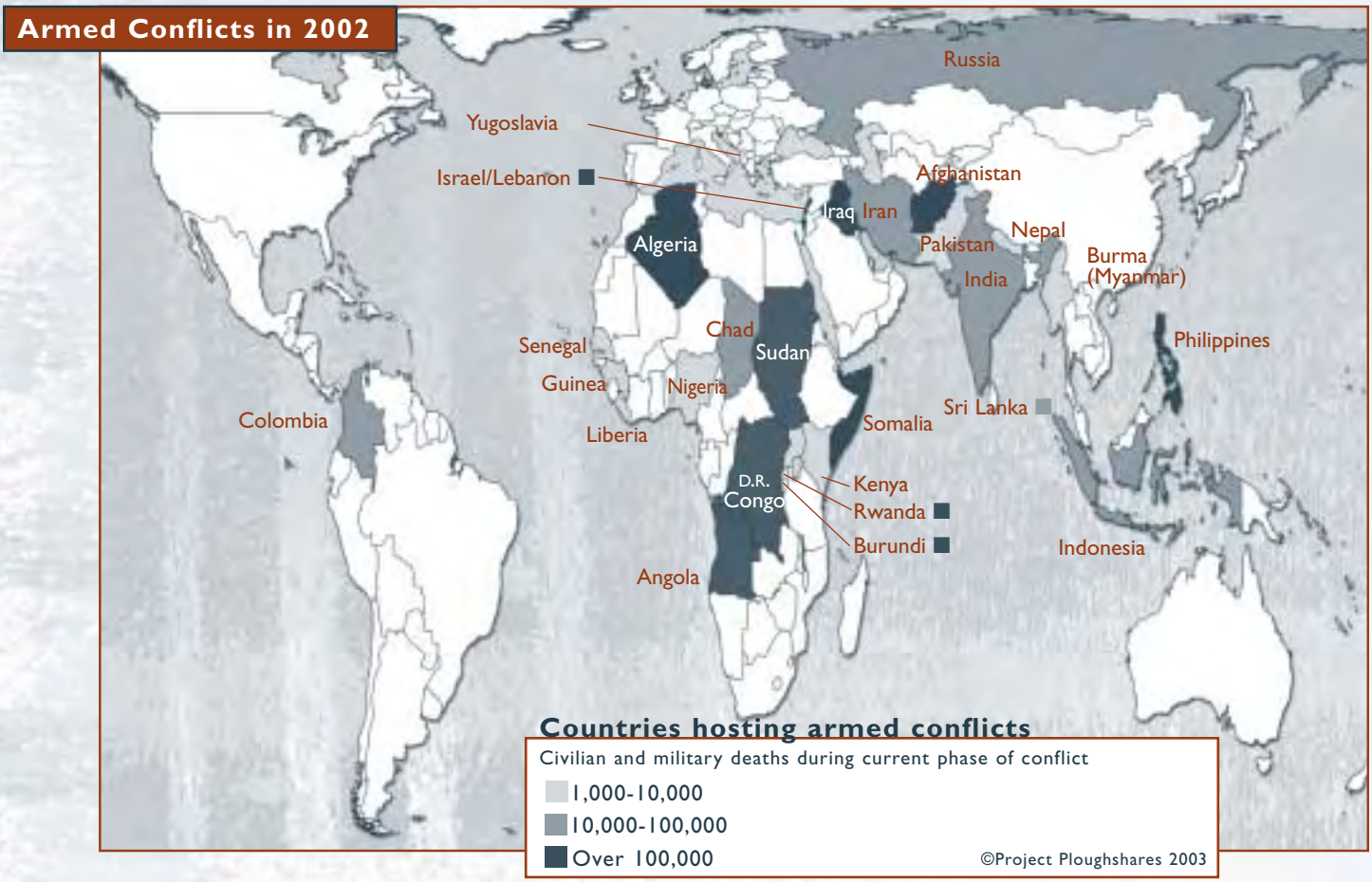
4.1 Overlap of poverty, conflict, displacement, STIs and HIV

A degree of geographic overlap exists among resource-poor settings, violent conflicts, population displacements and high prevalences of STIs and HIV/AIDS.

Eighty-five percent of new STIs occur in resource-poor settings.[2] Sub-Saharan Africa and South East Asia have the highest incidences and prevalences of STIs.[3] These regions are also home to 66 percent and 16 percent respectively of the world's people living with HIV/AIDS.[4] Eighty percent of the world's poorest countries today have suffered a major armed conflict during the past 15 years.[5] In 2002, there were 21 major armed conflicts in 19 locations throughout the world. The majority of these conflicts took place in Africa and Asia.[6] In sub-Saharan Africa, the number of states at war or with significant lethal conflicts increased from 11 in 1989 to 22 in 2000.[7]

According to the United States Committee for Refugees, at the end of 2002 there were 34.8 million uprooted people worldwide.[8] Of these, 13 million were refugees and asylum seekers and 21.8 million were internally displaced. Of the total number of "people of concern"[f] to UNHCR during 2002, 46 percent were in Asia and 22 percent in Africa. The 10 countries that received the greatest refugee influxes during 2002 were all in Africa.[9]

Resource-poor settings with high STI and HIV/AIDS burdens form the backdrop to STI management in a significant number of conflict-affected situations.



[f] People of concern to UNHCR include refugees, internally displaced, asylum seekers, returnees and others. Statistics concerning displaced people are inexact and controversial.

4.2 Conflict-affected settings present risks for the spread of STIs

In conflict-affected settings, a number of factors may increase vulnerability to STI/HIV transmission.

Risk factors for STI spread in conflict situations

Population movements

Population movements and migration are recognized as important risk factors for the transmission of STIs and HIV.[10-12] Spread of STIs may result from sexual interaction between populations with different STI prevalences, for example, between displaced and host communities, returnees and home communities, urban and rural populations, or among displaced populations from different geographical areas or cultures.[13-16]

Social instability

Disruption of family and social structures as well as the psychological trauma of conflict and displacement may result in changes in sexual behavior.[17] Lack of work, educational and recreational opportunities, and the accompanying boredom and frustration, further contribute to risky sexual behavior.[18] Young people are particularly at risk.

Poverty

Increased economic vulnerability of women and unaccompanied minors in conflict situations may result in survival sex,[19,20] involving commercial sex or the bartering of sex for basic commodities and shelter.

Sexual violence and exploitation

Social turbulence and economic vulnerability, as well as breakdown of law and order, increase the vulnerability of women and young people to sexual violence and exploitation. Refugee women often lack access to social or legal protections.[21] Rape has been associated with violent conflict for centuries, both as a weapon of war in the case of systematic rape, or as opportunistic exploitation of women.[22] For example, during the Bosnian conflict, an estimated 30,000 - 40,000 women were raped.[23]

Commercial sex

The commercial sex trade may flourish in conflict-affected situations, with an influx of commercial sex workers from other areas.[24] Clients may include the displaced population, as well as military or peacekeeping forces and relief workers.

Presence of military or peacekeeping forces

Armed forces are vulnerable to STIs due to factors such as young age, mobility, separation from families, high stress work environments, lack of recreational outlets and alcohol misuse, all of which may predispose soldiers to risky sexual behavior. During peacetime, HIV prevalences among armed forces are generally two to five times higher than in civilian populations; in times of conflict the difference can be much greater.[25] Soldiers interact with civilian populations where they are stationed and upon returning home also spread STIs into their home communities. Geographical distribution of AIDS cases in Uganda in 1990 reflected patterns of recruitment in Uganda's national liberation army a decade earlier.[26]

Risk factors for STI spread (cont'd)

Reduced access to health services

Conflict may disrupt curative services and prevention programs. Access to condoms may be limited. Health facilities may be destroyed. High workloads, shortages of trained staff and lack of supplies may result in risky health care practices, such as neglect of universal precautions, unsafe injections and unscreened blood transfusions.[27] Conflict-related injuries may result in an increased need for blood transfusions. Where health services remain functional, access may be limited because of insecurity, lack of transport or lack of money.

Increased substance abuse

Conflict has been associated with increased use of illicit drugs. Risks include both those associated with injecting drug use as well as risky sexual behavior while under the influence of drugs or alcohol.[28]

Delayed risk

While there are clear risk factors, all the factors influencing STI transmission in conflict-affected settings are not yet fully understood. In some settings there appear to be competing factors which may reduce or delay the risk for STI transmission.[29]

For example, in the Balkans many of the risk factors commonly associated with HIV spread, such as mass displacement, sexual violence, large numbers of returning combatants and refugees, and trafficking of women have been present over the past decade. Yet HIV infection rates in this region have remained low. In Tanzania, data from antenatal sentinel surveillance in eight refugee camps in 2001 indicated that median HIV prevalence among refugee women attending antenatal clinics was lower than in the women's countries of origin and lower than in the Tanzanian population.[30]

Several factors may contribute to reducing the risk. Reduced access and mobility into and out of conflict-affected populations may limit exposure to external sexual networks. For example, UNHCR recently provided evidence that populations in conflict settings - typically thought to be at higher risk of contracting HIV - in some circumstances, such as Angola, where people have been isolated and less mobile, may keep their prevalence rate lower than that of neighboring countries.[31] NGO presence may bring improved access to health services and prevention activities. However, the aftermath of conflict may carry particular risks for STI transmission:

- Displaced people and soldiers return home, carrying infections into their communities.
- Transport routes re-open, bringing truck drivers, migrant workers and travelers into areas previously relatively isolated.
- Post-war reconstruction brings new business opportunities and may bring foreign workers.
- Populations emerging from extended periods of instability may not have had exposure to basic information about STIs and HIV/AIDS.

In summary, STI transmission in conflict-affected populations depends upon:

- the relative prevalence of STIs in different populations;
- the level of sexual interaction among the different populations; and
- a variety of other contextual factors not fully understood.

Further research is needed to understand these factors. In addition, care should be taken to avoid stigmatizing refugees and displaced people as being responsible for spreading HIV and STIs. However, conflicts have a clear potential to promote the transmission of STIs and HIV in displaced populations, in host communities, in other war-affected communities and in the home communities of military and returnees. Therefore, *all conflict-affected populations should be regarded as vulnerable*.

4.3 Conflict-affected settings present challenges and opportunities for STI control

The management of STIs is challenging in any setting, but particularly so in resource-constrained contexts. Recognition of resource-related issues is important for effective program management and particularly for sustainability. Conflict-affected settings present an additional set of challenges but may also present new opportunities for combating STIs.

Table 6. Challenges and opportunities for STI control in conflict-affected settings

	CHALLENGES	OPPORTUNITIES
RESOURCES	■ In the past, STIs and HIV have not been considered an immediate threat to life, and therefore not a relief issue.[32] Furthermore, STIs are less visible causes of mortality and morbidity and may thus receive inadequate attention from funders and implementers.	■ Conflict situations may attract significant resources, with governments and international organizations providing financial aid and other assistance. ■ Media attention may raise the profile of the situation, potentially attracting further resources.
ACCESS	■ Damage to health and transport infrastructure, remote settings and insecurity may limit patient access and service operation.	■ In camps, geographic access to health services may be better than in the dispersed rural communities from which people may originate. ■ Free-of-charge services provided by NGOs allow access to people previously unable to afford care. ■ Post-conflict reconstruction provides an opportunity to upgrade existing infrastructure and services. ■ Host population health facilities in the proximity of displaced populations are often improved, in the interests of equity and to serve as referral facilities. ■ Host communities should also have access to health services provided for the displaced population.
CAPACITY	■ War casualties and displacement among health staff may result in shortages of qualified service providers. ■ Remote settings pose challenges to recruiting and retaining staff. ■ Staff recruited from different areas or cultural groups may be unfamiliar with STI issues in the conflict-affected population. ■ High staff turnover results in lack of institutional memory and necessitates repeated training.	■ NGOs are frequently present in conflict-affected areas, bringing funding, technical expertise and logistical capacity, and thus the capacity to provide comprehensive STI services. ■ NGO programs often include capacity-building opportunities for refugee as well as host country staff.

	CHALLENGES	OPPORTUNITIES
IMPLEMENTATION	■ Conflict-related trauma may affect health care-seeking behavior. ■ After conflict, there may be an impetus to re-populate and thus adults may not want to use condoms.[33] ■ Camp settings may function like small communities, with confidentiality issues and stigma potentially impacting effective STI care. ■ The presence of a number of different cultural or religious groups within one conflict-affected population may require different approaches to STI management within a single program.	■ Camp populations are usually clearly defined, basic population data are often available, and logistically the population is easier to reach. ■ The contained environment may facilitate health services coverage, and activities such as partner notification and health education. ■ Education and recreation programs for young people often initiated by NGOs may provide avenues to reach in- and out-of-school youth with STI information and services. Social groups and self-reliance programs can be used to reach women and men. ■ The presence of military and commercial sex workers (CSW) may provide unique opportunities to work with these high risk groups.
QUALITY OF CARE	■ NGOs may take on the role of rehabilitating or supporting the government health system. A tension may exist between the need to achieve the appropriate level of service to address urgent problems, and the slow and complex process of achieving sustainable improvements to a system. ■ Drug supply is a key example of where these tensions could exist, involving issues such as logistics, appropriate prescription and accountability.	■ In some settings NGOs may have autonomy over health services provision. This autonomy can facilitate STI service delivery, both through the provision of resources as well as training and supervision of the quality of service provision. ■ Collaboration between NGO and government services can improve quality of care in both.

In spite of the challenges to STI management, the risks for spread of STIs in conflict-affected settings warrant urgent intervention. ***The potential for intervention should be realized and opportunities actively sought from the outset of the emergency***.

The importance of STI management in emergencies, including conflict-affected settings, is emphasized by two key documents on humanitarian response. The Sphere project, which represents internationally agreed minimum standards in disaster response, presents the syndromic case management of STIs as part of a package of minimum services to control HIV/AIDS.[34] The "Guidelines on HIV/AIDS interventions in emergency settings"[35] prepared by the Interagency Standing Committee includes syndromic management as part of a minimum response to HIV/AIDS "…to be conducted even in the midst of an emergency…"

The HIV/AIDS pandemic is exacerbated by conditions of violence and instability... If unchecked, the HIV/AIDS pandemic may pose a risk to stability and security…" UN Security Council Resolution 1308 (July 17, 2000)

KEY POINTS

- Overlaps exist among resource-poor settings, violent conflicts, population displacements and high prevalences of STIs and HIV/AIDS.
- In conflict-affected settings, a number of factors may increase vulnerability to STI/HIV transmission:
  - population movements
  - social instability
  - poverty
  - commercial sex
  - presence of military or peacekeeping forces
  - reduced access to health services
  - substance abuse
- Conflict may have an immediate or a delayed effect on the spread of STIs.
- Conflict-affected settings present both challenges and opportunities for STI control, encompassing:
  - resources
  - access
  - capacity
  - implementation
  - quality of care

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Section 5

Contexts for approaching STI care

The rate of spread and the persistence of an STI in a population depend on the average number of new cases of infection generated by an infected person.

5.1 The epidemiological context

Factors affecting the rate of spread of an STI

The rate of spread of an STI is affected by:

- the probability that an exposed susceptible person will acquire the infection ***(b)***,
- the rate of exposure of susceptible persons to infected people ***(c)***, and
- the time that newly infected persons remain infectious ***(D)***.

These three factors determine the case reproduction rate (Ro).
Ro may be viewed as an equation: **Ro = *b* * *c* * *D***

The higher the values of ***b***, ***c*** and ***D***, the higher **Ro** will be. The higher the value of **Ro**, the greater the potential for the spread of the infection.

The three factors (***b***, ***c*** and ***D***) are subject to a variety of influences and vary across populations, over time and for different organisms. An understanding of these factors and the influences upon them, provides a basis for interventions. For example:

b is influenced by biological and microbial factors, condom use, the presence of other STIs, circumcision status and practices such as dry sex and vaginal douching.
c is influenced by patterns of sexual mixing, frequency of partner change, time gaps between sexual partnerships and concurrent partnerships.
D is influenced by health care-seeking behavior, quality of case management and the presence of screening programs.

Core groups

All members of a community are not at equal risk for acquiring and transmitting STIs. Relatively small groups of individuals, which have high rates of partner change (high "**c**"), increase the rate of spread of STIs disproportionately compared with the general population. These groups are termed "high frequency transmitters" or "core groups." The "**Ro**" for core groups is high and these groups play an important role in the establishment and maintenance of STIs in a community.[1]

Also of significance are "bridging groups," the members of which have sex both with core groups and the general population.[2] Bridging groups thus spread infections into the general population.

core groups ⟷ bridging groups ⟷ general population

Commercial sex workers are an important core group, while their clients may be bridging groups. Other core and bridging groups may include people working away from home (e.g., migrant workers, long-distance truck drivers and military personnel), men who have sex with men, substance abusers and young people.

Infections are spread from core or bridging groups to individuals in the general population who have lower rates of partner change. These individuals are less likely to transmit the infection any further (low "**Ro**"). For example, men frequenting commercial sex workers transmit infection to their wives, who do not have any other sex partners. Treatment of one STI in a core group may prevent the spread of the infection to several other individuals in bridging groups and the general population. From the perspective of controlling STIs in a community, interventions targeting core groups are likely to have a greater impact on STI incidence[3] and be more cost-effective than those interventions targeting the general population.[4] Targeted interventions are discussed further in Section 6.

5.2 The public health context

The objectives of STI control are to:

- interrupt the transmission of STIs and thus the spread through the community,
- prevent the development of diseases and complications, and
- reduce the risk of HIV transmission.

These objectives are achieved through primary and secondary prevention[5]:

Primary prevention

Primary prevention focuses on the entire community and aims to prevent individuals from acquiring an STI.

Primary prevention includes:

- information campaigns on STIs, their complications and the association between HIV and other STIs
- promotion of safer sex and risk reduction strategies
- promotion of condoms

Secondary prevention

Secondary prevention focuses on infected individuals and aims to prevent or reduce illness and complications, as well as preventing transmission of the infection to others. This may be achieved by shortening the duration of the infection with treatment.

Secondary prevention includes:

- promotion of early health care-seeking behavior
- accessible, acceptable and effective care, including education and counseling
- early detection and treatment of asymptomatic infections through case finding and screening

The public health package

WHO/UNAIDS advocates a "public health package" for STI prevention and care, which encompasses both primary and secondary prevention strategies.[6]

The essential components of the public health package for STI control:

- Promotion of safer sexual behavior
- Condom programming – encompassing a range of activities from condom promotion to the planning and management of supplies and distribution
- Promotion of health care-seeking behavior
- Integration of STI care into primary health care, reproductive health care facilities, private clinics and other service delivery points

The essential components (cont'd)

- Specific services for populations with high-risk behaviors – such as female and male sex workers, adolescents, long-distance truck drivers, military personnel, prisoners and men who have sex with men
- Comprehensive case management of STIs
- Early detection of symptomatic and asymptomatic reproductive tract infections
- Prevention and care of congenital syphilis and neonatal conjunctivitis

KEY POINTS

- The rate of spread of an STI in a community depends on:
  - the probability that an exposed person will acquire the infection
  - the frequency of exposure
  - the duration of infectiousness in an infected person.
- Core groups of high frequency transmitters increase the rate of spread of STIs disproportionately.
- Primary prevention aims to prevent individuals from acquiring STIs.
- Secondary prevention aims to reduce illness and complications, and prevent the spread of the STI to others.
- WHO advocates a "public health package" which includes primary and secondary prevention strategies

5.3 The syndromic management context

Diagnosis of STIs

There are three methods for diagnosing STIs:

1. Clinical etiological diagnosis:

The clinician identifies a likely causative organism based on their interpretation of symptoms determined during history taking and signs observed during clinical examination. Clinical etiological diagnosis has been shown to be inaccurate even in the hands of experienced clinicians. [7,8] This method of diagnosis is therefore *not recommended*.

2. Laboratory diagnosis:

A laboratory test on blood, genital secretions, exudates (substance that has been exuded), urine or saliva identifies the causative organism(s). Laboratory diagnosis, which would allow targeting of treatment at a specific organism, is the preferred diagnostic option. However, this is *rarely feasible* in resource-constrained or conflict-affected contexts. The role of laboratory testing is discussed further in subsequent sections.

3. Syndromic diagnosis:

Based on a group of symptoms and signs, a syndrome with a number of possible causative organisms is identified. The syndromic approach to STI management is the currently accepted approach in most resource-poor settings. It is also the *most feasible approach in the unstable phases of conflict-affected situations and in many post-conflict settings*.

The role of laboratory testing

The syndromic approach is based on the concept that laboratory testing is not needed. However, laboratory testing does have an important role in STI management within both public health and clinical contexts. An overview of STI laboratory tests may be found in the WHO publication "Laboratory tests for the detection of reproductive tract infections." (Refer to Annex 11.)

Public health role

Laboratories have a central role in public health decision-making for the control of STIs. Laboratory tests help to document prevalences and antibiotic sensitivities needed to guide the syndromic approach, identify at-risk populations and monitor epidemiological changes over time. This information is required to highlight the magnitude of the STI problem, to advocate for resources, to plan STI control interventions and to assess their effectiveness. Reference laboratories are also needed for quality control of results from peripheral laboratories and for staff training.

Clinical role

Where affordable and feasible, laboratory testing remains the diagnostic method of choice in the clinical management of STIs. However, the provision of laboratory testing for STIs may be costly and complicated.

Factors impacting laboratory testing

Operational factors

For operational reasons, laboratory testing at the primary health care level is rarely a feasible option in resource-constrained settings. A laboratory requires space and clean water, and may need a reliable power supply and refrigeration. A consistent supply of reagents is also needed. Equipment requires maintenance and spare parts. These requirements are often lacking in resource-poor settings, particularly in peripheral areas. Furthermore, the high costs of many tests preclude their use. Sophisticated tests tend to require specialized equipment and reagents. A nationwide survey in a Latin American country found that in the public sector 70 percent of all laboratory equipment was not functioning because of missing spare parts or reagents.[9] For many tests, specific expertise is required. A system of external quality control should also be in place. Even simple tests are of no value if performed poorly. In many settings, suitably qualified laboratory personnel are in short supply, and are often poorly paid and unmotivated.

Test reliability

The sensitivity and specificity of commercially available tests can vary significantly, thus negatively affecting the reliability of laboratory testing for STI diagnosis.[10] Reliability is also influenced by the skill level of the technician.

No pathogen identified

In a significant number of STI cases, no pathogen is identified. Even after complete diagnostic evaluation, at least 25 percent of patients who have genital ulcers have no laboratory-confirmed diagnosis.[11] In a study involving seven countries, in 21 percent of men presenting with urethral discharge, no pathogen could be identified.[12] Thus, even with laboratory testing, these patients would still require treatment to cover a range of possible organisms.

continued ►

Factors impacting laboratory testing (cont'd)

Multiple pathogens identified

In patients presenting with symptoms and signs of STIs, more than one pathogen is frequently present, for example, gonorrhea as well as chlamydia in urethral discharge. Again, a combination of medications would be required. In the seven-country study, multiple infections accounted for 24 percent of urethral discharge cases. Studies on genital ulcers in China and Uganda found mixed etiologies in 12 percent and 10 percent of cases respectively.[13]

Asymptomatic infections

A significant percentage of STIs are asymptomatic and would thus not benefit from the availability of laboratory testing in curative services. Up to 80 percent of women and 10 percent of men with gonorrhea are asymptomatic.[14] With chlamydia infection, 80 to 90 percent of women[15] and 50 percent of men[16] may be asymptomatic. Trichomonas vaginitis may be asymptomatic in 50 percent of cases.[17] Screening programs are needed to detect asymptomatic infections.

In most conflict-affected settings, laboratory testing does not have a role in the clinical management of individual STI patients. However, there are limited but important uses for STI laboratory tests in conflict-affected settings:

►MINIMUM response:

- Screening of all blood for transfusion for syphilis (using Rapid Plasma Reagin - RPR), hepatitis B and HIV

►COMPREHENSIVE response:

Minimum response plus:

- Syphilis screening offered to all pregnant women and all STI patients
- HIV testing where appropriate
- Where feasible, biological studies to obtain data for programmatic decision-making and advocacy (Discussed further in Section 7)

Note:
Microscopy does not improve the syndromic management of urethral discharge in men and is not recommended as part of the syndromic approach. Microscopy does not significantly improve the syndromic management of vaginal discharge, other than for the identification of trichomonas to help make a decision about partner notification. It has also been recommended that the pH and KOH (potassium hydroxide) tests be dropped from the syndromic management of vaginal discharge as the sensitivity and specificity of these tests are considered inadequate for diagnosis of BV. (Discussed further under "Limitations of syndromic management.")

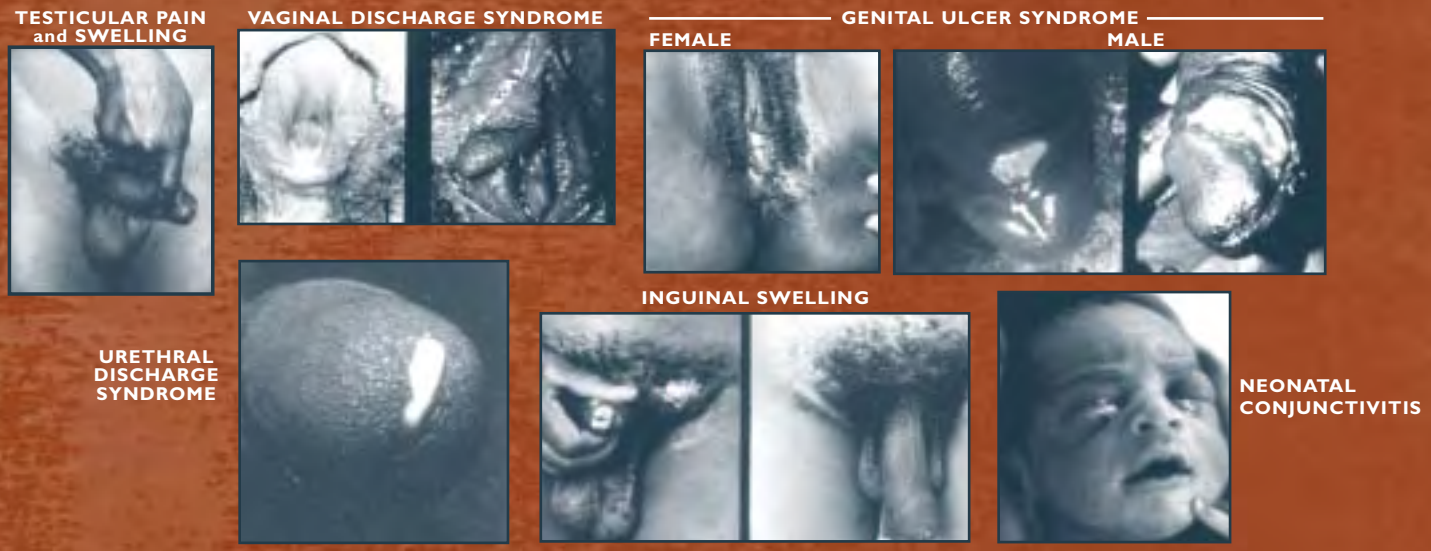
Part of the solution to the challenges of STI diagnosis in resource-poor settings would be the availability of low-cost, simple, rapid tests that could be used at the peripheral level. This need has long been recognized. There were over 40 rapid tests for syphilis, chlamydia and gonorrhea on the market in 2001. However, in most cases, there had been no independent evaluation of their performance.[18] WHO is currently involved in the evaluation of such rapid tests, to assess their performance and determine their role at the primary health care level. It seems likely that within the relatively near future, appropriate rapid tests may be available for use at the primary health care level in resource-constrained settings. Until such time, syndromic management remains the only feasible option in most resource-poor and conflict-affected settings.

Rationale for syndromic management

The concept of a syndromic approach was developed by WHO during the 1970s as a simplified method of case management for STIs.[19] The approach, which is not dependent upon laboratory diagnosis, was intended to improve the management of STIs in resource-constrained settings. Although there are more than 30 organisms which may be transmitted through sexual intercourse, as a group these organisms give rise to a limited number of clinical syndromes. The basis of syndromic case management is the identification of a consistent and easily recognizable group of symptoms and signs, which constitute a defined syndrome.

Table 7. STI syndromes (Also, see Annex I for selected STI syndromic case definitions.)

SYNDROME	CAUSATIVE ORGANISMS
Urethral discharge in men (urethritis)	Neisseria gonorrhea Chlamydia trachomatis Non-specific urethritis pathogens
Testicular pain and swelling (epididymo-orchitis)	Neisseria gonorrhea Chlamydia trachomatis Non-specific urethritis pathogens
Vaginal discharge (vaginitis/cervicitis)	BV Trichomonas vaginalis Candida albicans Neisseria gonorrhea Chlamydia trachomatis
Lower abdominal pain in women (pelvic inflammatory disease)	Neisseria gonorrhea Chlamydia trachomatis
Genital ulcers	Treponema pallidum (syphilis) Haemophilus ducreyi (chancroid) Herpes simplex virus type 2 Calymmatobacterium granulomatis (granuloma inguinale) Chlamydia trachomatis L1-L3 (lymphogranuloma venereum)
Inguinal swelling	Chlamydia trachomatis Haemophilus ducreyi (chancroid)
Neonatal conjunctivitis (ophthalmia neonatorum)	Neisseria gonorrhea Chlamydia trachomatis



Photos: ©Teachings-aids at Low Cost (TALC)

Once the syndrome is diagnosed, the patient receives a combination of drugs effective against the most likely organisms responsible for the syndrome in a particular geographical area or population. Syndromic case management algorithms or flowcharts (refer to Annex 4) are used to guide diagnosis and treatment. These algorithms, originally created by the WHO, have been adapted over time and to a variety of settings. Numerous validation studies have been carried out,[20] documenting both advantages and limitations of the approach.

As a result of these advantages and limitations, the syndromic approach has been subject to considerable debate.[21]

"…Every flowchart represents a compromise between diagnostic accuracy and technical and financial realities…"[22]

Advantages of the syndromic approach

The syndromic approach is effective

WHO conducted a large review[23] of studies evaluating many of the WHO syndromic flowcharts in a variety of settings. The review concluded that the "syndromic approach, utilizing currently available flowcharts, works well in the management of people with symptomatic urethritis, genital ulcer disease and vaginitis…"[g] This review, however, also concluded that the syndromic approach works less well for the management of cervicitis.

The syndromic approach is efficient

As syndromic case management is not dependent upon laboratory testing, the patient and the health system are spared laboratory costs. The patient does not have to wait for test results and can be treated immediately. Treatment is thus provided at the first point of care. This reduces the risk of losing patients who are requested to return later for test results, or who are referred to other facilities for testing. Immediate treatment also increases patient satisfaction. In addition, because syndromic management can be practiced at the peripheral level, STI care is accessible to a wide segment of the population.

[g] Despite the effectiveness of the syndromic approach, the flowcharts need periodic review because patterns of infections may change over time. For example, HSV2 is becoming an increasingly common cause of genital ulcer syndrome in many settings. As the current WHO flowchart does not include medication for HSV-2 (only counseling), increasing prevalence of HSV-2 results in a higher failure rate of syndromic treatment for GUS. In 2001, a WHO expert consultation recommended that the current flowchart for GUS be modified to include treatment for HSV-2 in settings where HSV-2 prevalence is 30 percent or higher. Further data are however needed to define appropriate cut-off prevalences to institute treatment. The cost implications of treatment with acyclovir probably limit the feasibility of its use in most resource-constrained and conflict-affected settings. (WHO. Report of an expert consultation on improving the management of sexually transmitted infections. 2001.)

In a Mozambique study, only 41 percent of STI patients referred from primary health care facilities presented to a specialized STI clinic. While the specialized clinics provided better health education than the primary care facilities, this was offset by the high referral losses.[24] Delays in treatment, in addition to the direct medical consequences for the patient, also increase the risk of spreading the infection into the community as the period of infectiousness is prolonged.

Syndromic management facilitates standardization

Syndromic guidelines provide a simple, standardized way of managing STIs, which can be implemented at all levels of the health care system. Standardization facilitates the training and supervision of health workers. It encourages consistent, rational use of antibiotics which in turn helps to delay the development of antimicrobial resistance and promotes rational drug procurement. Standardization of case definitions also helps to improve reporting and surveillance.

Limitations of the syndromic approach

The following have been cited as limitations of the syndromic approach.[25]

- Overdiagnosis (as a result of poor specificity) and overtreatment, with the following consequences:
  - increased drug costs
  - increased potential for side effects and drug interactions
  - increased potential for antimicrobial resistance
  - changes in vaginal flora
  - psychological impact, domestic conflict and stigma
- Cannot detect asymptomatic infections
- Requires (re)training of staff
- Requires monitoring and updating
- Still requires a referral system
- Possible opposition from the medical establishment to introduction of the syndromic approach

Over-diagnosis and over-treatment are significant issues and will be discussed further in the section on syndromic management of vaginal discharge. Increased drug costs, side effects and drug interactions are also valid concerns. However, these concerns need to be weighed against the costs of incorrect diagnosis if clinical etiological diagnosis is used or against the costs of laboratory testing assuming this is feasible. Antimicrobial resistance results from adaptability of the organism, inadequate dosages and/or inadequate treatment duration. Therefore the potential for drug resistance is not confined to syndromic management, but to all circumstances in which antibiotics are prescribed. As the syndromic approach promotes standardization, it may in fact contribute towards minimizing resistance, particularly in settings where irrational prescribing is common. Changes in vaginal flora may also occur in any circumstance in which an antibiotic is used. Vaginal discharge, an RTI resulting from non-sexual causes, may be misdiagnosed as an STI, potentially resulting in emotional distress and social repercussions for the patient. However, this must be weighed against the costs of not treating a potential STI.

The inability to detect asymptomatic infections is an important limitation. However, the syndromic approach was not intended as a screening tool for detecting asymptomatic infections.[h] Staff training, monitoring and updating, and a referral system, will be required regardless of the approach to STI management used. Opposition from the medical establishment may be minimized if an evidence-based and collaborative approach is used when advocating syndromic management.

[h] "…The flowchart is for use in the case management of patients seeking care for vaginal discharge and it is not designed for the purposes of screening for asymptomatic STI…In certain settings a locally designed flowchart for screening populations at high risk of cervical infection may be developed…It should be noted, however, that the poor performance of earlier vaginal discharge flowcharts (which were originally designed as management tools), when used for screening for cervical infections, lead to the criticism of syndromic management…To avoid this it is advised that any flowcharts intended for screening be refined and validated before any recommendation for their use can be made…" (WHO. Report of an expert consultation on improving the management of sexually transmitted infections. 2001.)

Table 8. Summary of the advantages and limitations of the syndromic approach

ADVANTAGES	LIMITATIONS

■ Effective:
  ▪ especially for urethral discharge syndrome (UDS) and genital ulcer syndrome (GUS)
■ Efficient:
  ▪ lab tests not required
  ▪ spared costs and time
  ▪ fewer patients lost to follow-up
  ▪ accessible to more patients
■ Promotes standardization of:
  ▪ diagnosis and treatment
  ▪ drug management
  ▪ training
  ▪ supervision
  ▪ surveillance
■ The only feasible approach in many settings
	■ Over-diagnosis and over-treatment:
	  ▪ increased drug costs
	  ▪ increased potential for side effects and drug interactions
	  ▪ psychological impact, domestic conflict and stigma
	■ Cannot detect asymptomatic infections

The problem of vaginal discharge

The most significant limitations of the syndromic approach occur in relation to the management of vaginal discharge.

Vaginitis

Abnormal vaginal discharge is highly suggestive of vaginal infection. The most common causes of vaginitis are Trichomonas vaginalis, Candida albicans and BV. Thus, all women presenting with abnormal vaginal discharge should receive treatment for trichomonas and BV, and/or, where indicated, for C. albicans.

Cervicitis

Relatively rarely, vaginal discharge is the result of cervicitis. Cervicitis is usually caused by gonococcal and/or chlamydial infection. In the current WHO flowchart, a complaint of vaginal discharge is the entry point for management of cervical infection. However, studies have consistently shown that the vaginal discharge flowchart is neither sensitive nor specific for cervical infection and that vaginal discharge is thus a poor predictor of cervical infection. This is particularly true in adolescents and in low STI prevalence settings, where endogenous vaginitis is the main cause of vaginal discharge.[26] In some settings, there have been high levels of over-diagnosis and over-treatment of gonorrhea and chlamydia. This has created debate over the value of the syndromic approach as a whole.

The main questions concerning the management of vaginal discharge thus center on two issues:

- *When to treat for vaginitis only?*
- *When to treat for vaginitis plus cervicitis?*

Treating only for vaginitis risks missing cases of cervicitis, potentially resulting in serious complications and spread of infection into the community.

Treating for both vaginitis and cervicitis risks unnecessary antibiotic use (with the implications already mentioned). Treating for both implies a diagnosis of a sexually transmitted infection (as opposed to a non-sexually transmitted RTI) and therefore possible psychological and social consequences.

A compromise is needed. The decision may be guided by infection prevalences, risk factor analyses and drug availability:

a) Prevalences of N. gonorrhea and/or C. trachomatis

The higher the prevalences of N. gonorrhea and C. trachomatis in women presenting with vaginal discharge, the stronger the justification to treat all vaginal discharge as cervical infection. However, there is at present no clarity on exactly what the cut-off prevalence should be. A WHO expert group suggested that a prevalence of 10 percent and above could be regarded as high,[27] but tools need to be developed to determine prevalence cut-off points in terms of costs and benefits of interventions.

b) Risk factor analysis (Annex 6 presents a detailed discussion)

Attempts have been made to improve the performance of the vaginal discharge flowchart by adding risk factor analyses which distinguish between vaginitis and cervicitis. These have included the use of clinical signs, simple laboratory tests, demographic risk factors and behavioral risk factors. Risk factor analyses identify women likely to be infected with gonorrhea and chlamydia according to how well they fit a profile of women at risk for cervical infection. (Refer to Annex 5 for example of risk analysis tool.)

Evaluations of risk factor analyses in different contexts have shown mixed results. Risk factor analysis has been found to have some benefit in settings with high prevalences of N. gonorrhea and C. trachmatis, using locally adapted risk analysis tools, as risk factors may vary in different contexts. A WHO expert group, however, concluded that risk analysis should not be used in areas of low gonococcal and chlamydia prevalences because it does not significantly improve the management of vaginal discharge.

c) Availability of drugs

Cost and supply issues may be the pragmatic deciding factor for the management of vaginal discharge in many resource-poor settings. Here, the only feasible option may be to treat for cervicitis only after failure to achieve cure with treatment for vaginitis.

There are at present no clear solutions to the problem of managing vaginal discharge in settings where etiological diagnosis is not feasible. The limitations of the vaginal discharge algorithm are acknowledged. However, a realistic alternative has not yet been identified.

5.4 Syndromic management of STIs in conflict-affected contexts

"[Syndromic] guidelines are not implemented consistently in emergency situations. The reasons for inconsistent implementation are similar to those that have hindered other responses to HIV: lack of resources, lack of high quality data showing the magnitude of the problem and lack of accepted methods of rapid assessment… Inconsistent implementation may also be relayed to health care providers' lack of confidence in the syndromic approach…" [28]

Although the syndromic approach is inadequate for the management of vaginal discharge, the flowcharts perform well for urethral discharge and reasonably well for genital ulcers. Laboratory testing for the management of individual patients is currently not a feasible option in most conflict-affected settings. Therefore, in these settings, although there is the hope of rapid tests in the future, there is no realistic alternative to the syndromic approach at present.

Accepting the limitations of syndromic management, the following approach could be taken in conflict-affected settings:

Approach to implementation of the syndromic approach to STI management in conflict-affected settings

Guidelines

- If available, the national syndromic guidelines of the host country should be used, unless there is reason to suggest otherwise.
- In the absence of national guidelines, WHO guidelines or guidelines from countries in the region should be used, if the populations are similar.

Drugs

- Drugs should be on the national essential drugs list of the host country.
- If a national essential drugs list does not exist or is outdated, drugs should be on the WHO essential drugs list.
- Within the drug options suggested in the syndromic guidelines, the most effective drugs within budget limitations should be used.
- Single dose directly observed treatment should be used wherever possible.
- There should be clear guidelines on first line drugs and alternatives in case of allergies, pregnancy or other contraindications.

Vaginal discharge

Where a policy decision on the management of vaginal discharge needs to be taken, the following approach could be used:

- No available data on the prevalence of gonorrhea and chlamydia infection in women presenting with vaginal discharge:
  - Treat all abnormal vaginal discharge for vaginitis plus cervicitis until further data are available. (This is recommended because of the risks for STI transmission associated with conflict-affected settings and the role of STIs in HIV transmission.)

- Prevalence of gonorrhea and/or chlamydia 10 percent and above:
  - No available context-specific risk analysis tool: treat all vaginal discharge for vaginitis plus cervicitis.
  - Available validated risk analysis tool: use tool to distinguish between cervicitis and vaginitis.
- Prevalence of gonorrhea and/or chlamydia below 10 percent:
  - Treat for vaginitis at first visit.
  - If no response, treat for cervicitis at follow-up visit.
- If country-specific prevalence data are not available, regional data should be used, if the populations are similar.
- Risk analysis tools are not considered useful in low prevalence settings.
- In the absence of a validated risk analysis tool for vaginal discharge, the general risk factors suggested in the WHO guidelines could be used. (Refer to Annex 5.)

As long as there is no feasible alternative, it is not useful to focus on the well-documented limitations of the syndromic approach. Efforts should rather be concentrated on how to achieve optimal performance within the current limitations. In any setting, the syndromic approach requires adaptation to reflect local causative organisms and sensitivities. In some settings, locally adapted risk analysis tools may also be useful.

Attention should focus strongly on aspects of STI service delivery which may realistically be improved in conflict-affected settings. Sections 6 to 9 present such an approach.

KEY POINTS

- Diagnosis based on laboratory testing is the preferred method of STI case management, but is not feasible in many settings.
- Clinical etiological diagnosis is unreliable and should NOT be used.
- Syndromic management is a simplified method of STI case management based on seven main syndromes and does not rely on laboratory testing.
- Syndromic case management consists of:
  - identification of a group of symptoms and signs, which constitute a defined syndrome
  - prescription of a combination of drugs covering the main pathogens responsible for the syndrome in a particular geographical area or population
  - use of syndromic case management flowcharts (algorithms) to guide diagnosis and treatment
- Advantages of the syndromic approach include:
  - effectiveness (particularly for UDS and GUS)
  - efficiency (patient does not have to wait for lab results)
  - facilitation of standardized STI management practice
- Limitations include:
  - over-diagnosis and over-treatment
  - inability to detect asymptomatic infections
  - problem with management of vaginal discharge
- The vaginal discharge problem centers the decision on whether to treat for vaginitis only, or for cervicitis as well as vaginitis.
- Accepting the limitations of the syndromic approach, attention should focus strongly on aspects of STI service delivery that may feasibly be improved in conflict-affected settings.

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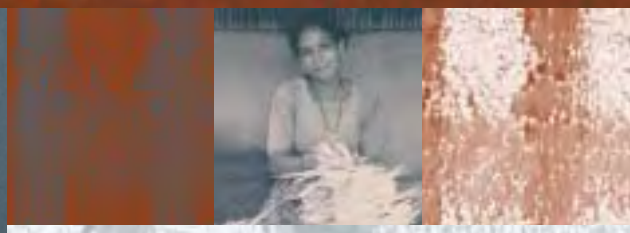
Section 6

A clinic-based approach to STI care in conflict-affected settings

Introduction to Sections 7 to 9



These guidelines focus on clinic-based STI care, but clinic-based services do not stand alone. STI services should be integrated within the full range of primary health care services and closely linked with community-based STI initiatives.

STI programs must be viewed within the broad framework of multisectoral interventions needed to address STIs/HIV/AIDS in conflict-affected settings. A comprehensive framework is provided in the Interagency Standing Committee (IASC) guidelines for HIV/AIDS interventions in emergency settings.[1] The guidelines present a matrix of interventions for emergency preparedness as well as minimum and comprehensive responses. Sectoral responses include: coordination; assessment and monitoring; protection; water and sanitation; food security and nutrition; shelter and site planning; health; education; behavior change communication; information, education and communication; and HIV/AIDS in the workplace.

It is important that the establishment of STI services in conflict-affected settings be viewed as a continuum. Interventions must be adapted to the context and the phase of the emergency. During unstable phases, syndromic management of STIs represents a minimum response, in keeping with the Sphere[i] minimum standard for control of HIV/AIDS in disasters and the Minimum Initial Services Package (MISP).[j] As the situation stabilizes, services should be expanded toward achieving a comprehensive STI care package, appropriate to the context.

The clinic-based approach to STIs in conflict-affected settings covers three broad areas: obtaining data, delivering services and increasing service utilization. Recommendations for both minimum and comprehensive responses are presented.

The recommendations include health program components commonly implemented by national health care systems and by NGOs. However, the background factors necessary for delivering health services of acceptable quality are not always recognized. The resources and sustained intensity of effort required should not be underestimated.

"The challenge is not just to develop new interventions but to identify barriers to the effective implementation of existing tools, and to develop ways to overcome these barriers…"[2]

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i The Sphere project presents a set of universal minimum standards in core areas of humanitarian assistance, developed by a wide representation of individuals and agencies. (Sphere Project, Sphere Humanitarian Charter and Minimum Standards in Disaster Response, Chapter 5: Minimum Standards in Health Services, Revised Handbook 2004. www.sphereproject.org)

j The Minimum Initial Service Package (MISP) is a series of actions which, together with kits of equipment and supplies, are needed to respond to the reproductive health needs of populations in the early phase of a disaster. The objectives of the MISP are to: identify an organization(s) or individual(s) to facilitate its coordination and implementation; prevent and manage the consequences of sexual violence; reduce HIV transmission; prevent excess neonatal and maternal mortality and morbidity; and plan for the provision of comprehensive RH services. (Sphere Project, Sphere Humanitarian Charter and Minimum Standards in Disaster Response, Chapter 5: Minimum Standards in Health Services, Revised Handbook 2004. www.sphereproject.org)

Section 7

Obtaining data

"The complex interactions between the evolution of (STI) epidemics and our comprehension of such evolution are difficult to grasp. Our understanding is shaped to a great extent by public health pressures to control the epidemic, and the political pressures that originate in cultural sensitivities, power dynamics and economics of resource allocation. All of these pressures are highly interactive and dynamic. Identification and implementation of effective prevention programs depend on a scientifically sound, objective understanding of how (STI) epidemics evolve..." [1]

7.1 What kinds of data are needed?

Biological, behavioral and contextual data are needed. These include:[2]

- prevalence and incidence of STIs
- antimicrobial sensitivities of the causative organisms
- populations most at risk for contracting and/or passing on STIs
- geographical distribution of these populations
- contextual factors that influence risk
- behaviors that influence risk
- knowledge, attitudes and practices relevant to STIs
- STI health care-seeking behavior
- services available for STI prevention and care

7.2. Why are data needed?

Reliable data are necessary for the planning, implementation, monitoring and evaluation of STI control interventions.

Biological data

- Prevalence data highlight the magnitude of a public health problem to policy makers and donors, and can thus be instrumental in mobilizing political commitment and resources. Burden of disease (the combined impact of mortality and morbidity) is one of the variables according to which policy makers should determine health sector priorities and allocate resources.

- The publication of credible information about the levels of infection in a community can raise awareness among the general public and prompt political, religious and community leaders to take action. For example, in Thailand, the publication of data revealing high HIV prevalence among sex workers and the fact that 25 percent of the male population visited sex workers, led to a successful national prevention campaign.[3]

- The prevalence and incidence of STIs may vary widely among regions, among countries in the same region, within countries, between urban and rural populations, and even between similar population groups. Trichomonas prevalence studies among pregnant women in Africa have shown rates varying from 9.9 percent in the Central African Republic to 41 percent in South Africa.[4] Prevalence data therefore identify geographical areas and sub-populations where interventions are most urgently needed.

- Prevalence data are needed for effective implementation of the syndromic approach to STI case management. This approach is based upon knowledge of the prevalent causative organisms and their antimicrobial sensitivities. Local data are thus necessary to adapt the flowcharts to local conditions.

- There are also significant geographic variations in antimicrobial resistance patterns. In particular, gonococcal strains and their antibiotic susceptibilities can change very rapidly.[5] Local sensitivities are thus needed to guide drug selection. This impacts national essential drugs lists and drug policies. As prevalence and sensitivities change over time,[6] syndromic flowcharts require periodic reassessment.

- The availability of accurate scientific data upon which to base a treatment approach can increase its credibility among both health care practitioners and the public. Lack of local data to use in persuading STI program managers and service providers to follow recommended procedures is a major constraint

to program implementation in many countries.[7] AIDSCAP (AIDS Control and Prevention Project) found that once managers and providers understood the extent of the STI problem in their country and the ineffectiveness of current treatment practices, they were more likely to appreciate the benefits of a simple, standardized, evidence-based approach. In Haiti, studies showing prevalence of gonorrhea and chlamydia and documenting current treatment practices, helped to convince clinicians that current practices were often inappropriate.[8]

- The incidence and prevalence of STIs may be used as measures of risky sexual behavior and thus risk of exposure to HIV. STI surveillance may therefore serve as an early warning system for HIV epidemics. In the Russian Federation, a rise in syphilis infections, from fewer than 10 cases per 100,000 population in 1988 to over 260 cases in 1998, led to concern about the potential for the spread of HIV.[9] WHO and UNAIDS have recommended strengthening STI surveillance as an essential component of second-generation surveillance[k] for HIV.[10]

Behavioral and contextual data

- In order to design interventions that are appropriate to a particular context, an in-depth understanding is required of the factors increasing vulnerability to STIs in that context.
- Behavioral information is needed for high risk groups as well as the general population. For example, awareness of local knowledge levels and myths around STIs, as well as cultural and religious sensitivities, is necessary for appropriate STI communication activities in both clinic and community settings.
- An understanding of health care-seeking behavior is needed for the design of accessible and acceptable services.
- Serial behavioral surveys can document behavioral trends and assist in measuring the effectiveness of STI/HIV prevention programs.
- Biological and behavioral data complement each other. Biological surveillance monitors trends in infections while behavioral surveillance monitors trends in the behaviors that lead to the infections. Biological data highlight where behavioral interventions should be targeted. Behavioral data can help to explain prevalence trends. Concerns about the validity of reported sexual behavior data point to a need for biological markers in the evaluation of behavior change programs.[11]

"…The lack of accurate and timely information on the burden of STIs hampers efforts to prevent and control them. Without data for advocacy, obtaining political commitment and getting resources allocated to improve diagnostics, treatment and preventive services are extremely difficult. Planning appropriate service delivery and monitoring the impact of interventions are also difficult in the absence of good epidemiological data. The end result is a lack of attention to and interest in the problem of STIs…"[12]

7.3 How can data be obtained?

A detailed explanation of STI surveillance is beyond the scope of this document. This section provides a brief overview of surveillance methods, some of which will not be feasible in most conflict-affected settings or are beyond the scope of most NGOs. They are mentioned to provide a background to STI data issues in conflict-affected populations.

[k] Second-generation surveillance involves making the best use of all sources of information and strengthening health information systems to concentrate resources where they will yield information that is most useful in controlling HIV/AIDS. This includes adapting the information system to the epidemic in a country, concentrating data collection in populations most at risk for new HIV infections, and comparing HIV prevalence with the behaviors that spread HIV. (WHO/UNAIDS. Second generation surveillance for HIV: The next decade. 2000)

STI surveillance includes three components:

STI surveillance components

1. Contextual data	Situation analysis
2. Biological data	Case reporting Prevalence monitoring • Population-based surveys • Surveys in defined sub-populations • Sentinel population Syndromic etiology monitoring Antimicrobial resistance studies
3. Behavioral data	Qualitative studies Quantitative studies

Contextual data

Contextual data describe the circumstances in which people live. This includes information on geographical, socio-demographic and economic settings, the general health situation and the available health services. Contextual data should also include background information on the conflict and, where relevant, displacement. This information should form the baseline for all interventions and is obtained through a situation analysis. During the emergency phase, rapid assessments are conducted, followed by detailed analyses during the post-emergency phases.

Biological data

Basic biological surveillance includes case reporting and monitoring of prevalence, syndromic etiologies and antimicrobial resistance.[13]

Case reporting

Case reporting involves the routine systematic recording and reporting of numbers of STI patients ("cases") seen at health care facilities and of the specific diseases or syndromes these patients have. This reporting is usually done at all health care facilities and is part of the routine health information system. Where the health information system is not well developed, case reporting may be done at a limited number of representative health care facilities, known as sentinel sites.

Case reporting does not reflect prevalence (see explanation under prevalence monitoring). However, in a stable system where reporting practices are consistent over time, case reporting will probably reflect trends in incidence and provide a sense of minimum disease burden.

Where laboratory facilities are available, case reporting is by causative organism. Where syndromic management is used, only UDS and GUS are potentially useful for monitoring trends in STI incidence, as these usually represent recently acquired infections. A high proportion of cases of vaginal discharge and of lower abdominal pain in women are not caused by STIs and are thus not useful for incidence monitoring.

Prevalence monitoring

STI prevalence monitoring can be done using samples of blood, urine, genital swabs, tampon or saliva. Prevalence data may be obtained through:

a) Population-based surveys: These are usually population-based household surveys, confined to a certain geographic area and targeting the reproductive age group (15-49 years). Population-based surveys should be complemented by assessments in high-risk sub-populations.

b) Surveys in defined sub-populations: Population-based surveys do not reflect prevalences in sub-populations at high risk, such as commercial sex workers and their clients, the military, long-distance truck drivers or men who have sex with men. Data on these core and bridging populations are necessary for targeted STI interventions. However, these populations may be difficult to access, especially in a climate of stigmatization and distrust. If meeting places of commercial sex workers and their clients can be identified, a sequential sample of these groups can be attempted; however, sound epidemiological training and experience in conducting such surveys is recommended.

c) Sentinel populations: STI prevalence in women attending antenatal clinics may be used as a proxy for prevalence in the sexually active general population, for example, syphilis and HIV. Surveys in sentinel populations may be done periodically (e.g., annually). Data collection may take several weeks or months to obtain a sufficient sample size that allows an STI prevalence estimate representative for that year. Health care services specifically targeting sub-populations may serve as sentinel sites for these populations, e.g., clinics set up in locations of high-risk sexual activity such as red light districts or at truck stops.

Syndromic etiology monitoring

Special studies are needed to determine the most common causative organisms of the specific STI syndromes. Because of changing etiological patterns, in each country where the syndromic approach is used, WHO recommends that syndrome etiologies are assessed at least once every three years. Sample size will depend on the specific etiology and the expected prevalence of the organisms. For most purposes, a minimum sample size of 50 to 100 specimens from consecutive patients who present with the specified syndrome will provide adequate information for analysis. Specialist equipment and expertise is required for these studies.

Antimicrobial resistance studies

Special studies are needed to determine the effectiveness of selected drugs for a specific STI organism, and to monitor the prevalence of antimicrobial resistance among specific organisms. WHO recommends that antimicrobial resistance assessments be performed at least annually. A sample of about 100 isolates per sentinel site over a defined time interval is usually sufficient to provide a reflection of local resistance patterns. Resistance monitoring is most important for Neisseria gonorrhea. Where chancroid is prevalent, monitoring of Haemophilus ducreyi is also important, but susceptibility testing for H. ducreyi is difficult. Specialized expertise and laboratory facilities are needed for antimicrobial resistance monitoring.

Behavioral data

As with biological surveys, behavioral surveys may be done in the general population or in specific sub- populations of interest. Behavioral studies include quantitative and qualitative components, such as questionnaire surveys, focus groups and key informant interviews. Expertise is required for appropriate study design and implementation.

There is some debate about whether biological and behavioral surveys can be done simultaneously on the same sample of participants. Some experience has shown that individuals are less likely to participate in behavioral surveys if a biological component is involved. It is thus recommended that biological and behavioral data be drawn from different groups broadly representative of the same source population.[14]

It is important that free-of-charge STI treatment be offered to survey participants, as well as voluntary counseling and testing if HIV results are not reported back to participants. Before and during the survey, options should also be explored for building local capacity to improve STI and HIV-related services.

7.4 Challenges to obtaining data in conflict-affected situations

In spite of the clear need for data on which to base interventions, there is a widespread lack of STI-related data, particularly in resource-poor and conflict-affected settings.[15]

"…Very few studies…have documented the magnitude of the HIV epidemic in complex emergencies, analyzed the epidemiological risk factors of importance in the specific context of these emergencies or made recommendations about appropriate surveillance systems or prevention programs based on sound, ethical scientific data…"[16]

Routine data challenges

Routine data include routine STI case reporting and antenatal clinic sentinel surveillance data. National reporting systems are usually based on routine data.

- Conflict-affected populations are frequently located in resource-poor settings where routine health information systems are inadequate.
- Existing systems may disintegrate as a result of the conflict. For example, in the aftermath of the civil war in Sierra Leone, almost two-thirds of rural health units were not functioning.[17]
- Even where the health system is functional, displaced populations may not be included in routine surveillance systems.
- In the beginning of an emergency, NGO health information efforts focus primarily on diseases causing increased mortality and those of epidemic potential,[18] rather than on STIs which are not an immediately visible problem.
- Even where there are good reporting systems, many cases are not reported:
  - Case reporting systems are passive, and rely on patients who access the health system.
  - As a result of the social stigma around STIs, patients may seek treatment from alternate care providers, self-medicate or simply not seek treatment at all.
  - A large percentage of individuals infected with STIs are asymptomatic or have mild or non-specific symptoms and thus do not seek treatment.
  - Case reporting is influenced by the accuracy of diagnosis and the quality of reporting.
  - Sentinel surveillance of antenatal clinic clients also depends on passive systems and may not provide data representative of the general population.

In countries affected by conflict, routine STI data are thus frequently neither current nor sufficient.

Survey challenges

- Population-based surveys are considered to be the gold standard for assessing prevalence, but are complicated and costly, requiring sound epidemiological experience, training, personnel, administration and time.
- Population-based studies do not reflect information about high-risk sub-populations. Studies involving high-risk groups such as commercial sex workers are often difficult as these populations may be marginalized and difficult to access.

- In conflict-affected settings, there may be pressures to use limited resources for immediate service provision rather than data collection.
- Population-based surveys for STI data will not be practical until the post-conflict phase or at least until security improves and significant population movements have ceased.
- Conflict-affected contexts pose further challenges such as logistical constraints, inaccuracies in population sizes, time pressures, funding constraints and lack of technical expertise. An analysis of 19 behavioral surveys undertaken in refugee settings in East Africa revealed significant weaknesses in the design, implementation and reporting of the surveys.[19]
- The laboratory testing component poses a significant challenge to obtaining biological data:
  - Specialized technical expertise and equipment are required.
  - Intensive logistical support may be needed.
  - Costs may be high.
  - When tests are used which require transport to a reference laboratory, survey participants who test positive for STIs cannot be treated immediately which may have ethical implications.
  - The availability of newer tests (e.g., Polymerase Chain Reaction (PCR) and Ligase Chain Reaction (LCR)) may improve the feasibility of biological surveys in field conditions.[20] However, a high level of technical expertise and equipment remain essential.
  - "Quality control is an important issue, and quality of specimen collection and local testing can never be taken for granted…"[21]
- Biological surveys have not often been undertaken in conflict-affected situations. However, some rapid assessments using convenience and cluster sampling have been carried out in refugee settings.[22] Combined risk factor and HIV and syphilis sero-prevalence surveys were recently conducted in war-affected contexts in Sierra Leone[23] and South Sudan.[24] In South Sudan, rapid HIV and syphilis tests were used and fully analyzed in the field setting, enabling participants with positive syphilis tests to receive immediate treatment. Preliminary results indicate that these tests performed well in limited conditions. The researchers recommended, however, that additional STI tests only be introduced in conflict settings if the validity and reliability of the tests have been established in stable situations. Furthermore, they emphasized the necessity of intensive training in laboratory methods and appropriate supervision, while also noting that the surveys had provided opportunities for local capacity building.

The particular risks for STI/HIV transmission associated with conflict-affected populations require urgent interventions. Effective implementation is dependent upon a thorough analysis of the situation. Furthermore, when considerable resources are deployed to address STIs/HIV, reliable data are essential for responsible decision-making. The feasibility of obtaining data in conflict-affected settings is variable and the approach must be adapted to the situation. However, *an investment in data collection should be considered essential.*

KEY POINTS

- There is a widespread lack of STI data in conflict-affected settings.
- Effective STI interventions are based upon sound contextual, biological and behavioral data.
- Contextual data describe the circumstances in which people live.
- Basic biological surveillance includes case reporting and monitoring of prevalence, syndromic etiologies and antimicrobial resistance.
- Prevalence data highlight the magnitude of a public health problem and guide interventions to priority areas and populations.
- Prevalence and sensitivity data guide syndromic management algorithms.
- Behavioral surveillance monitors trends in the behaviors that lead to infections.
- Behavioral studies include quantitative and qualitative components, such as questionnaire surveys, focus groups and key informant interviews.
- Appropriate equipment, expertise and experience are essential for conducting biological and behavioral surveys.

7.5 What is feasible for data collection in conflict-affected settings?

► MINIMUM response:

- Situation analysis (where relevant, obtain data on host as well as displaced population):
  - Review existing biological, behavioral and contextual data.
  - Assess local health policies, treatment guidelines and essential drugs lists.
  - Identify existing surveillance protocols.
  - If no local data are available, obtain regional data.
- Conduct key informant interviews and focus groups for initial knowledge, attitude, practice and behavior (KAPB) information to ensure that emergency services are appropriate.
- Where a surveillance system is/was in place, continue with the same system if feasible.
- Institute routine syndromic case reporting for UDS in men and GUS in men and women.
- Document all screening tests on blood for transfusion (RPR, hepatitis B and HIV).

► COMPREHENSIVE response:

Minimum response plus:

- Document RPR testing on all patients presenting with an STI.
- Institute sentinel surveillance in antenatal clinics for syphilis, and anonymous unlinked HIV testing.
- Include adequate surveillance components in project proposals.

►COMPREHENSIVE response: (cont'd)

- Behavioral studies:
  - Conduct behavioral studies to shape program design and to establish a baseline for monitoring and evaluation.
  - Behavioral studies may be combined with other population-based surveys to save costs and time.
  - Considerable investment of resources is required to ensure appropriate study design and implementation.
- Biological studies:
  - It is rarely feasible for an NGO to independently conduct biological studies such as sero-prevalence surveys, syndromic etiology monitoring or antimicrobial resistance studies.
  - Collaborative efforts between NGOs and national organizations and/or institutions such as the Centers for Disease Control and Prevention (CDC) are an option.
  - An important role for NGOs here is advocacy.
- Syndromic algorithms:
  - Evaluate local syndromic flowcharts against available etiology and sensitivity data (local and/or regional).
  - If there are concerns about the effectiveness of the local syndromic guidelines, consult with host country authorities and/or international organizations, e.g., WHO.
  - If necessary, advocate for review of local syndromic guidelines.
- National surveillance systems:
  - The strengthening of STI surveillance systems is viewed as a central element of the global effort to strengthen STI/HIV programs.[25]
  - NGOs can contribute by supporting national surveillance systems and ensuring that NGO-generated data is integrated within national STI/HIV/AIDS control programs.
  - NGOs could consider supporting reference clinics or laboratories. While many NGO programs are directed at the primary health care level, the need for support at higher levels within the health system should not be overlooked.
- Advocacy for investment in data:
  - NGOs have a role in advocating with national authorities, international organizations and donors on the need for investment in STI surveillance.
  - In situations where there is a general lack of data, the funding and execution of an assessment yielding high quality data for use by a range of implementers, should in itself be seen as a significant contribution to the control of STIs and HIV and to improving understanding of STIs/HIV in conflict-affected settings.

It is important that organizations recognize the value of good quality data in designing, implementing and evaluating interventions and that appropriate resources should be directed toward surveillance. This may require additional funding or a shift in funding priorities. Reliable data collection requires resources. A resource of particular importance is expertise. NGO capacity in this respect should be realistically evaluated and guidance sought where necessary. Investment in expertise also builds capacity, both locally and within the NGO. *The benefits of investment in high quality data collection should justify the costs, particularly when seen in relation to the ultimate costs of STI and HIV epidemics.*

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3 WHO/UNAIDS. Second-generation surveillance for HIV: The next decade. 2000.

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7 Centers for Disease Control and Prevention. Global AIDS Program Technical Strategies. www.cdc.gov. Accessed 01/03.

8 Family Health International. Making Prevention Work: Global Lessons Learned from the AIDS Control and Prevention (AIDSCAP) Project 1991-1997. www.fhi.org. Accessed 03/03.

9 WHO/UNAIDS. Second-generation surveillance for HIV: The next decade. 2000.

10 Report of a WHO consultation, Treviso, Italy, 27 February-1 March 2002 Estimation of the incidence and prevalence of sexually transmitted infections. 2002.

11 Shaw M, Van der Sande M, West B, et al. Prevalence of Herpes simplex Type 2 and Syphilis serology among young adults in a rural Gambian community. Sexually Transmitted Infections. 2001; 77(5):358. Abstract.

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14 WHO/UNAIDS. Second-generation surveillance for HIV: The next decade. 2000.

15 Spiegel PB. HIV/AIDS surveillance in Situations of Forced Migration. June 9, 2003. Unpublished draft.

16 Khaw AJ, Salama P, Burkholder B, Dondero, TJ. HIV Risk and Prevention in Emergency-affected Populations: A Review. Disasters. 2000; 24(3): 181-197.

17 UNAIDS. AIDS Epidemic Update. 2002.

18 Spiegel P. HIV/AIDS surveillance in Situations of Forced Migration. June 9, 2003. Unpublished draft.

19 ibid.

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21 UNAIDS/WHO. Guidelines for Sexually Transmitted Infections Surveillance. 1999.

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23 Kaiser R, Spiegel P, Salama P, et al. HIV/AIDS seroprevalence and behavioral risk factor survey in Sierra Leone, April 2002. Report, CDC Atlanta, April 2003.

24 Kaiser R, Kedamo T, Lane J, et al. HIV/STI sero-prevalence and risk factor survey in South Sudan: Yei, Western Equatoria, November 2002, Rumbek, Bar-el-Gazah, April 2003 (draft). Atlanta: Centers for Disease Control and Prevention, 2003.

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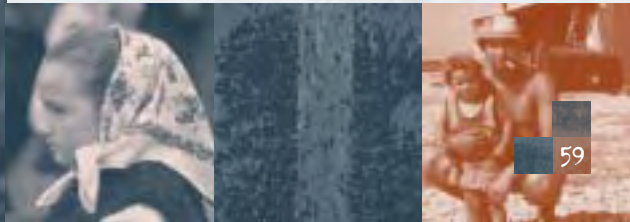
Section 8

Delivering services

A patient's first encounter with the health care system is likely to affect compliance with treatment, future health care-seeking behavior, partner treatment and cost-effectiveness of treatment. Therefore, STI management at the point of first contact should be as comprehensive, acceptable, effective and efficient as possible.



8.1 Comprehensive service provision

Comprehensive STI care includes:
(Checklist - Annex 7.)

Service delivery

- **Accessible services**
  - The location of the service is important in terms of physical accessibility as well as stigmatization. Service provision should be structured in such a way that clients can access STI care discreetly. For example, a particular room within a health facility should not be labeled or specifically associated with STI care; STI services for adolescents may need to be located within a youth center.
  - The physical structure of the health care facility should allow privacy during history-taking and examination.
  - Clinics should employ staff able to communicate in the same language as the population served. This is particularly important in making services accessible to displaced persons. Cultural issues should be considered, such as the need for a female clinician or chaperone.
  - Financial aspects of accessibility should be addressed where relevant.

- **Assured confidentiality and a caring, non-judgmental attitude from staff**
  - Confidentiality should be specifically addressed among staff as cultural perceptions of confidentiality may vary.
  - Organizational policies and training should emphasize ethical and compassionate treatment of all clients.

- **Appropriate diagnostic equipment and supplies**
  - Minimum: examination table, light, gloves.
  - Additional: specula of different sizes, swab-holding forceps, basin, swabs, slides, saline.

- **Provision of effective drugs**
  - Refer to Section 8.2 and Annex 9.

Clinical management

- **Appropriate history-taking and physical examination (Refer to Annex 8.)**
  - Clinical examination is essential but is neglected in many settings. Reasons may include lack of privacy, time pressure, lack of gloves, lack of light or cultural constraints.
  - Practical issues such as lack of privacy or light may be solved in simple inexpensive ways.
  - Lack of gloves does not preclude visual inspection.
  - Cultural obstacles to genital examination may be addressed through good communication, having the choice of seeing a male or female health worker and the presence of a chaperone.
  - While time pressure may be understandable, it must be emphasized that appropriate quality of care requires physical examination.
  - History-taking and examination must be addressed through training and supervision.
  - Checklists may be helpful training and supervision tools.

- **Diagnosis and treatment using the syndromic approach**
  - Locally adapted flowcharts should be used where available.
  - If local flowcharts are unavailable, WHO guidelines may be used.
  - Copies of syndromic guidelines should be available to all clinical staff and flowchart posters placed in consulting rooms.

- **Recommendation of a follow-up visit for all STI clients**

- **Routine RPR testing for STI clients**
  - All STI clients should be offered an RPR test.
  - For patients with genital ulcers, a negative RPR should not preclude syphilis treatment as the RPR test may be negative in early syphilis.

- **Routine RPR screening for all antenatal clinic clients**
  - before 16 weeks and again during the third trimester
  - same-day treatment

- **Routine eye prophylaxis for all neonates**
  - application of 1% silver nitrate solution or 1% tetracycline ointment to the eyes of all infants at delivery

Information, education and communication (IEC)

- **Provision of individual education and counseling on:**
  - the infection, its potential consequences and how it is transmitted
  - the importance of completing the prescribed treatment
  - the importance of partner notification and treatment
  - personal risk reduction strategies
  - HIV/AIDS

Some STI patients may require referral to specialized counseling services to help them cope with the physical and social consequences of the infection. This may be particularly important for adolescents.

- **Provision of condoms and education on use**
  - Condoms should be offered to all STI clients, as well as advice on how to access condoms in the future.
  - Condom use must be explained.
  - Condoms should also be made available discreetly to all health facility clients, as well as through outreach staff such as community health workers.

- **Assistance with partner notification**
  - Options for partner notification should be discussed with the client. Sensitivity is required as the social consequences may be significant for the client. The client should never be coerced into notifying a partner.
  - Options for partner notification include:
    - the patient informs the partner of the STI verbally
    - the patient informs the partner by giving them a card from the health facility
    - a health worker visits the partner
    - a letter is sent by the health facility advising the partner to seek care
    - the patient is given additional medication to take home to the partner.

Clinic-based IEC strategies

- Health workers should have appropriate materials to reinforce counseling, such as posters and leaflets.
- In addition to individual education and counseling, information on STIs should also be available to all health facility clients through a variety of IEC methods such as posters, leaflets, videos or dramas in waiting areas.
- Clinic-based messages should be consistent with community-based behavior change communication interventions.

There are conflicting opinions about how STI services for the population are best delivered.[1] The issue of integration of STI services has been much debated. Integration of services is usually viewed from two perspectives: integration of STI services into reproductive health services, or integration of vertical STI programs into primary health care services. Integration may simply mean that two services are accessible to the patient during the same visit and that providers encourage this access. In conflict-affected settings, the most appropriate ways of delivering services should be assessed within individual contexts. Integration should seek to increase accessibility and quality of care for all patients.

Syphilis screening

Syphilis prevalences of up to 17 percent have been reported in sub-Saharan Africa.[2]

The availability of a highly sensitive diagnostic test as well as a highly effective and affordable treatment make it possible to successfully control syphilis through public health measures. Antenatal screening and treatment of pregnant women for syphilis is cost-effective, even in areas of prevalence as low as 0.1 percent.[3] Syphilis screening by means of a rapid test such as the RPR test is inexpensive and simple enough to be performed by staff in peripheral health facilities.

Yet, such testing is frequently not available. For example, during 2002 in Sierra Leone, RPR testing was only available at some district-level institutions and even this was a recent development.[4]

An important factor in successful syphilis control is same-day, on-site testing and treatment. In Kenya, a study found that an on-site service providing same-day screening and treatment of syphilis for antenatal clients resulted in higher treatment rates for clients and their partners, compared with referring them to a laboratory or having them return at a later date for results.[5] A study in suburban antenatal clinics in Mozambique concluded that more active training of antenatal care providers to perform on-site RPR tests, give syphilis treatment and notify partners, resulted in improved perinatal outcomes and decreased syphilis sero-positivity among women at delivery.[6]

Intensive health education of women to motivate them to attend antenatal clinics is an important part of syphilis control. A system for quality control of RPR testing is also necessary.

The provision of RPR tests should be offered as a routine component of antenatal care in NGO-supported health facilities and should be instituted as early as possible. Efforts should also be made to support government health systems to provide this service.

KEY POINTS

Comprehensive STI care includes:

Service delivery

- Accessible services
- Confidentiality and a caring staff attitude
- Appropriate diagnostic equipment and supplies
- Provision of effective drugs

Clinical management

- Appropriate history-taking and examination
- Diagnosis and treatment according to the syndromic approach
- Follow-up visit
- RPR test offered to all STI clients
- RPR test offered in first and third trimesters for all ANC clients
- Routine eye prophylaxis for neonates

IEC

- Provision of individual education and counseling
- Provision of condoms and education on use
- Assistance with partner notification
- Clinic-based IEC strategies

STI service provision in conflict-affected settings

► MINIMUM response:

- Use rapid assessment data to guide locally appropriate service provision.
- Encourage syndromic management of STIs using local or WHO flowcharts.
- Make copies of flowcharts available to all clinical staff.
- Provide a checklist to guide comprehensive case management, monitoring and supervision.
- Ensure availability of appropriate drugs.
- Provide condoms for all STI clients.
- Make condoms available at all health facilities and through outreach health workers.
- Ensure condom availability in the community.

► COMPREHENSIVE response:

Minimum response plus:

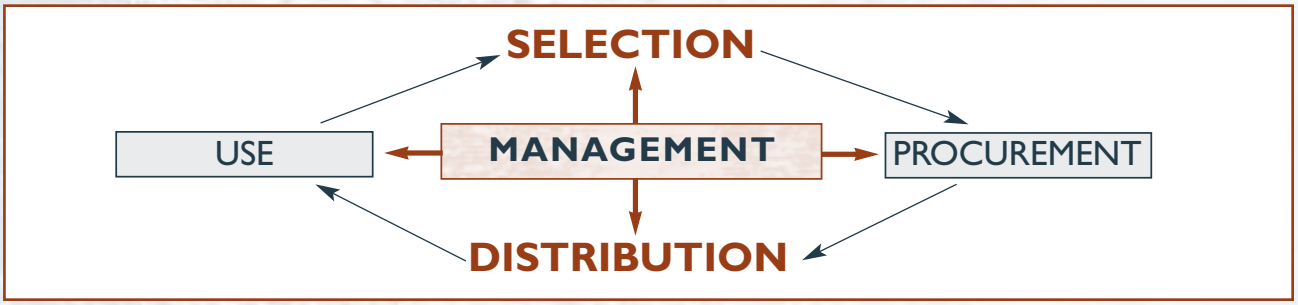
- Expand services to reach a comprehensive level as soon as feasible.
- Tailor service provision according to data obtained through baseline assessments and, where possible, behavioral and biological surveys.
- Refer to checklist in Annex 7.

8.2 Drug supply management

In many settings, lack of effective drugs is one of the main constraints to the control of STIs. This section highlights some important challenges to drug supply management in conflict-affected settings.

Drug supply management may be viewed as a cycle consisting of selection, procurement, distribution and use.[7]

The Drug Management Cycle



Selection

The drugs selected for STI treatment should offer a cure rate of at least 95 percent.[8] However, antimicrobial resistance is widespread and many of the low-cost drugs, which initially provided high cure rates for STIs, are no longer effective.

The following factors contribute to the development of antimicrobial resistance.[9]

- adaptability of the organism
- inappropriate use of antibiotics
- inadequate dosages and/or duration of treatment
- poor quality drugs

Reliable data on antimicrobial resistance, used to inform the selection of effective antibiotics, are frequently not available. Even if resistance data are available, effective drugs may not be on the national essential drugs list. Even if they are, ineffective drugs may continue to be used, as the more effective drugs are not affordable to health systems or patients. In some settings, a two-tier policy is applied that provides less effective drugs at the peripheral level and more effective, but usually more expensive, drugs at the referral level. If first-line treatment fails, patients are expected to present for second-line treatment. However, experience has shown that patients frequently do not return. Furthermore, the widespread availability of poor quality drugs in developing countries means that even if an effective drug is prescribed in name, the product taken by the patient may be ineffective.

The use of ineffective drugs has several consequences:

- Ineffective drugs increase STI treatment costs as patients seek treatment for the same condition repeatedly.
- Patients develop complications, which require costly treatment and may have severe consequences, such as infertility or fetal death.
- Patients remain infectious and the potential for spread of the infection into the population persists.
- People lose confidence in the health system and seek care in the private or informal sector, or they self-medicate.
- Inadequate treatment may increase the prevalence of resistant strains and partially treated infections may lead to the development of carrier states.
- Failure to cure STIs increases the risk of HIV transmission.

NGOs may be confronted with the problem that a drug recommended by the national treatment guidelines is no longer effective against the organism. For example, in 2002 in Sierra Leone the first-line drug recommended for urethral discharge in peripheral health facilities was cotrimoxazole. There were no current data available on sensitivity patterns in Sierra Leone at that time. As a result of high resistance world-wide, a WHO expert consultation in 2001 recommended that cotrimoxazole be removed from the list of recommended drugs for the treatment of gonorrhea.[10]

For NGOs, the management of such a situation may be challenging, and individual contexts will dictate the appropriate course of action. If working within a setting where the NGO is the sole provider, e.g., a refugee camp, it would probably be acceptable to deviate from national guidelines when necessary. If working within the national system, it would not be appropriate to institute changes, except in close collaboration with national authorities. In such a scenario, an important role for the NGO could be to raise awareness and advocate for policy change.

Procurement and distribution

Poor drug management and non-functioning logistics systems result in drugs not being available when patients need them. In situations where NGOs are responsible for drug supply, there is little excuse for inefficient supply management. When working within a national system, the role of an NGO requires careful consideration. It is easy to donate drugs, but there is little value in providing drugs when there are no systems to ensure appropriate distribution and no mechanisms to promote appropriate use. The ethics of supplying drugs exclusively for a particular group of illnesses, such as STIs, should be evaluated. Furthermore, inappropriate drug donations are frequently a problem in conflict-affected settings. The WHO guidelines for drug donations should be followed for all donations. (See Annex 11.)

A commitment to offer support to the drug management system as a whole should be considered. In unstable or chronic conflict settings, ongoing support by an external organization may be required.

Use

Inappropriate use of antibiotics is a widespread problem, particularly in developing countries. This includes inappropriate prescription by providers and inappropriate taking of medications by patients. These issues are discussed further in the sections on training and supervision, private health care providers and increasing awareness of STIs.

There are no simple solutions to drug supply management issues. Sustained commitment is necessary to ensure that effective drugs are consistently available and used appropriately.

KEY POINTS

- Lack of effective antibiotics is one of the main constraints to the control of STIs.
- Antimicrobial resistance is widespread and increasing.
- Ineffective drugs, inadequate dosages and inadequate duration of treatment all contribute to the development of resistance.
- The ultimate costs of using cheaper, less effective antibiotics outweigh the costs of providing more expensive but effective drugs.
- Provision of effective treatment for STIs requires attention to all aspects of drug management, including selection, procurement, distribution and use.

Drug management in conflict-affected settings

►MINIMUM response:

- Ensure adequate provision of drugs according to local syndromic guidelines.
- If no local guidelines are available, provide drugs according to WHO syndromic guidelines.
- Ensure appropriate storage of drugs.
- Ensure appropriate documentation of drug supply and prescription.
- STI drug management should be included in the general drug management system.

►COMPREHENSIVE response:

Minimum response plus:

- Ensure appropriate functioning of the drug management system within the agency, including appropriate selection, procurement, storage, distribution and use.
- Ensure that adequate resources to promote effective drug management are included in project proposals.
- Train and supervise staff in drug management and rational drug use.
- Consider supporting local drug management systems.

8.3 Training and supervision

Training

Accurate data and appropriate drugs have little value when appropriate clinical management practices are lacking. A study in Nairobi, Kenya, assessing the quality of STI care in both public and private facilities, found that only 27 percent of STI patients were managed correctly.[11] In an assessment of the quality of STI management in South Africa, it was found that only 19 percent of patients were offered physical examinations and that other essential components of STI case management, including health education, partner notification and condom promotion, were often omitted.[12] During HIV/STI workshops in Sierra Leone and Kenya during 2002, some health workers were even reluctant to handle condoms during condom demonstration exercises.

In some countries, the syndromic approach may not yet be included in health staff training curricula. Therefore, initial training in syndromic management may be required. It is essential that clinical workers have a clear understanding of how to use the syndromic management approach and are convinced of its value. Staff members also need training on all the components of comprehensive STI care, including education, counseling and condom demonstration. Training is also needed on issues such as stigma, confidentiality and attitudes of health care providers. Sometimes staff may need training to help them overcome their own misconceptions, sensitivities and prejudices about STIs to be able to discuss sexuality and STIs in an easy and constructive manner.[13]

Supervision

Training is an important contribution, but one-off training is not enough. Initial training should be followed up by refresher training and supportive supervision. Studies have shown that inadequate supervision is an important factor contributing to poor STI care.[14]

A review of a 10-year STI treatment and prevention program in Kenya concluded that high quality supervision of health workers was essential, so that continuing skills development formed an integral part of their work.[15]

The successful STI intervention trial in Mwanza, Tanzania found that although health workers had received adequate training, they tended to deviate from the treatment algorithms or to forget about important STI management components such as health education and partner notification. The researchers concluded: "[R]egular supervision and in-service training proved to be of paramount importance for the success of the intervention…"[16]

Training is thus essential, but sustained effective supervision is equally important. (Annex 10 provides a sample checklist for supervision of STI services.) Supervisors also need to be trained in appropriate supervision practices. An effective supervision system may require considerable resource input, e.g., transport. In the Mwanza trial, the component with the highest recurrent cost was the supervision system. However, in situations where intensive supervision is not feasible, simple self-monitoring checklists could be used by health workers and reviewed periodically by supervisors to support monitoring and supervision of STI services.

Provider attitudes

Improved STI management practices may require behavior change among providers.

"In spite of efforts to improve management of STI patients through syndromic management training, many health care providers are reluctant to change their practice behaviors. Anecdotal information suggests that their reasons include prestige, profit motives, pressure from pharmaceutical companies, and the belief that certain STI syndromes are not serious and do not warrant antibiotics. Research is needed to further understand this resistance to the syndromic approach among different groups of health care providers and to propose solutions…"[17]

Acceptance of new STI care approaches may be improved if a collaborative process is used, seeking input from providers themselves. NGOs working in conflict-affected settings may be in a unique position to build capacity among displaced and host community health workers. Efforts should be made to include national health system workers and private providers in training initiatives.

KEY POINTS

- STI case management practices are often poor.
- Training of health workers is needed on all components of comprehensive STI care, including syndromic management, counseling, education and condom demonstration.
- Training is also needed on provider attitudes, confidentiality and stigma.
- Initial training should be complemented by regular in-service training and supervision.
- Inadequate supervision is an important factor contributing to poor STI care.
- A collaborative process may promote acceptance among health workers of new STI care approaches.

Training and supervision in conflict-affected settings

►MINIMUM response:

- Provide copies of syndromic guidelines to all providers.
- Provide comprehensive care checklists for self-monitoring and supervision.
- Where feasible, provide on-the-job training on management of STIs.
- Provide supportive supervision, taking into account constraints faced by staff in conflict-affected settings.

►COMPREHENSIVE response:

Minimum response plus:

- Conduct rapid assessments of training needs among NGO staff and national counterparts.
- Conduct training workshops on comprehensive STI care as soon as feasible.
- If possible, send some staff members for practical training in reference institutions where exposure to STI cases may be high.
- Develop supervision systems in collaboration with staff.
- Follow up training with support, supervision and on-the-job training.
- Conduct follow-up training workshops at intervals as refreshers and to train new staff.

8.4 Private health care providers

Public perceptions

In resource-poor settings, efforts to address STI case management are focused most often on the public sector. In conflict-affected settings, interventions often focus on rehabilitating or strengthening public sector services. However, many people, particularly men, prefer to seek care from alternate providers, such as private clinics, pharmacists, drug vendors and traditional healers.[18]

In many African societies traditional healers are of high repute and often considered the most appropriate initial point of contact for help for symptoms of STIs. Out of 498 new STI clients at a district STI clinic in Malawi, 37 percent had visited a traditional healer before coming to the clinic.[19]

The perception of the general population is often that private sector health care is superior to public sector services. In Benin, patients were willing to pay more and travel further for perceived better care. Reasons for preferring private providers included shortages of supplies and medications, absenteeism, lack of training, poor treatment of patients and black-marketing of drugs by public sector providers.[20] In Ethiopia, judgmental or condescending attitudes were the most commonly cited reasons for not attending public health care facilities.[21]

Quality of care

The quality of private sector STI care may in fact be poor. An estimated 5 million cases of STIs are seen by private general practitioners each year in South Africa. In a study of 120 general practitioners, 28 percent were able to cite effective treatment of UDS, and 14 percent and 4 percent for GUS and PID, respectively. Only 43 percent had seen the Department of Health's latest protocols for managing STIs.[22] In many settings, pharmacists or drug vendors may be the main providers of STI treatment. In the Gambia, only 4.4 percent of simulated clients were correctly treated for UDS at 24 registered urban pharmacies.[23] A study in Nairobi, Kenya, assessed the quality of STI management across a range of providers: public facilities, private clinics, mission clinics, NGO/community-based clinics and private pharmacies. Treatment was found to be poorest in private clinics and pharmacies.[24]

Working with the private sector

Addressing private sector health care is a challenging issue. "[T]he international evidence suggests that improving the quality of privately provided services is a complex task that requires careful thought as to the economic, professional and patient factors influencing the nature of this care …"[25]

Strategies to improve private provider knowledge have been shown to improve quality of care in high income countries, but factors that contribute to discrepancies between provider knowledge and practice need to be considered. Studies have shown that private sector providers may perceive or experience patient pressures to provide inappropriate treatments,[26] for example, pressure to prescribe antibiotics unnecessarily or to provide injections when oral therapy is appropriate.

Attempts to train pharmacists in the syndromic management of STIs have met with varying levels of success. Economic incentives may play a role here. Even when pharmacists or drug vendors are well trained, they may remain unlikely to turn away business if customers can only afford a partial prescription. In Nepal,[27] there was an increase in the provision of correct treatment from 0.8 percent to 45 percent immediately after training. In Cameroon,[28] a pilot project to social-market urethritis treatment packages containing antibiotics, condoms, partner referral cards and written information through private pharmacies encountered opposition from the local medical community. In Ghana, although the training of pharmacists improved the treatment of urethral discharge, a study revealed that less than half the simulated clients received appropriate treatment.[29]

Private sector STI services are likely to be present in most populations, including conflict-affected settings. A community survey in a refugee camp in Ngara, Tanzania, revealed that 52 percent of men reporting STI symptoms had sought care from traditional healers.[30]

As a significant proportion of STI cases will seek care in the private sector, efforts to improve STI control cannot exclude this sector. Assessment should be undertaken to understand the extent and type of private care available. Opportunities for collaboration should actively be sought and information and training opportunities made available to private providers.

KEY POINTS

- Many STI clients seek care outside the public sector.
- While the public may perceive quality of care to be higher in the private sector, this is often not the case.
- Efforts to improve STI care need to include the private sector.

Working with private health care providers in conflict-affected settings

MINIMUM response:

- Include information about private providers in rapid assessment.

COMPREHENSIVE response:

Minimum response plus:

- Provide syndromic guidelines and IEC materials to private providers.
- Invite private providers to training opportunities.
- Invite private providers to participate in planning of strategies to address STIs.

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Section 9

Improving service utilization

9.1 Increasing public awareness of STIs

The need for public awareness

It is not difficult to recognize the symptoms and signs of STI syndromes, and treatment regimens are not complex. However, for a variety of reasons, STIs are not treated appropriately:

- People may avoid treatment, delay seeking treatment or receive incorrect treatment. A study in rural Uganda followed almost 10,000 people over a ten-month period: 30 percent of women and 10 percent of men experienced genital tract symptoms. Over 40 percent of these people reported they had done nothing to treat symptoms.[1] In rural Tanzania, 18 percent of patients with genital ulcers and 19 percent of patients with genital discharge did not seek treatment at all.[2]
- People may fail to recognize signs and symptoms, or be unaware of the implications of the illness. The Tanzania study found that in areas with high prevalences of reproductive tract infections, women often perceived mild symptoms as "normal."
- People may not know where to access care, or may fear lack of confidentiality or judgmental attitudes from health care providers. A large proportion of people may self-treat. In Cameroon, 50 percent of male patients reporting urethritis during the previous 12 months had treated themselves with drugs bought at pharmacies or in the market.[3] Their reasons for self-treatment were long waits at clinics, the need to wait for laboratory results before getting a prescription, the cost of laboratory tests and the cost and effectiveness of drugs prescribed by health providers. In a study in Ghana, about 75 percent of people attending an STI clinic had self-medicated before presenting. The antibiotics had been obtained from a variety of sources and were taken in inappropriate doses, often as mixtures of different drugs.[4]
- Even when appropriate care is accessed, patients may fail to follow prescribed treatment regimens. A study in India found that only about one-third of patients completed the recommended treatment.[5]

Improved quality of care and improved health care-seeking behavior are synergistic. It is important that the improvement of services is accompanied by behavior change communication interventions in the community to encourage appropriate treatment-seeking behavior. In a refugee camp in Ngara, Tanzania, mass IEC campaigns together with improved STI treatment services were followed by a 10-fold increase in the number of STI patients presenting at refugee camp clinics.[6]

What does the public need to know about STIs?

- STIs are a common health problem.
- STIs can have severe consequences, such as serious illness, death, infertility and harm to unborn children and newborns.
- STIs increase the risk of acquiring HIV.
- How STIs are transmitted and how they are not transmitted.
- Common symptoms and signs of STIs.
- Where to get help.

- Importance of taking the correct drugs, in the correct dosages for the correct period of time.
- Importance of condoms in preventing STI transmission.
- Importance of partner management.

The way in which this information is communicated is crucial and will depend on baseline assessments to determine appropriate approaches for the broader community as well as for specific sub-populations, such as adolescents. A variety of settings may be used for STI communication initiatives, including health facilities. Community-based approaches should complement and reinforce clinic-based activities.

Behavior change communication (BCC) is a specialized field and an adequate discussion is beyond the scope of this document. NGOs should be aware of the value of investing in appropriate technical expertise for the design and implementation of BCC interventions.

KEY POINTS

- STIs are frequently not treated appropriately.
- Public awareness of STIs needs to increase.
- The public needs to know the facts about STIs:
  - STIs are a common health problem and can have severe consequences.
  - STIs increase the risk of acquiring HIV.
  - How STIs are transmitted and how they are not transmitted.
  - Common symptoms and signs of STIs.
  - Where to get help.
  - Importance of taking the correct drugs, in the correct dosages for the correct period of time.
  - Importance of condoms in preventing STI transmission.
  - Importance of partner management.

Increasing awareness of STIs in conflict-affected settings

MINIMUM response:

- Individual education and counselling of STI clients.
- Include BCC initiatives in project proposals.

COMPREHENSIVE response:

Minimum response plus:

Using approaches based on assessments:

- Clinic-based information, education and communication (IEC): posters, leaflets, videos, dramas and group education in waiting areas
- IEC by health outreach workers with individuals or groups
- Mass BCC campaigns
- Targeted BCC initiatives

9.2 Targeting services

Targeted services involve interventions specifically directed at and tailored to the characteristics of a particular sub-population.

Targeting core groups

For effective STI/HIV control, STI services and health care-seeking behavior among the general population must be improved. However, mathematical models have demonstrated that maximum population-level impact and cost effectiveness are achieved through providing STI treatment to those individuals who are most likely to transmit infection to others,[7] i.e., core groups, and bridging groups, such as the military, migrant workers, commercial sex workers (CSWs) and their clients.

Targeted interventions, including appropriate antibiotic therapy, have a greater impact on an epidemic when the prevalence is low and the infection remains concentrated in core groups. (Refer to Section 5.) However, even when an infection has spread beyond the core groups, interventions in core groups can still have a significant impact. Targeted interventions should thus complement service provision to the general population.

Core groups of concern in conflict-affected populations include the military, CSWs and their clients, and possibly forced migrants. Interventions among core groups pose challenges. Groups such as the military or CSWs may be difficult to access or difficult to identify. It is important that service provision should not make them vulnerable to stigmatization. A variety of strategies has been used to reach core groups:

- Although it is recommended that STI services be integrated into primary health care, in some settings specialized STI clinics may be useful in providing care to specific groups. For example, in Abidjan, Ivory Coast, a confidential clinic was set up in a discreet location in a popular area in town. The clinic does not advertise itself as an STI care facility.[8]
- Peer education has been effectively used to raise awareness and promote use of curative services among CSWs.[9]
- NGOs would rarely be involved in providing health services to uniformed forces, but there may be opportunities to involve locally stationed groups in BCC or training activities. For example, an NGO in Sierra Leone is implementing an STI/HIV BCC intervention targeting CSWs, the military and youth (in and out of school) in the same community.[10]
- A strategy that has been successfully applied to core groups is periodic presumptive treatment. Whether or not they have symptoms and signs, individuals at high risk of infection are treated presumptively for common curable STIs on a one-time or periodic basis. In a South African mining community, CSWs received monthly treatment for common STIs. A significant decline in prevalence of chlamydia, gonorrhea and genital ulcers was documented among the CSWs as well as mine workers.[11]

Targeting core areas

In some situations, it may be preferable to focus interventions on core areas rather than core groups. Core areas are geographic locations where the likelihood of acquiring a new partner is high, for example, trade centers, bars or social gathering places. The risk of stigmatization is reduced as all individuals frequenting the area are targeted.[12] A study in South Africa used a rapid assessment method to identify places where new sexual partnerships are formed, thus identifying potential places for HIV prevention interventions. Key informants denied that commercial sex existed in the community, but they did not object to identifying where people go to meet new partners. Most of the places identified were legal or illegal bars and taverns. No brothels were identified. The researchers concluded that if the assessment had sought to identify only traditional target groups such as truck drivers, the military and CSWs, many high-risk sites would have been missed.[13]

Targeting other groups

In addition to core groups, there are other sub-populations that need targeted interventions because of their vulnerability to acquiring STIs.

In conflict-affected settings, adolescents and humanitarian workers are two particularly vulnerable groups. (Refer to Section 4.)

- Although some steps have been taken to make general health services more "youth-friendly," it is also necessary to target young people by providing health services specifically for them through schools, youth centers or other youth programs. Reproductive health programs targeting the needs of young people can help them embark on a life of safer sexual activities and instill appropriate health care-seeking behavior.

- NGO staff members are an easily accessible group and organizations should provide condoms and STI information to all their staff. In addition, NGOs should address factors that may increase vulnerability among their staff, such as isolation, stress and limited opportunities for recreation.

- Furthermore, when working with displaced populations, the need for intervention in host populations should also be assessed.

Targeting men

The need for targeted interventions in core groups and vulnerable groups is clear. However, there may also be a need to specifically target men in the general population, adapting approaches to specific sub-populations, for example, workplace groups.

Women, and young women in particular, are at increased risk for acquiring STIs and HIV. (Refer to Section 2.) In sub-Saharan Africa, young women are infected with HIV in significantly higher numbers than males of similar age. In a population-based survey in South Africa, the prevalence of HIV among young people aged 14-24 years was 9 percent for men and 34 percent for women.[14] However, for biological and social reasons, there is value in intensively targeting men:

- Men with STIs are more often symptomatic than women and are more likely to have the resources and opportunity to access care.
- In some cultures, it may be acceptable for men to have multiple sexual partners.
- It may also be more acceptable for symptomatic men to notify their partners than vice versa.
- Partner treatment of symptomatic men will access a significant portion of asymptomatic women.
- Little attention has been given to improving the quality of services for men.[15]

- The approach of integrating STI control programs into reproductive health services may not improve access for men.[16] A 1999 literature review found that increased STI coverage was achieved through diversification of services and special programs for men, rather than through integration of STI services into existing family planning outlets.[17]

Innovative options to reach men should be explored. For example, social marketing of pre-packaged treatment kits for urethral discharge, containing medications, condoms, referral slip and instruction sheet, was successfully used in Uganda.[18] While a similar program in Cameroon[19] met with resistance from the medical establishment, it may nevertheless be an option in some conflict-affected settings, where there are few private sector providers.

While as much as possible should be done to improve the situation of women, it is equally important to intensively target men. The STI/HIV risk factors associated with conflict-affected populations may warrant a particularly concentrated effort to target men in STI control interventions in these settings.

KEY POINTS

- Targeted services involve interventions specifically directed and tailored according to the characteristics of a particular sub-population.
- Maximum population-level impact and cost-effectiveness are achieved through providing STI treatment to those individuals who are most likely to transmit infection to others: core groups and bridging groups.
- Core groups of concern in conflict-affected populations include the military, CSWs and their clients, and possibly forced migrants.
- Targeted interventions should also be directed at vulnerable groups such as adolescents and NGO staff.
- Intensive targeting of men is needed.
- Interventions targeting specific groups should complement service provision to the general population.

Targeting services in conflict-affected settings

►MINIMUM response:

- Include preliminary information on core groups and vulnerable groups in rapid assessments.

►COMPREHENSIVE response:

Minimum response plus:

- Include core groups and vulnerable groups in baseline studies.
- Explore options for accessing core groups.
- Train health staff in youth-friendly approaches.
- Liaise with other programs targeting adolescents.
- Liaise with local military for intervention opportunities.
- Introduce workplace STI prevention programs for NGO staff.
- Explore options for accessing men in the general population.

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Conclusion

This document offers a clinic-based approach to STI care. The clinic-based approach proposes a number of ways in which to improve the quality of STI care in conflict-affected settings. A key message of this document is that in order to provide STI care of acceptable quality, attention is needed not only to service provision, but also to underlying issues such as data collection, drug management, training and supervision, and service utilization.

To implement the recommendations, in most cases additional resources will be required. At a minimum, the focus of resource allocation will need to be redirected. An investment is needed in expertise to ensure technically sound interventions, based on reliable baseline and monitoring data. In addition to well-established approaches, innovative strategies are needed. To achieve sustained, effective control of sexually transmitted infections, continued advocacy will be needed for appropriate resource allocation and attention to technical quality.

It is crucial that clinical programs are complemented by community-based interventions addressing behavioral issues as well as the broader socio-cultural and economic context. In conflict-affected settings, the role of the conflict in the spread of STIs must also be taken into account.

STI control is a complex and controversial field. While contextual factors and resource constraints pose significant challenges to STI management in conflict-affected settings, opportunities do exist for improvements to quality of care.

Section 10

Summaries

10.1 Minimum and comprehensive responses to clinic-based care for STIs in conflict-affected settings

I Obtaining data (Section7)

►MINIMUM response:

- Situation analysis (where relevant, obtain data on host as well as displaced population):
  - Review existing biological, behavioral and contextual data.
  - Assess local health policies, treatment guidelines and essential drugs lists.
  - Identify existing surveillance protocols.
  - If no local data are available, obtain regional data.
- Conduct key informant interviews and focus groups for initial knowledge, attitude, practice and behavior (KAPB) information to ensure that emergency services are appropriate.
- Where a surveillance system is/was in place, continue with the same system if feasible.
- Institute routine syndromic case reporting for urethral discharge syndrome (UDS) in men and genital ulcer syndrome (GUS) in men and women.
- Document all screening tests on blood for transfusion: Rapid Plasma Reagin (RPR), hepatitis B and HIV.

►COMPREHENSIVE response:

Minimum response plus:

- Document RPR testing on all patients presenting with an STI.
- Institute sentinel surveillance in antenatal clinics for syphilis and anonymous unlinked HIV testing.
- Include adequate surveillance components in project proposals.
- Conduct behavioral studies to shape program design and to establish a baseline for monitoring and evaluation.
- Advocate for biological surveys where necessary and feasible.
- Assess syndromic algorithms against available data. If concerns about the effectiveness of local guidelines, consult with relevant host country authorities and/or international organizations. If necessary, advocate for review of guidelines.
- Consider supporting national surveillance systems.
- Advocate for investment in high quality STI surveillance.

II Delivering services (Section 8)

Comprehensive service provision

►MINIMUM response:

- Use rapid assessment data to guide locally appropriate service provision.
- Encourage syndromic management of STIs using local or WHO flowcharts.
- Make copies of algorithms available to all clinical staff.
- Provide a checklist to guide comprehensive case management, monitoring and supervision.
- Ensure availability of appropriate drugs.
- Provide condoms for all STI clients.
- Make condoms available at all health facilities and through outreach health workers.
- Ensure condom availability in the community.

Comprehensive service provision (cont'd)

►COMPREHENSIVE response:

Minimum response plus:

- Expand and adapt services as soon as feasible, guided by data obtained through baseline assessments and, where possible, behavioral and biological surveys.
- Refer to checklist in Annex 7.

Drug supply management

►MINIMUM response:

- Ensure adequate provision of drugs according to local syndromic guidelines.
- If no local guidelines are available, provide drugs according to WHO syndromic guidelines.
- Ensure appropriate storage of drugs.
- Ensure appropriate documentation of drug supply and prescription.
- STI drug management should be included in the general drug management system.

►COMPREHENSIVE response:

Minimum response plus:

- Ensure appropriate functioning of the drug management system within the agency, including appropriate selection, procurement, storage, distribution and use.
- Ensure adequate resources to promote effective drug management are included in project proposals.
- Train and supervise staff in drug management and rational drug use.
- Consider supporting local drug management systems.

Training and supervision

►MINIMUM response:

- Provide copies of syndromic guidelines to all providers.
- Provide case management checklists for self-monitoring and supervision.
- Where feasible, provide on-the-job training on management of STIs.
- Provide supportive supervision, taking into account constraints faced by staff in conflict-affected settings.

►COMPREHENSIVE response:

Minimum response plus:

- Conduct rapid assessment of training needs on STIs among NGO staff and national counterparts.
- Conduct training workshops on comprehensive STI care as soon as feasible.
- If possible, send some staff for practical training in reference institutions where exposure to STI cases may be high.
- Develop supervision systems in collaboration with staff.
- Follow up training with support, supervision and on-the-job training.
- Conduct follow-up training workshops at intervals as refreshers and to train new staff.

Working with private health care providers

►MINIMUM response:

- Include information about private providers in rapid assessment.

►COMPREHENSIVE response:

Minimum response plus:

- Provide syndromic guidelines and information, education and communication (IEC) materials to private providers.
- Invite private providers to training opportunities.
- Invite private providers to participate in planning of strategies to address STIs.

III Improving service utilization (Section 9)

Increasing awareness

►MINIMUM response:

- Individual education and counseling of STI clients.
- Include behavior change communication (BCC) initiatives in project proposals.

►COMPREHENSIVE response:

Minimum response plus:

Using approaches based on assessments:

- Individual education and counseling.
- Clinic-based IEC: posters, leaflets, videos, dramas and group education in waiting areas.
- IEC by health outreach workers targeting individuals or groups.
- Mass BCC campaigns.
- Targeted BCC initiatives.

Targeting services

►MINIMUM response:

- Include preliminary information on core groups and vulnerable groups in rapid assessments.

►COMPREHENSIVE response:

Minimum response plus:

- Include core groups and vulnerable groups in baseline studies.
- Explore options for accessing core groups.
- Train health staff in youth-friendly approaches.
- Liaise with other programs targeting adolescents.
- Liaise with local military for intervention opportunities.
- Introduce workplace STI prevention programs for NGO staff.
- Explore options for accessing men in the general population.

10.2 Key point overview

Section 2 – What are STIs?

- The most common route of transmission for STIs is sexual contact: vaginal, anal or oral.
- Some STIs can also be transmitted through contaminated medical equipment or blood transfusions, and from mother to baby during pregnancy and delivery.
- The most common curable STIs are syphilis, chancroid, gonorrhea, chlamydia and trichomoniasis.
- Incurable STIs are caused by viruses, e.g., HIV/AIDS, genital herpes, genital warts and hepatitis B and C.
- Candidiasis and BV are considered reproductive tract infections, rather than STIs.
- Common STI symptoms include:
  - unusual discharge from the vagina or penis
  - pain or burning with urination
  - itching or irritation of the genitals
  - sores, blisters or lumps on the genitals
  - rashes, including those on the palms of hands and soles of feet
  - lower abdominal pain
  - swelling in the groin (inguinal swelling)
- Many STIs do not cause any symptoms, especially in women.
- Asymptomatic STIs can still have serious consequences and can still be transmitted to others.
- Women are more vulnerable than men to STIs, for biological, social and economic reasons.

Section 3 - Why focus on STIs?

- STIs are among the most common health problems affecting adults worldwide.
- Sub-Saharan Africa has the highest incidences and prevalences of STIs.
- STIs can have serious medical consequences, including chronic illness, death, infertility, spontaneous abortion, neonatal illness and congenital abnormalities.
- STIs can have emotional and social consequences.
- Both ulcerative and non-ulcerative STIs enhance HIV transmission through increasing infectiousness and increasing susceptibility.
- Effective treatment of STIs can reduce the incidence of HIV infection.
- Many STIs are curable with appropriate treatment.
- Effective STI management is cost effective in terms of averting future costs to the individual, the health system and society.
- STIs are poorly managed in many settings for a variety of economic, structural and social reasons.

Section 4 – Why focus on STIs in conflict-affected settings?

- Overlaps exist among resource-poor settings, violent conflicts, population displacements and high prevalences of STIs and HIV/AIDS.
- In conflict-affected settings, a number of factors may increase vulnerability to STI/HIV transmission, including: population movements, social instability, poverty, commercial sex, presence of military or peacekeeping forces, reduced access to health services and substance abuse.
- Conflict may have an immediate or a delayed effect on the spread of STIs.
- Conflict-affected settings present both challenges and opportunities for STI control, encompassing resources, access, capacity, implementation and quality of care.

Key point overview (cont'd)

Section 5 – Contexts for approaching STI care

- The rate of spread of an STI in a community depends on:
  - the probability that an exposed person will acquire the infection
  - the frequency of exposure
  - the duration of infectiousness in an infected person
- Core groups of high frequency transmitters increase the rate of spread of STIs disproportionately.
- Primary prevention aims to prevent individuals from acquiring STIs.
- Secondary prevention aims to reduce illness and complications, and prevent the spread of the STI to others.
- WHO advocates a "public health package" which includes primary and secondary prevention strategies.

Syndromic management context

- Diagnosis based on laboratory testing is the preferred method of STI case management, but is not feasible in many settings.
- Clinical etiological diagnosis is unreliable and should NOT be used.
- Syndromic management is a simplified method of STI case management based on seven main syndromes, which does not rely on laboratory testing.
- Syndromic case management consists of:
  - identification of a group of symptoms and signs, which constitute a defined syndrome
  - prescription of a combination of drugs covering the main pathogens responsible for the syndrome in a particular geographical area or population
  - use of syndromic case management flowcharts (algorithms) to guide diagnosis and treatment
- Advantages of the syndromic approach include:
  - effectiveness (particularly for UDS and GUS)
  - efficiency (patient does not have to wait for lab results)
  - facilitation of standardized STI management practice
- Limitations include:
  - over-diagnosis and over-treatment
  - inability to detect asymptomatic infections
  - problem with management of vaginal discharge
- The vaginal discharge problem centers the decision of whether to treat for vaginitis only, or for cervicitis as well as vaginitis.
- Accepting the limitations of the syndromic approach, attention should focus strongly on aspects of STI service delivery which may feasibly be improved in conflict-affected settings.

Section 6 - A clinic-based approach to STI care in conflict-affected settings

Introduction to Sections 7 to 9 - no key points

Section 7 – Obtaining data

- There is a widespread lack of STI data in conflict-affected settings.
- Effective STI interventions are based upon sound contextual, biological and behavioral data.
- Contextual data describe the circumstances in which people live.
- Basic biological surveillance includes case reporting and monitoring of prevalence, syndromic etiologies and antimicrobial resistance.

- Prevalence data highlight the magnitude of a public health problem and guide interventions to priority areas and populations.
- Prevalence and sensitivity data guide syndromic management algorithms.
- Behavioral surveillance monitors trends in the behaviors that lead to infections.
- Behavioral studies include quantitative and qualitative components, such as questionnaire surveys, focus groups and key informant interviews.
- Appropriate equipment, expertise and experience are essential for conducting biological and behavioral surveys.

Section 8 – Delivering services

Comprehensive STI care

Service delivery

- Accessible services
- Confidentiality and a caring staff attitude
- Appropriate diagnostic equipment and supplies
- Provision of effective drugs

Clinical management

- Appropriate history-taking and examination
- Diagnosis and treatment according to the syndromic approach
- Follow-up visit
- RPR test offered to all STI clients
- RPR test offered in first and third trimesters for ANC clients
- Routine eye prophylaxis for neonates

IEC

- Provision of individual education and counseling
- Provision of condoms and education on use
- Assistance with partner notification
- Clinic-based IEC strategies

Drug supply management

- Lack of effective antibiotics is one of the main constraints to the control of STIs.
- Antimicrobial resistance is widespread and increasing.
- Ineffective drugs, inadequate dosages and inadequate duration of treatment all contribute to the development of resistance.
- The ultimate costs of using cheaper, less effective antibiotics outweigh the costs of providing more expensive but effective drugs.
- Provision of effective treatment for STIs requires attention to all aspects of drug management, including selection, procurement, distribution and use.

Training and supervision

- STI case management practices are often poor.
- Training of health workers is needed on all components of comprehensive STI care, including syndromic management, counseling, education and condom demonstration.
- Training is also needed on provider attitudes, confidentiality and stigma.
- Initial training should be complemented by regular in-service training and supervision.
- Inadequate supervision is an important factor contributing to poor STI care.
- A collaborative process may promote acceptance among health workers of new STI care approaches.

Key point overview (cont'd)

Working with private health care providers

- Many STI clients seek care outside the public sector.
- While the public may perceive quality of care to be higher in the private sector, this is often not the case.
- Efforts to improve STI care need to include the private sector.

Section 9 – Improving service utilization

Increasing public awareness of STIs

- STIs are frequently not treated appropriately.
- Public awareness of STIs needs to increase.

The public needs to know the following about STIs:

- STIs are a common health problem and can have severe consequences.
- STIs increase the risk of acquiring HIV.
- How STIs are transmitted and how they are not transmitted.
- Common symptoms and signs of STIs.
- Where to get help.
- Importance of taking the correct drugs, in the correct dosages for the correct period of time.
- Importance of condoms in preventing STI transmission.
- Importance of partner management.

Targeting services

- Targeted services involve interventions specifically directed and tailored according to the characteristics of a particular sub-population.
- Maximum population-level impact and cost-effectiveness are achieved through providing STI treatment to those individuals who are most likely to transmit infection to others: core groups and bridging groups.
- Core groups of concern in conflict-affected populations include the military, commercial sex workers and their clients, and possibly forced migrants.
- Targeted interventions should also be directed at vulnerable groups, such as adolescents and NGO staff.
- Intensive targeting of men is also needed.
- Interventions targeting specific groups should complement service provision to the general population.

Self-evaluation

1. Genital herpes is curable.

   True False

2. Chlamydia is a viral infection.

   True False

3. Most sexually transmitted infections (STIs) result in recognizable symptoms and signs.

   True False

4. Women are more vulnerable to STIs than men.

   True False

5. STIs cause infertility in women but not in men.

   True False

6. Non-ulcerative STIs do not facilitate HIV transmission.

   True False

7. Effective treatment of STIs can reduce the incidence of HIV infection in a population.

   True False

8. Conflict may have an immediate or a delayed impact on the spread of STIs.

   True False

9. Population movements usually have little effect on the spread of STIs.

   True False

10. HIV prevalences among military personnel are often significantly higher than in the general population.

    True False

11. The rate of spread of an STI depends on the probability that an exposed person will acquire the infection, the rate of exposure, and the duration of infectiousness in an infected person.

    True False

12. Secondary prevention aims to reduce illness and complications.

True False

13. Syndromic case management involves treatment aimed at a single pathogen.

True False

14. The syndromic approach can be used to screen for asymptomatic STIs.

True False

15. Laboratory testing has an important role in public health decision-making for the control of STIs.

True False

16. Minimal laboratory expertise is required to conduct STI prevalence surveys.

True False

17. STI prevalence in women attending antenatal clinics may be used as a proxy for prevalence in the sexually active general population.

True False

18. Routine syndromic case reporting for STIs should be based upon urethral discharge syndrome (UDS) in men and genital ulcer syndrome (GUS) in men and women.

True False

19. Examination of the external genitalia is not always necessary for effective STI case management.

True False

20. Routine syphilis testing should be available to all pregnant women and all STI clients.

True False

21. Inadequate dosage and duration of treatment contribute to the development of antimicrobial resistance.

True False

Self-evaluation cont'd

22. Efforts to improve STI care should focus only on the public sector.

True False

23. In-service training, monitoring and supervision contribute significantly to the quality of STI care.

True False

24. STI-related information should only be provided within a clinic-based setting.

True False

25. Interventions targeting core groups have a greater impact on an epidemic when the prevalence is low in the general population.

True False

Answers to self-evaluation

1. False	10. True	19. False
2. False	11. True	20. True
3. False	12. True	21. True
4. True	13. False	22. False
5. False	14. False	23. True
6. False	15. True	24. False
7. True	16. False	25. True
8. True	17. True	
9. False	18. True	

Field evaluation form

1. Please describe the context in which you are working.

2. Did you find the guidelines useful?

3. Which parts of the guidelines did you find most useful?

4. Which parts of the guidelines did you find least useful?

5. In terms of style and content, reading the guidelines was:

Very easy Fairly easy Difficult Very difficult

6. Which categories of staff in your organization are likely to find these guidelines useful?

7. What suggestions do you have for improving the content, style or format?

Please complete the following information (optional): Your name, organization, address, tel., fax, email.

Thank you for reviewing the guidelines. We greatly appreciate your feedback.

Please return the completed form to:

Women's Commission for Refugee Women and Children
122 East 42nd Street, New York, NY 10168-1289, USA
Tel: 212 551 3112 • Fax 212 551 3180
Email: info@rhrc.org

Annex 1 Glossary

Anonymous unlinked testing
Blood samples are stripped of all identifying markers and cannot be traced back to the individual. As the test is anonymous, consent is not required and people do not receive their results.

Asymptomatic
Without symptoms.

Bridging groups
Groups linking sub-populations at higher risk of infection (core groups) with the general population.

Case reproduction rate (Ro)
The number of new cases of an infection generated by an infected person. Represents the rate of spread of an infection.

Cervicitis
Inflammation of the cervix.

Core groups
Sub-populations that have high rates of partner exchange and thus a higher probability of acquiring and transmitting infections than the general population.

Ectopic pregnancy
The fetus develops outside the uterus (womb), for example, in a fallopian tube or in the abdominal cavity. The fetus is not viable. This is a life-threatening condition for the mother.

Emergency phase
Doubling of the baseline crude mortality rate (CMR), or one or more deaths per 10,000 population per day when the baseline CMR is unknown.

Epithelial / Epithelium
Upper layers of cells in skin or mucous membranes.

Etiology
The factor(s) causing the disease, for example, a particular species of bacteria.

Incidence
The incidence of a disease is the number of new cases occurring in a defined population during a defined time interval.

Perinatal
The perinatal period extends from 22 completed weeks of pregnancy to 7 completed days after birth.

Post-emergency phase
Less than a doubling of the baseline CMR, or less than one death per 10,000 per day when the baseline CMR is unknown.

Prevalence
The prevalence of a disease is the proportion or percentage of individuals in a defined population who have the disease at a specific point in time.

Reliability
Reliability is the ability of a test or a research tool (e.g., questionnaire) or an algorithm to perform consistently under different circumstances. For example, a laboratory test with high reliability will give the same result on the same specimen when performed by a number of different technicians. A reliable questionnaire will produce consistent results when used by different interviewers.

Sensitivity
The sensitivity of a diagnostic test or algorithm is its ability to identify all cases of an infection. The higher the sensitivity, the fewer cases the test will miss (false negatives). For example, if the sensitivity of a test is 90% and 100 infected people are tested, 90 will have positive test results and 10 will have negative test results, even though they are infected (false negatives).

Seroconversion
The stage in the course of a disease at which the immune system manufactures sufficient antibodies for detection on laboratory testing.

Specificity
The specificity of a diagnostic test or algorithm is its ability to correctly identify individuals who are not infected. The higher the specificity, the lower the number cases incorrectly identified as positive (false positives). For example, if the specificity of a test is 95% and 100 people who are not infected are tested, 95 will have negative test results and 5 will have positive test results, even though they are not infected (false positives).

Sensitivity and specificity provide an indication of how well a diagnostic test or algorithm works (i.e., how valid it is). Ideally a test should have 100% sensitivity and 100% specificity. Low sensitivity means that some infected individuals are missed and thus do not receive treatment. Low specificity means that some individuals are being treated unnecessarily. From a public health perspective, high sensitivity is more important than high specificity: the more infected cases that are detected and treated, the fewer infections are spread into the population.

Surveillance
Monitoring of the incidence and prevalence of diseases in a population over time.

Syndrome
A syndrome refers to a group of symptoms and signs which can all be part of the same underlying medical condition.

Vaginitis
Inflammation of the vagina.

Validity
Validity represents the combination of sensitivity and specificity of a test or algorithm compared with those of the gold standard. The gold standard is the best available diagnostic test for a disease.

Viral load
Measure of the number of viruses in the blood.

Selected STI syndromic case definitions:[1]

Urethral discharge syndrome (UDS)
Urethral discharge in men with or without dysuria. (This syndrome is most commonly caused by Neisseria gonorrhea and Chlamydia trachomatis; other infectious agents associated with urethral discharge include Trichomonas vaginalis, Ureaplasma urealyticum and Mycoplasma species.)

Vaginal discharge syndrome
Abnormal vaginal discharge (indicated by amount, color and odor) with or without lower abdominal pain or specific symptoms or specific risk factors. (This syndrome is most commonly caused by BV, vulvo-vaginal candidiasis and trichomoniasis; it is less frequently caused by gonococcal or chlamydial infection.)

Genital ulcer syndrome (GUS) – non-vesicular
Ulcer on penis, scrotum or rectum in men and on labia, vagina or rectum in women, with or without inguinal lymphadenopathy. (This syndrome can be caused by syphilis, chancroid, lymphogranuloma venereum, granuloma inguinale or atypical cases of genital herpes.)

Genital ulcer syndrome – vesicular
Genital or anal vesicles in men or women. (This syndrome is typically caused by genital herpes simplex virus (HSV) infection.)

Lower abdominal pain in women / Pelvic inflammatory disease (PID)
Symptoms of lower abdominal pain and pain during sexual intercourse with examination showing vaginal discharge, lower abdominal tenderness or temperature >38C. (This syndrome, which is suggestive of pelvic inflammatory disease, may be caused by gonococcal, chlamydial or anaerobic infection.)

[1] UNAIDS/WHO. Guidelines for Sexually Transmitted Infections Surveillance. 1999

Annex 2

Clinical notes on selected sexually transmitted infections

Treatment regimens are provided for uncomplicated ano-genital infections and are adapted from the WHO Guidelines for the management of sexually transmitted infections, 2003.

Gonorrhea

Gonorrhea is caused by a bacterium, *Neisseria gonorrhoea*. Gonorrhea is transmitted through vaginal, anal and oral sex. It may also be transmitted from mother to baby during delivery.

Presentation

Up to 80 percent of women and 10 percent of men infected with gonorrhea may be asymptomatic. Symptoms usually appear two to seven days after infection, but can take up to 30 days. Early symptoms are often mild and non-specific.

In women, symptoms may include:

- Pain or burning on urination
- Unusual vaginal discharge
- Bleeding between menstrual periods
- Bleeding after sexual intercourse

In men, symptoms may include:

- Burning on urination
- Discharge from penis
- Painful or swollen testicles

In men and women, symptoms of rectal infection (proctitis) may include:

- Anal discharge or bleeding
- Anal itching or pain
- Painful bowel movements

Infections in the throat have few symptoms but may cause a sore throat.

Complications:

Untreated gonorrhea can result in serious and permanent complications in men, women and infants.

In women, untreated gonorrhea can spread past the cervix and infect the uterus, fallopian tubes and ovaries, leading to pelvic inflammatory disease (PID).

In men, gonorrhea can cause epididymitis, which may lead to infertility if left untreated. Gonorrhea can also affect the prostate and can lead to scarring and stricture (narrowing) of the urethra, resulting in problems with urination.

In about 0.5 - 1 percent of all infections[1], gonorrhea spreads into the blood, and may result in septicemia, arthritis, skin lesions, endocarditis and meningitis. These conditions may be life threatening. Arthritis can cause permanent joint damage. In both women and men, the presence of gonorrhea infection increases the risk of acquiring or transmitting HIV.

In infants, gonorrhea infection can cause eye infections, joint infection or life-threatening septicemia. Conjunctivitis usually occurs during the first week after birth and may lead to corneal ulceration, perforation and blindness. Historical data have shown that around 3 percent of neonates with gonococcal ophthalmia will develop complete blindness if untreated, and 20 percent will have some degree of corneal damage.[2]

Treatment of gonorrhea

Gonorrhea can easily be cured using effective antibiotics. However, antimicrobial resistance is a significant problem globally. Effective treatment ends infectiousness within hours, but untreated infections may persist for months. Patients should refrain from unprotected sex for seven days after treatment.

Recommended regimen:

ciprofloxacin 500mg orally as a single dose
or
ceftriaxone 125mg im as a single dose
or
cefixime 400mg orally as a single dose
or
spectinomycin 2g im as a single dose

Ciprofloxacin is contraindicated in pregnancy and is not recommended for use in children and adolescents.

Chlamydia

Chlamydial infection is caused by a bacterium, *Chlamydia trachomatis*. Chlamydia is transmitted through vaginal, anal or oral sex. Young women are especially susceptible to chlamydia because of the characteristics of the cells lining the cervical canal. Chlamydia may be transmitted from mother to baby during delivery.

Presentation:

About 75 percent of women and 50 percent of men infected with chlamydia are asymptomatic.[3] Symptoms, if present, usually appear one to three weeks after infection.

In women, symptoms may include:

- Unusual vaginal discharge
- Bleeding after intercourse
- Bleeding between menstrual periods
- Abdominal pain

In men, symptoms may include:

- Discharge from the penis
- Burning or itching around the meatus (opening) of the penis
- Burning with urination
- Swollen and/or painful testicles

Chlamydia can infect the rectal lining during anal sex, causing proctitis. Chlamydia can also be found in the throats of women and men after having oral sex with an infected partner.

Note: Lymphogranuloma venereum is also caused by chlamydia, but by a different serotype.

Complications:

Untreated chlamydia can result in serious and permanent complications in men, women and infants. In 40 percent of women with untreated chlamydia, the infection will progress to PID.[4]

In men, chlamydia causes urethral infection, which may spread to the epididymis, resulting in pain, fever, chronic infection and, potentially, infertility. In both men and women, the presence of a chlamydial infection can increase the risk of acquiring or transmitting HIV. There is evidence that chlamydial infections can lead to premature delivery. If a mother delivers while infected with chlamydia, the infection may be passed to the baby and can result in neonatal conjunctivitis and pneumonia. Conjunctivitis usually develops after 5-12 days but may develop up to 30 days after birth. The baby may also develop chlamydial pneumonia at one to three months of age.

Treatment of chlamydia

Chlamydia can be easily cured with appropriate antibiotics.

Recommended regimen:

doxycycline 100mg orally twice a day for 7 days

or

azithromycin 1g orally in a single dose

Alternative regimens:

amoxycillin 500mg orally 3 times a day for 7 days

or

erythromycin 500mg orally 4 times a day for 7 days

or

ofloxacin 300mg orally twice a day for 7 days

or

tetracycline 500mg orally 4 times a day for 7 days

Doxycycline and other tetracyclines are contra-indicated during pregnancy and lactation.

In pregnancy:

amoxycillin 500mg orally 3 times a day for 7 days

or

erythromycin 500mg orally 4 times a day for 7 days

Erythromycin estolate is contra-indicated during pregnancy. Only erythromycin base or erythromycin ethylsuccinate should be used.

Patients should refrain from unprotected sex for seven days after single dose treatment, or for the duration of treatment of a seven-day course. The period of infectiousness without treatment is not known.

Trichomoniasis

Trichomoniasis is caused by a protozoan parasite, *trichomonas vaginalis*. Trichomoniasis is transmitted through vaginal sexual contact.

Trichomoniasis in the most common curable STI worldwide. Prevalence studies among pregnant women in Africa have shown rates varying from 9.9 percent in Central African Republic to 41.4 percent in South Africa.[5]

Presentation:

Most men with trichomonas infection are asymptomatic. Approximately 50 percent of infected women experience symptoms. Symptoms usually appear within 5 to 28 days after infection.

Symptoms in women may include:

- Unusual vaginal discharge
- Itching or burning of the vagina and vulva
- Discomfort during intercourse or urination

Symptoms in men may include:

- Irritation inside the penis
- Discharge from the penis
- Burning with urination

Complications:

Trichomonas infections have no systemic complications but there is evidence that suggests that vaginal trichomonas infection facilitates the acquisition and transmission of HIV infection. Trichomoniasis is also associated with adverse birth outcomes such as premature delivery, premature rupture of membranes and low birth weight.

Treatment of trichomoniasis

Trichomoniasis is easily cured with antibiotics. In men, symptoms usually disappear within a few weeks even without treatment. However, they remain infectious until treated. Many people may be symptom-free carriers for years.

Recommended regimens for vaginal infections:

metronidazole 2g orally in a single dose

or

tinidazole 2g orally in a single dose

Alternative regimens:

metronidazole 400 or 500mg orally twice daily for 7 days

or

tinidazole 500mg orally twice daily for 5 days

Metronidazole is not recommended for use in the first trimester of pregnancy.

Recommended regimens for urethral infections:

metronidazole 400 or 500mg orally twice daily for 7 days

or

tinidazole 500mg orally twice daily for 5 days

Bacterial vaginosis

BV develops when there is a change in the environment of the vagina, resulting in an imbalance in the normal vaginal bacteria. Lactobacillus species are replaced by anaerobic bacteria, such as gardnerella species and mycoplasma species. The causes of the microbial changes are not fully understood.

BV is the most common cause of vaginal discharge worldwide. BV is a reproductive health tract infection (RTI), not an STI. Any woman can develop BV, although it is more common among sexually active women and in women with a new sexual partner. BV is also associated with having multiple partners and with vaginal douching.

Presentation:

50 percent of women with BV may be asymptomatic.

Symptoms:

- Itching or tingling in the genital area
- Unusual vaginal discharge
- Burning with urination

Complications:

BV is associated with pre-term labor, premature rupture of membranes, postpartum endometritis and PID. BV also increases the risk of HIV transmission.

Treatment of BV

Recommended regimen:

metronidazole 400 or 500mg orally twice a day for 7 days

Alternative regimens:

metronidazole 2g orally as a single dose
or
clindamycin 2% vaginal cream 5g intravaginally at bedtime for 7 days
or
metronidazole 0.75% gel 5g intravaginally twice daily for 5 days
or
clindamycin 300mg orally twice daily for 7 days

In pregnancy:

metronidazole 200 or 250mg orally three times daily for 7 days, after the first trimester.

Alternative regimens

metronidazole 2g orally as a single dose
or
metronidazole 0.75% gel 5g intravaginally twice daily for 7 days
or
clindamycin 300mg orally twice daily for 7 days

Routine treatment of sex partners is not recommended as this has not been shown to reduce the risk of reinfection. It is recommended that vaginal douching be avoided.

Candidiasis

Candidiasis is caused by a yeast, *Candida albicans*. Rarely, other candida species are involved.

Vulvo-vaginal candidiasis (VVC) is an RTI, not an STI. VVC occurs when the normal environment in the vagina changes. Women with immune system disorders, such as diabetes or HIV, are predisposed to VVC. VVC may also occur in relation to antibiotic use. In most women however, the reason for the infection is unclear. VVC is often referred to as a "yeast infection."

About 75 percent of women will have at least one episode of VVC in their life. Some women have recurrent VVC.

10-20 percent of women with candida are asymptomatic. Although VVC is not considered an STI, a minority of male partners may have mild balanitis (inflammation of the glans).

Presentation:

In women:

- Internal and external genital itching
- Redness of the vulva
- Vaginal discharge: thick curd-like is characteristic, but may not always be present
- Pain with sexual intercourse
- Burning with urination

In men:

Redness and irritation of the glans penis

Complications:

Vaginal yeast infections have no systemic complications but are associated with increased HIV transmission.

Treatment of candidiasis

Recommended regimen:

miconazole or clotrimazole 200mg intravaginally daily for 3 days

or

clotrimazole 500mg intravaginally as a single dose

or

fluconazole 150mg orally as a single dose

Alternative regimen:

nystatin 100,000 IU intravaginally daily for 14 days

Treatment of male partner is not recommended except in women with recurrent VVC.

Syphilis

Syphilis is caused by a spirochaete bacterium, *treponema pallidum*. Syphilis is transmitted through vaginal, anal or oral sex as a result of direct contact with syphilis sores, which mainly occur in the genital area, or contact with the semen, vaginal fluids, saliva or blood of infected persons. Transmission can also occur through blood transfusion. Mother-to-child transmission can occur during pregnancy or delivery.

Presentation:

Syphilis is a complex disease, causing a variety of symptoms at different stages of the infection. The infection can invade any part of the body. The clinical picture for men and women is similar. Symptoms may appear within ten days to three months, but usually appear about three weeks after infection.

Primary syphilis - one to three months:

The first sign of syphilis infection is usually a small painless ulcer (chancre) in the area of sexual contact (penis, vagina, anus, rectum or mouth). The ulcer may appear on the cervix or in the rectum and may thus not be evident. The ulcer usually disappears within four to six weeks, even without treatment. If no treatment is given, the disease progresses to the second stage.

Secondary syphilis - one to three months:

In about one-third of untreated cases, as the ulcer heals, a generalized skin rash appears which may include the palms of the hands and soles of the feet or mucosal surfaces. Condylomata lata are painless raised skin lesions occurring on the perineum. The rashes resolve even without treatment. The individual may also experience tiredness, sore throat, patchy hair loss, muscle aches, swollen lymph nodes and fever. These symptoms disappear within a few weeks to 12 months. Even though the initial symptoms of syphilis disappear spontaneously, the syphilis infection remains in the body if not treated.

Latent syphilis - two to fifty years:

When the secondary symptoms disappear, the latent (hidden) stage of syphilis begins. Even though there are no symptoms, the infection begins to damage the musculo-skeletal, cardiovascular and nervous systems. Of all untreated syphilis cases, 30 percent progress to the tertiary stage, while 70 percent have life-time latency.

Tertiary (late) syphilis:

The internal damage which started during the latent stage becomes evident in the tertiary stage. Lesions called gummas may develop in the skin, internal organs, bone or mucosal surfaces. Symptoms of tertiary syphilis include coordination problems, paralysis, numbness, gradual blindness, dementia, joint damage and heart disease. This damage may be serious enough to result in death.

Complications:

Syphilis increases the risk of HIV acquisition and transmission. Pregnancy wastage (abortion, premature delivery and stillbirth) occurs in about one-third of pregnancies in women with untreated syphilis. A further one-third will deliver infants with congenital syphilis. Most infants with congenital syphilis are asymptomatic at birth. Manifestations begin to appear in the third to eighth week after birth and may include snuffles, palmar and plantar bullae, splenomegaly, pallor, joint swelling with or without pseudoparalysis, jaundice, skin rashes and failure to thrive.

Treatment of syphilis

Adequate treatment with penicillin ends infectivity in 24-48 hours. The period of communicability without treatment is variable and may be indefinite.

Early syphilis (primary, secondary or latent syphilis of not more than two years duration):

Recommended regimen:

benzathine benzylpenicillin 2.4 million IU im divided into two injections given at separate sites

Alternative regimen:

procaine benzylpenicillin 1.2 million IU daily im for 10 consecutive days

Alternative regimens for penicillin-allergic non-pregnant patients:

doxycycline 100mg orally twice daily for 14 days

or

tetracycline 500mg orally four times daily for 14 days

Alternative regimen for penicillin-allergic pregnant patients:

erythromycin 500mg orally 4 times daily for 14 days

Late latent syphilis:

benzathine benzylpenicillin 2.4 million IU im once a week for three consecutive weeks

Alternative regimen:

procaine benzylpenicillin 1.2 million IU daily im for 20 consecutive days

Alternative regimens for penicillin-allergic non-pregnant patients:

doxycycline 100mg orally twice daily for 30 days

or

tetracycline 500mg orally four times daily for 30 days

Alternative regimen for penicillin-allergic pregnant patients:

erythromycin 500mg orally four times daily for 30 days

Chancroid

Chancroid is caused by a bacterium, *Haemophilus ducreyi*. Transmission is through direct contact with ulcers on or around the genitals, anus, rectum and mouth or with discharges from ulcers and lymph nodes.

Presentation:

Symptoms usually appear within three to five days after infection, but may take up to 14 days to appear. Asymptomatic infections may occur in women.

Symptoms:

- Painful ulcers with ragged edges on or around genitals
- Painful swelling of lymph glands
- Ulceration of lymph glands

Complications:

There are no systemic complications.

Treatment of chancroid

Recommended regimen:

ciprofloxacin 500mg orally twice daily for 3 days

or

erythromycin base 500mg orally 4 times daily for 7 days

or

azithromycin 1g orally as a single dose

Alternative regimen:

ceftriaxone 250mg im as a single dose

Fluctuant nodes should be aspirated through healthy skin.

Improvement may be seen within one week, although larger ulcers may require up to two weeks. Lymph nodes take longer to heal. Without treatment, ulcers and enlarged glands may persist for several weeks or months. The individual remains infectious as long as there are open sores or glands discharging pus.

Genital herpes

Genital herpes is caused by two types of herpes simplex virus, HSV-1 and HSV-2. HSV-2 is more commonly implicated in genital herpes. Herpes is transmitted through vaginal, anal or oral sexual contact or through kissing. The virus is spread through contact with ulcers or secretions, but most transmission occurs through unrecognized lesions or asymptomatic shedding of the virus. Herpes can be transmitted from mother to infant during pregnancy and delivery.

Presentation:

60-70 percent of infected individuals do not experience symptoms.[6] Symptoms may appear 2 to 12 days after infection.

Symptoms:

- Blisters or ulcers (sores) on the mouth, lips, genitals, anus or surrounding areas
- Burning or pain with urination
- Itching or tingling in the affected area

The initial (primary) infection may be accompanied by flu-like symptoms, such as headache, fever, malaise, muscle aches and enlarged glands in the groin. Blisters form ulcers which may be extremely painful. The ulcers of the primary infection usually crust over and heal within 1 to 3 weeks.

Complications:

Once an individual is infected with herpes, the virus is carried for life. The virus often remains latent and does not cause symptoms for long periods of time. Asymptomatic shedding of the virus may persist between outbreaks and can thus be transmitted to sexual partners. Some people experience recurrent outbreaks. Itching and tingling are often a warning sign that an outbreak will occur soon. The frequency and severity of outbreaks vary from person to person. A number of outbreaks may occur during the first year after infection but the frequency usually decreases over time. During recurrent outbreaks, ulcers usually heal in 3 to 7 days and are not as painful as during the primary infection. People with suppressed immune systems may have severe, persistent ulcers. Oral herpes infections may result in encephalitis.

Genital herpes can be transmitted from mother to baby during pregnancy and delivery. Primary infection during pregnancy may result in miscarriage, fetal growth retardation and preterm labor. The potential for transmission is greatest if a primary infection occurs close to the time of delivery. About 30-50 percent of infants delivered vaginally to a mother with primary infection will be infected with the herpes virus. Of babies born to women experiencing recurrent herpes at delivery, 1-4 percent will be infected. Of infants infected with herpes at birth, 30-60 percent die within the first month of life. Survivors may be left with long-term complications such as mental retardation and seizures.[7] Caesarean section is indicated if a mother has a herpes outbreak at the time of delivery.

Treatment of genital herpes

There is no cure for herpes. Antiviral medications may reduce the formation of new lesions, the severity of the symptoms and the duration of the outbreak. Viral shedding may also be decreased. Medication should be started as soon as possible after the onset of symptoms. In patients with HIV, the dose and duration of treatment may need to be increased.

Recommended regimens for first clinical episode:

acyclovir 200mg orally 5 times daily for 7 days
or
acyclovir 400mg orally 3 times daily for 7 days
or
famciclovir 250mg orally 3 times daily for 7 days
or
valaciclovir 1g twice daily for 7 days

Recommended regimens for recurrent infection:

acyclovir 200mg orally 5 times daily for 5 days
or
acyclovir 400mg orally 3 times daily for 5 days
or
acyclovir 800mg orally twice daily for 5 days
or
famciclovir 125mg orally twice daily for 5 days
or
valaciclovir 500g twice daily for 5 days

Daily suppressive therapy may be considered for individuals with frequent recurrences. This reduces the frequency of recurrence and also reduces asymptomatic shedding.

Recommended regimens for suppressive therapy:
acyclovir 400mg orally twice daily continuously
or
famciclovir 250mg orally twice daily
or
valaciclovir 500mg or 1g orally once daily

Suppressive therapy may have important implications for HIV control but would rarely be feasible in resource-poor settings.

Pelvic inflammatory disease

Many different organisms can cause PID, but most cases are associated with gonorrhea and chlamydia. It is estimated that 10 to 80 percent of women with either of these untreated STIs will develop symptomatic PID.[8]

PID may have no symptoms, or mild to severe symptoms including:
- Abdominal pain
- Lower back pain
- Pain during sexual intercourse
- Bleeding between periods
- Fever
- Nausea

PID can be a serious condition and requires immediate treatment. PID may result in irreversible damage to the genital tract, leading to abscess formation, chronic pelvic pain, infertility and an increased risk of ectopic pregnancy (which is potentially fatal). After one episode of PID, a woman has an estimated 15 percent risk of infertility. After two episodes, the risk is approximately 35 percent, and after three, the risk is nearly 75 percent.[9]

Many experts recommend that all patients with PID should be admitted to hospital for treatment. Hospitalization should seriously be considered when:
- the diagnosis is uncertain
- surgical emergencies such as ectopic pregnancy or appendicitis cannot be excluded
- a pelvic abscess is suspected
- the patient is severely ill
- the patient is pregnant
- the patient is unable to follow or tolerate an outpatient regimen
- the patient has failed to respond to outpatient therapy

Treatment of pelvic inflamatory disease

Outpatient therapy – recommended syndromic treatment:

Single dose therapy for uncomplicated gonorrhea

PLUS

doxycycline 100mg orally twice daily, or tetracycline 500mg orally 4 times daily, for 14 days

PLUS

metronidazole 400-500mg orally twice daily for 14 days

Inpatient therapy – recommended syndromic treatment options:

ceftriaxone 250mg im once daily

PLUS

doxycycline 100mg orally or IV twice daily, or tetracycline 500mg orally 4 times daily

PLUS

metronidazole 400-500mg orally or IV twice daily, or chloramphenicol 500mg orally or IV 4 times daily

OR

clindamycin 900mg IV every 8 hours

PLUS

gentamycin 1.5mg/kg IV every 8 hours

OR

ciprofloxacin 500mg orally twice daily, or spectinomycin 1g im 4 times daily

PLUS

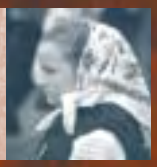
doxycycline 100mg orally or IV twice daily, or tetracycline 500mg orally 4 times daily

PLUS

metronidazole 400-500mg orally or IV twice daily, or chloramphenicol 500mg orally or IV 4 times daily

For all three regimens, therapy should be continued until at least two days after the patient has improved and should be followed by oral doxycycline or tetracycline for 14 days.

[1] Benenson AS. (Ed.) Control of Communicable Diseases Manual. Amercian Public Health Association, Washington. 1995.
[2] WHO. Global prevalence and incidence of selected sexually transmitted infections. 2001.
[3] Centers for Disease Control and Prevention. Fact sheet. Chlamydia. 2001.
[4] Ibid.
[5] WHO. Global prevalence and incidence of selected sexually transmitted infections. 2001.
[6] Mindel A. Genital Herpes- How much of a public-health problem? Lancet. 1998; 351: 16-18.
[7] Centers for Disease Control and Prevention. Fact sheet. Genital herpes. 2001.
[8] Centers for Disease Control and Prevention. Fact sheet. Pelvic inflammatory disease. 2001.
[9] EngenderHealth. STI online course. www.engenderhealth.org. 2002.


Annex 3

Discussion of Mwanza and Rakai trials

Possible explanations for the differences between the outcomes of the Mwanza and Rakai trials[1]

- At the time of the studies, the HIV prevalence in Mwanza was low (4 percent), while the Rakai study was carried out in the setting of a mature HIV epidemic (16 percent). In the early stages of an HIV epidemic, the virus is concentrated in core groups of individuals with high rates of partner exchange, such as commercial sex workers and their clients. These groups also have high incidences and prevalences of STIs. At any stage of an HIV epidemic, the presence of an STI increases the risk of HIV transmission between two individuals. Treatment of STIs in high risk groups in the early stages of an epidemic may thus significantly reduce the spread of the virus. However, as the proportion of individuals in the population who are carrying the HIV virus increases, HIV transmission increasingly takes place independently of factors such as STIs. Thus, treatment of STIs in mature HIV epidemics, while still important in reducing HIV transmission at individual level, will have less of an impact on the spread of HIV at population level, compared with early epidemics.

- The prevalence of genital herpes was higher in Rakai than in Mwanza. HSV-2 has been shown to be a significant cofactor for HIV transmission.

- The Mwanza trial targeted symptomatic STIs. As a result of the greater inflammatory response associated with symptomatic STIs, these may present a higher risk for HIV transmission. Therefore, focusing on symptomatic infections may be a very effective way to target STI treatment interventions.

- Continuously available STI services, such as in Mwanza, may have a greater effect on reducing STI transmission than intermittent mass treatment,[2] as people may be re-infected soon after treatment and need to be treated again.

As a result of the debate generated by these two trials, WHO/UNAIDS convened an expert consultation to review the findings. The consultation concluded:

> "On the basis of the collective evidence reviewed in this report, the Consultation considers that STI management continues to be an essential component of HIV prevention programmes and should continue to be a key component for AIDS control programmes, especially in areas where STIs are highly prevalent. There are sufficient scientific data pointing to the importance of STI control and the impact this can have on HIV transmission. Although it has been suggested that impact often depends on the epidemiology of STIs in the community and the stage of the HIV epidemic, studies…show that even in mature epidemics, interventions can have a significant impact…"[3]

1 Flemming DT, Wasserheit JN. From epidemiological synergy to public health policy and practice: the contribution of other sexually transmitted diseases to sexual transmission of HIV infection. Sexually Transmitted Infections. 1999; 75:3-7.

2 Grosskurth H, Gray R, Hayes R, et al. Control of sexually transmitted diseases for HIV-1 prevention: Understanding the implications of the Mwanza and Rakai trials. Lancet. 2000; 1981-87.

3 UNAIDS/WHO. Consultation on STD interventions to prevent HIV: What is the evidence? UNAIDS Best Practice Collection. 2000.

Annex 4

Syndromic management algorithms

Adapted from: WHO. Guidelines for the management of sexually transmitted infections. 2003.

Urethral discharge syndrome

Patient complains of urethral discharge

↓

Take history and examine
Milk urethra if necessary

↓

Discharge confirmed?

NO → Any other genital disease?

NO →
- Educate and counsel
- Promote condom use and provide condoms
- Offer HIV counseling and testing if both facilities available
- Review if symptoms persist

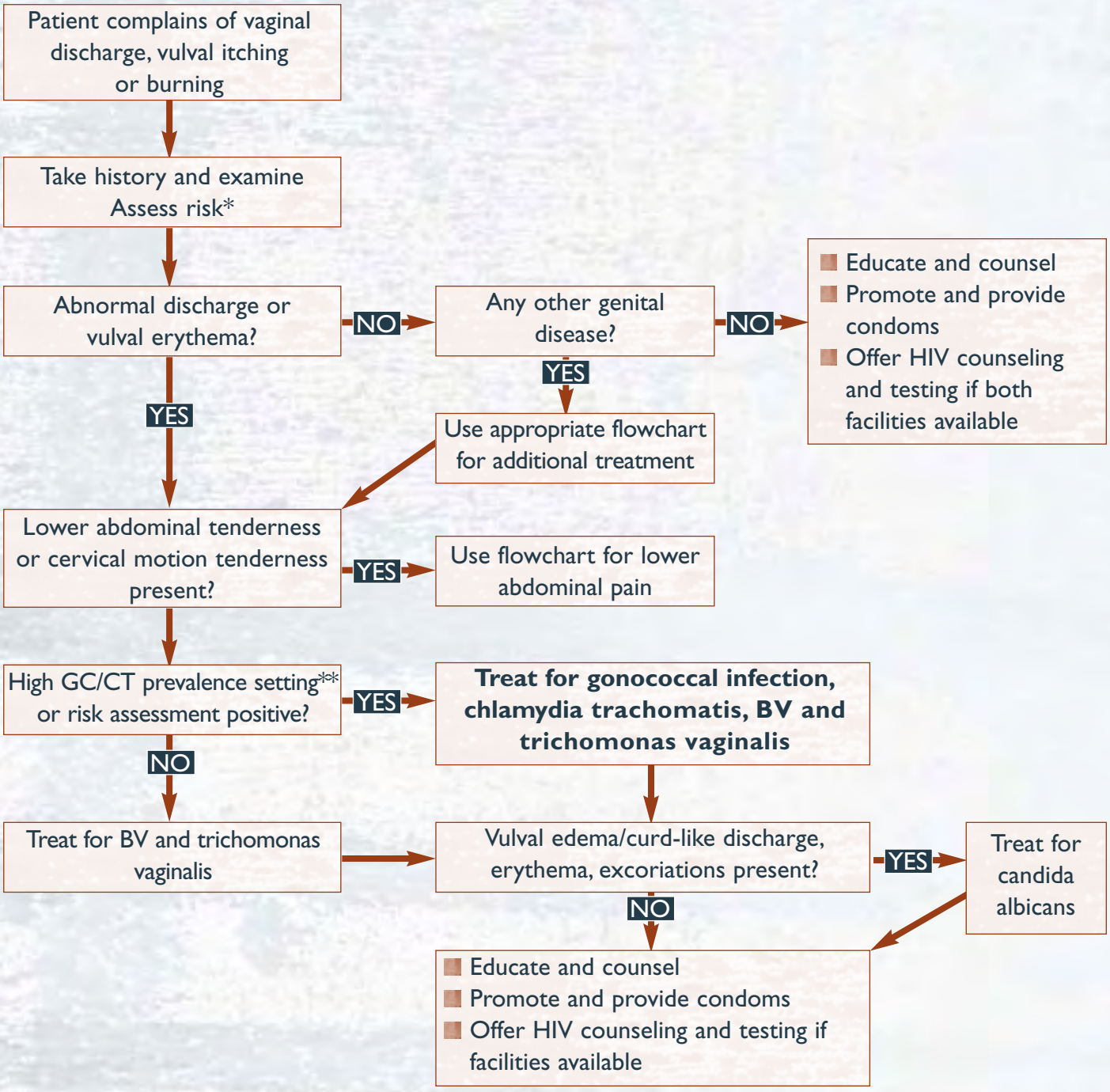
YES ↓

- **Treat for gonococcal infection and chlamydia trachomatis**
- Educate and counsel
- Promote condom use and provide condoms
- Manage and treat partner
- Offer HIV counseling and testing if both facilities available
- Ask patient to return in 7 days if symptoms persist

YES ↓

Use appropriate flowchart

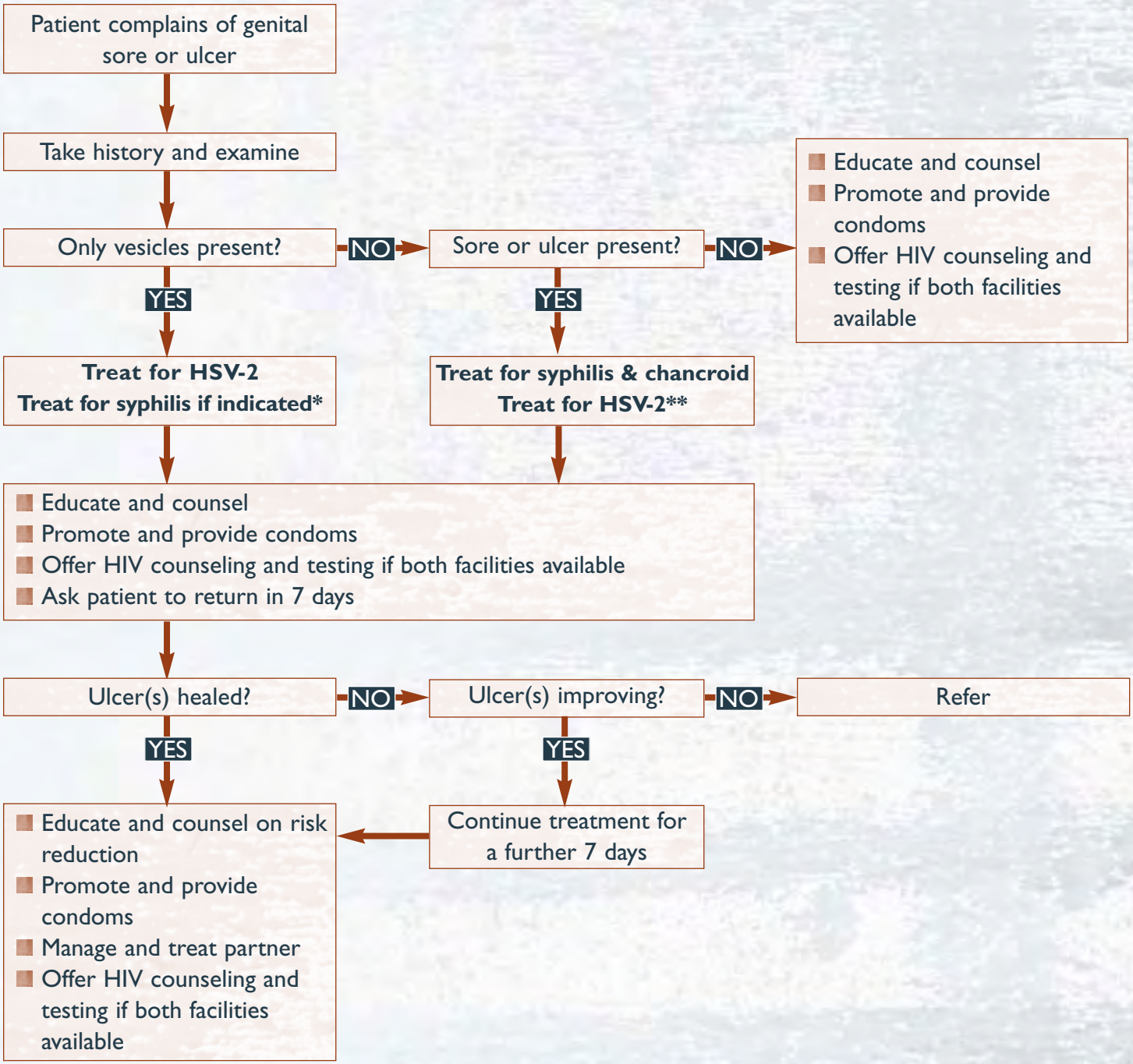
Vaginal discharge syndrome



*Risk factors need adaptation to local social behavioral and epidemiological situation.

**The determination of high prevalence levels needs to be made locally.

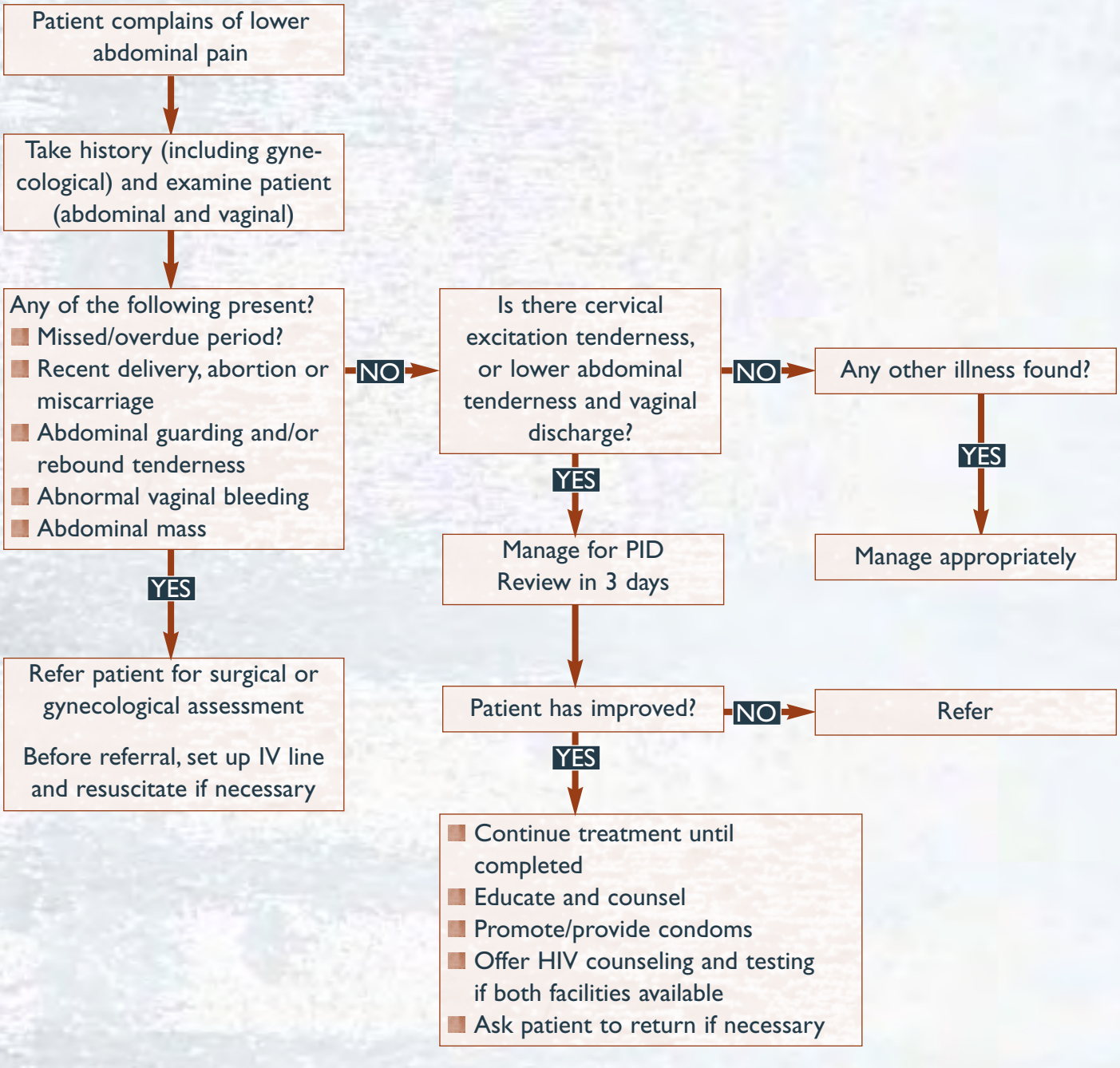
Genital ulcer syndrome



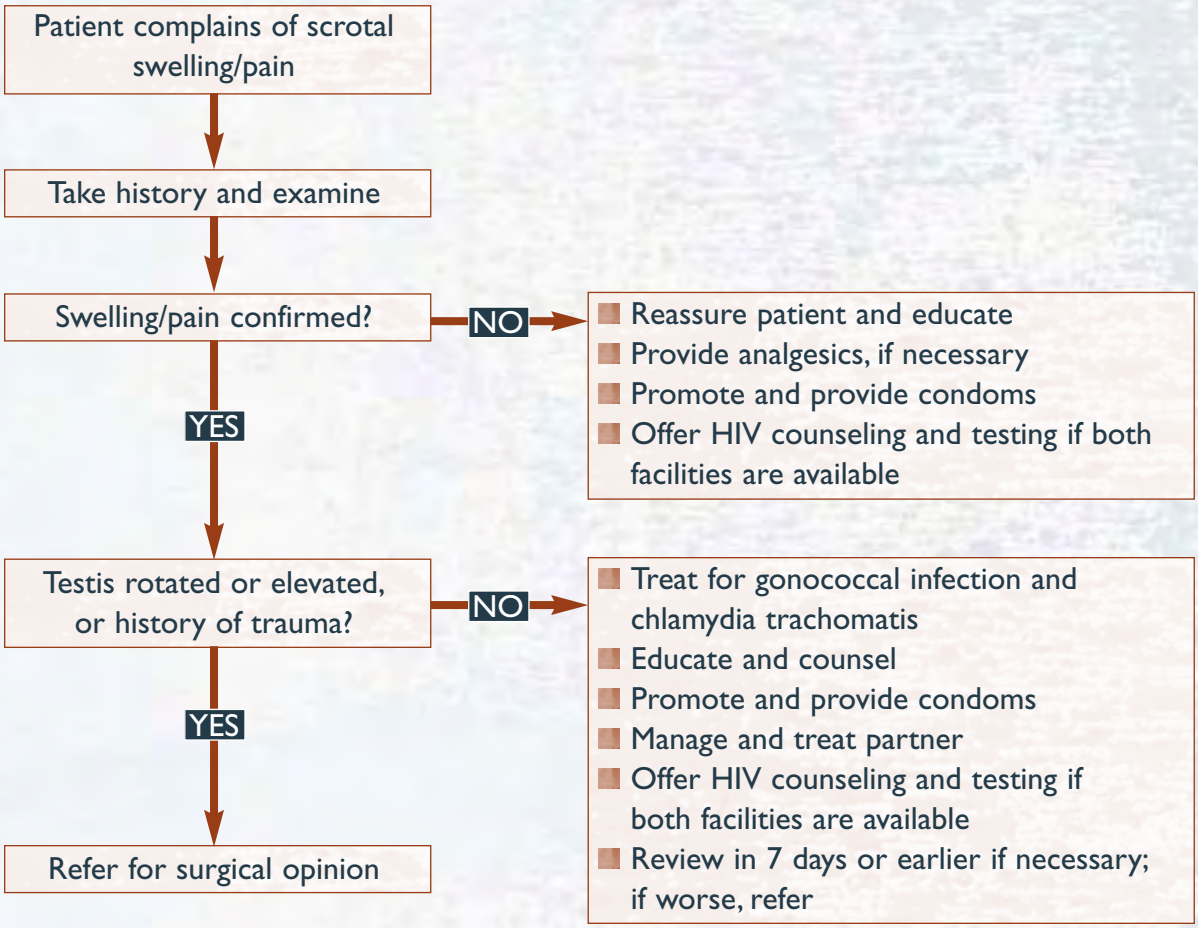
* Indications for syphilis treatment:
- RPR positive and
- Patient has not been treated for syphilis recently

**Treat for HSV-2 where prevalence is 30% or higher, or adapt to local conditions

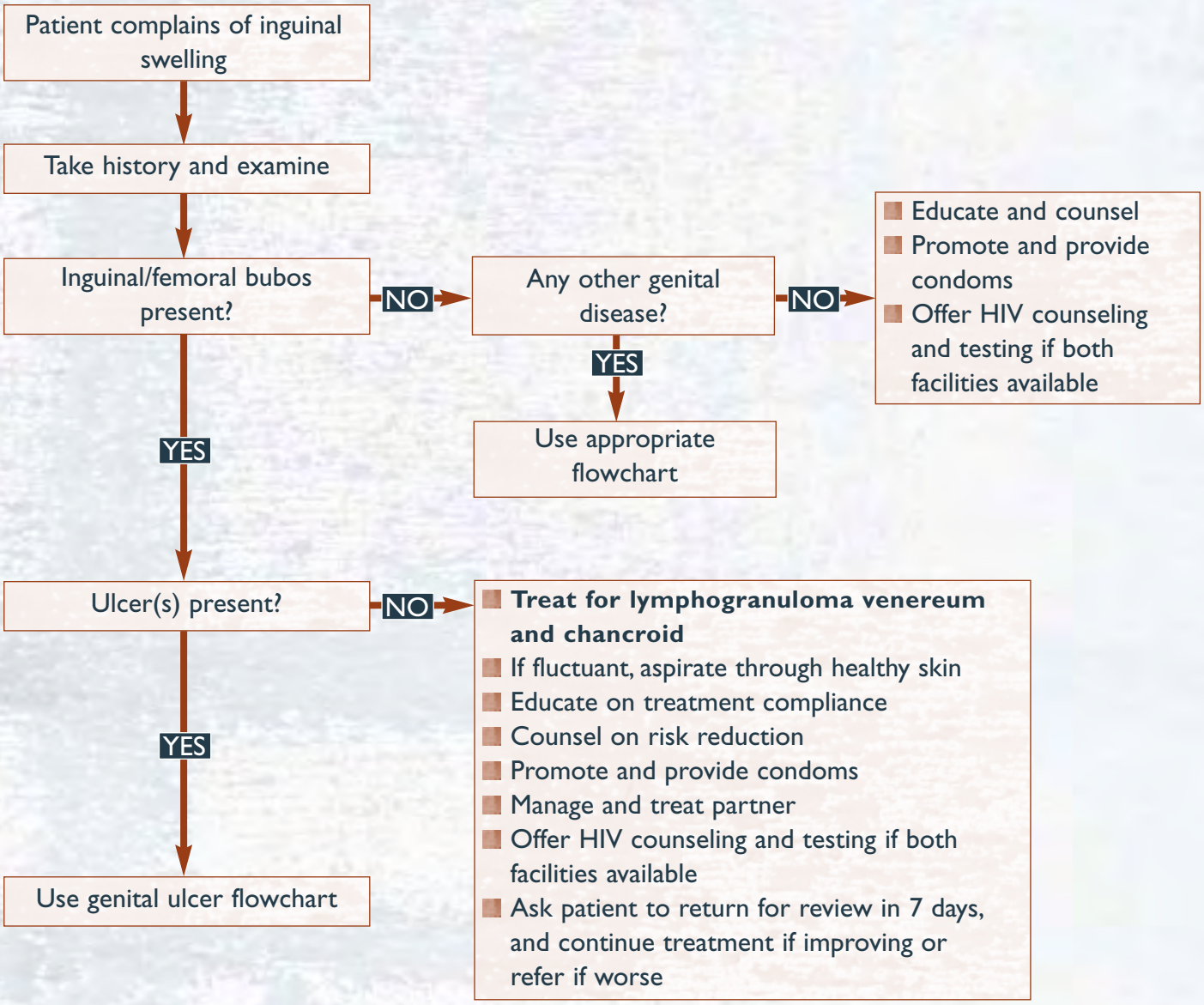
Lower abdominal pain



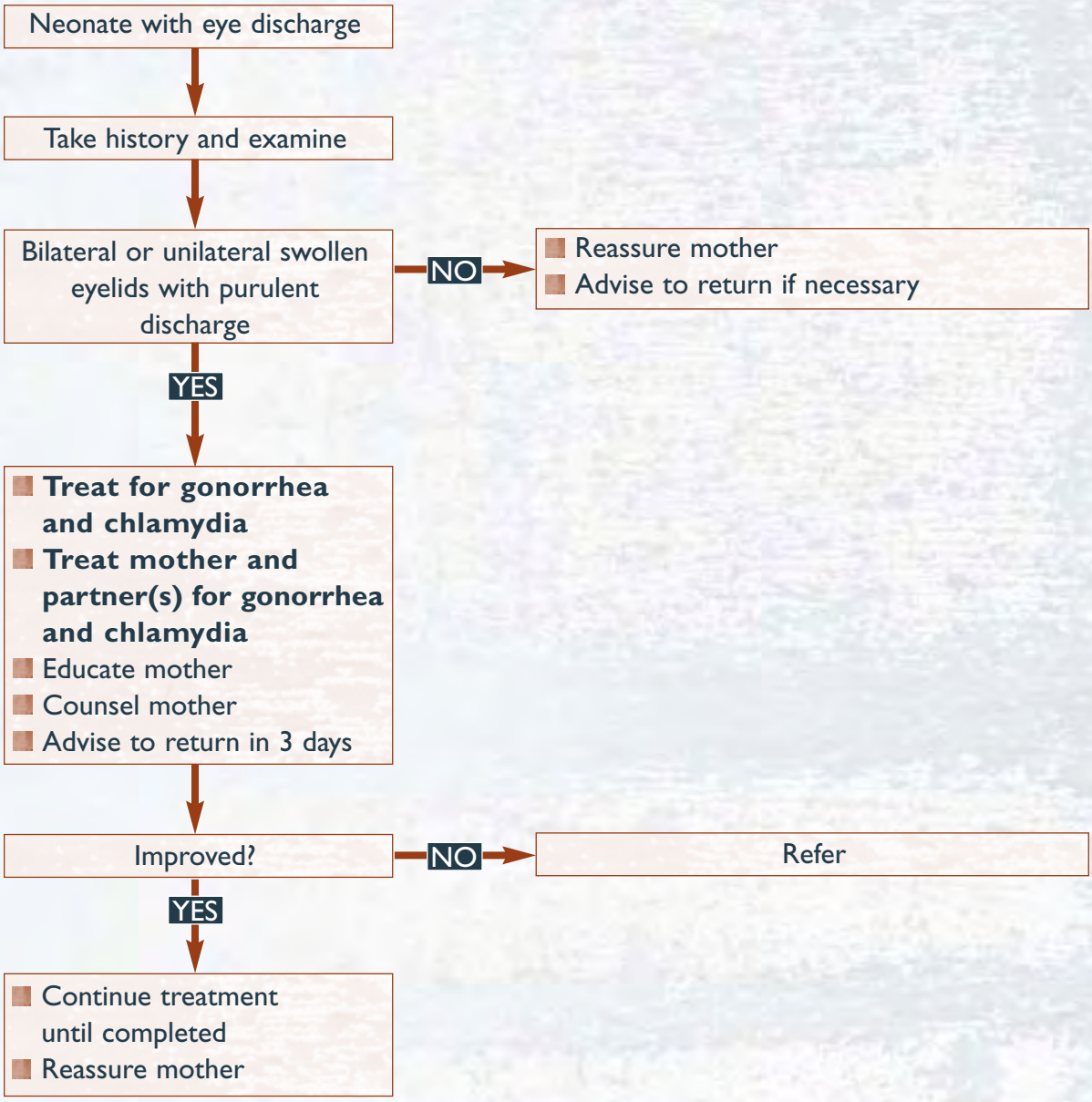
Scrotal swelling



Inguinal swelling



Neonatal conjunctivitis



Annex 5

WHO risk analysis tool

High risk = score greater than or equal to 2

Risk factor	score
Symptomatic partner	2
Below age 21	1
Unmarried	1
More than one sexual partner	1
New sexual partner in past three months	1
With speculum add:	
Presence of cervical mucopus	2

NOTE: It is important that risk factors be adapted to the local situation. Refer to Annex 6.

Annex 6

Risk analysis discussion

Validation studies of risk analyses have been carried out in a variety of contexts [1] with mixed results. In general, risk factor analyses have not been found to significantly improve the performance of the vaginal discharge flowchart.

Some clinical signs, such as the presence of cervical mucopus, cervical erosions or bleeding after intercourse and between menses, are associated with cervical infection. However, these signs are not consistently present and can therefore not reliably be used to identify cervicitis. Recognition of cervical mucopus and erosions also depends on the technical capacity of the clinician. Speculum examination is therefore not consistently useful in distinguishing between vaginal and cervical infections. (However, where circumstances and staff capacity allow, speculum examination should still be performed as part of a comprehensive gynecological assessment and to rule out other potential causes of discharge, such as a foreign body in the vagina, carcinoma and endometritis.)

Some risk factor analyses include microscopy. N.gonorrhea may be identified in microscopic examination of vaginal/cervical discharge. However, the sensitivity of the test is low (50 to 70 percent for N. gonorrhea),[2] especially if the patient has douched or washed just prior to examination. Chlamydia cannot be detected on simple microscopy. Microscopy does not, therefore, improve the performance of the vaginal discharge flow chart and is not recommended. Microscopy for trichomonas may however be useful in making a decision about partner notification in the case of a diagnosis of vaginitis. (As the other causes of vaginitis are not STIs, partner treatment is not necessary for these.)

The WHO expert consultation also recommended that the KOH (Whiff) and pH tests for diagnosis of BV be dropped. Given the high prevalence of BV, the potentially negative pregnancy outcomes, the increased risk for HIV transmission and the low price of metronidazole, it would seem cost-effective to treat all women presenting with abnormal discharge for BV.

Demographic and behavioral risk factors have in some settings been associated with cervicitis. These risk factors include:

- age below 21 years
- unmarried
- more than one sexual partner in the last three months
- new partner in the last three months
- current partner has an STI
- recent use of condoms by partner

There are, however, some problems associated with the use of behavioral and demographic risk factors. It has been found that such risk factors are usually specific to the population for which they have been identified and validated and cannot easily be applied to other populations. In particular, specific risk factor analyses may need to be developed for adolescents, whose risk factors may differ from those of older women. The performance of a flowchart based on behavior also depends upon the truthfulness of statements

made by the clients.[3] In some cultures, women may be reluctant to provide information about sexual behavior. Furthermore, the risk of acquiring an STI is for many women determined by their partners' sexual behavior. Risk factor analyses could also contribute to stigmatization by labeling individuals as "high risk" or "promiscuous."[4]

In India, 319 women complaining of vaginal discharge were tested and managed according to locally recommended flowcharts which included risk factor analysis and speculum-assisted clinical evaluation. The flowchart was not found to be helpful in predicting cervical infections.[5] In Kenya, a study evaluated the validity of different flowcharts for the diagnosis of gonococcal and chlamydia trachomatis infections among pregnant and non-pregnant women presenting with vaginal discharge. Several flowcharts were tested, with and without speculum examination and risk factor analyses. The risk factors differed significantly between the two sub-populations. None of the flowcharts achieved acceptable levels of sensitivity and specificity, although the flowcharts with risk factors performed slightly better than the others. The researchers concluded that none of the tested flowcharts would constitute a marked improvement over the existing Kenyan flowchart.[6]

Risk factor analysis has been found to have some benefit in high prevalence settings, but requires a locally adapted risk analysis tool. However, the WHO expert consultation concluded that the risk assessment step should be dropped in areas of low gonococcal and chlamydia prevalence because it does not significantly increase the validity of the flowchart.

1 A number of these studies were published in a supplement to the journal Sexually Transmitted Infections 1998; 74.

2 WHO Regional Office for the Western Pacific. Laboratory tests for the detection of reproductive tract infections. 1999.

3 Obunge OK, Brabin L, Dollimore N, et al. A flowchart for managing sexually transmitted infections among Nigerian adolescent females. Bulletin of the World Health Organization. 2001; 79:301-305.

4 Pettifor A, Walsh J, Wilkins, V, Raghunathan, P. How effective is syndromic management of STDs? A review of current studies. Sexually Transmitted Diseases. 2000; 27(7): 371-385.

5 Vishwanath S, Talwar V, Prasda R, et al. Syndromic management of vaginal discharge among women in a reproductive health clinic in India. Sexually Transmitted Infections. 2000; 76: 303-306.

6 Fonck K, Kidula N, Jaoko W, et al. Validity of the vaginal discharge algorithm among pregnant and non-pregnant women in Nairobi, Kenya. Sexually Transmitted Infections. 2000; 76: 33-38.

Annex 7

Checklist for comprehensive STI care

Service delivery:

1. Accessible services

- Physical accessibility
- Discreet access
- Structure and arrangement allow privacy during history-taking and examination
- Opening times to suit various client groups
- Affordable services

2. Assured confidentiality and a caring, non-judgmental attitude from staff

- Assessment of cultural attitudes on confidentiality among staff
- Organizational policies
- Training

3. Appropriate diagnostic equipment and supplies

- Minimum: examination table, light, gloves
- Additional: specula of different sizes, swab-holding forceps, basin, swabs, slides, saline

4. Provision of effective drugs

- Treat according to national protocols unless otherwise indicated.
- Refer to Section 8.2.

Clinical management:

5. Appropriate history-taking and physical examination

- Refer to Annex 8.
- Training

6. Diagnosis and treatment using the syndromic approach

- Policy for using syndromic algorithms (locally-adapted or WHO)
- Copies of algorithms available to all clinical staff
- Algorithm posters placed in consulting rooms
- Training of staff in use of algorithms
- Recommendation of a follow-up visit for all STI clients

7. Routine RPR testing for STI clients

- All STI clients offered an RPR test with same-day treatment

8. Routine RPR screening for all antenatal clinic attendees with same-day treatment

- All antenatal clinic clients receive an RPR test before 6 weeks and again in the third trimester, with same-day treatment.

9. Routine eye prophylaxis for all neonates

- Application of 1% silver nitrate solution or 1% tetracycline ointment to the eyes of all infants at delivery

IEC

10. Provision of individual education and counseling on:

- the infection, its potential consequences and how it is transmitted
- the importance of completing the prescribed treatment
- the importance of partner notification and treatment
- personal risk reduction strategies
- HIV/AIDS

11. Provision of condoms and education on use

- Provide to all STI clients
- Make available to all clinic clients
- Make available to community through outreach staff

12. Assistance with partner notification

With consent of patient, options include:

- patient informs partner
- patient gives card from health facility to partner
- health worker visits partner
- card is sent from health facility advising partner to seek care
- patient is given additional medication to take home to partner

13. Clinic-based IEC strategies

- Materials to reinforce individual counseling, e.g., posters, leaflets
- Target all health facility clients, e.g., posters, leaflets, videos or dramas in waiting areas
- Messages consistent with community-based behavior change communication interventions

Annex 8

Summary of STI history-taking and examination[1]

HISTORY

- Explore main symptoms and their duration.
- Sexual history: when did the patient have sex, with whom and in what manner (including use of condom).
- Past history of STIs and treatment.
- Previous treatment during this episode.
- Help patient identify partner(s) who may have exposed / been exposed.
- Other illnesses, medications and allergies.
- Ask women about menses, contraception and obstetric history.

EXAMINATION OF WOMEN

- Help patient to feel at ease.
- Allow patient to recline on examination table.
- Inspection of pubic hair, genitals (including separation of labia), perineum and inguinal lymph nodes.
- Abdominal and bimanual examination of the posterior urethra.
- Speculum examination, visualizing cervix and vaginal walls.
- Bimanual examination.
- Examine anus, rectum, mouth, throat and skin when appropriate.

EXAMINATION OF MEN

- Help patient to feel at ease.
- If possible, allow patient to recline on examination table.
- Inspection of pubic hair, genitals, perineum and inguinal lymph nodes.
- Retraction of foreskin in uncircumcized patients.
- If no discharge seen, massage ("milk") urethra.
- Palpation of testicles and epididymis.
- Examine anus, rectum, mouth, throat and skin when appropriate.

[1] Adapted from: Family Health International. HIV/AIDS Prevention and Care in Resource-Constrained Settings. 2001. FHI. Arlington.

Annex 9

List of STI drugs and supplies

Sample calculation of supplies to treat 10,000 people for 3 months[1]

Assume:
50% of the affected population are adults
Therefore:
50% of 10,000 = 5,000

Assume:
5% of the adults have an STI
Therefore:
5% x 5,000 = 250 persons

Assume:
20% have genital ulcers
Therefore:
20% x 250 persons = 50

Assume:
50% have urethral discharge
Therefore:
50% x 250 persons = 125

Assume:
30% have vaginitis
Therefore:
30% x 250 persons = 75

Assume:
10% will be treated for cervicitis
Therefore: 10% x 250 persons = 25

Genital ulcers (treat for syphilis and chancroid)	
Benzathine Benzyl-penicillin 2.4 units, 1 dose	50
Syringes, disposable, 5ml	50
Needles, disposable, 21g	100
Water for injection 10ml	50
Cotton wool, absorbent, not sterile, 100g	3
Chlorhexidine sol. 5%, 1 liter	3
Erythromycin 500mg tablets (4/day x 7 days)	1,400
Urethral discharge (treat for gonorrhea and chlamydia)	
Ciprofloxacin 500mg (single dose)	125
Doxycycline 100mg tablets (2/day x 7 days)	1,750
Vaginitis (treat for candidiasis and trichomoniasis)	
Metronidazole 250mg tablets (2g single dose or 500mg 2/day x 7 days)	2,000
Clotrimazole 500 mg pessaries (single dose)	100
Cervicitis (treat for gonorrhea and chlamydia)	
Ciprofloxacin 500mg1 (single dose)	20
Doxycycline 100mg tablets (2/day x 7 days)	280
For pregnant women:	
Cefixime 400mg tablets (single dose)	20
Erythromycin 500mg tablets (4/day x 7 days)	560
Condom distribution	
Condoms (20 gross)	3,000
Safe sex leaflets	100
Poster for syndromic diagnosis of STI	1
Safety box, for used syringes and needles – Capacity 5L	4
Envelope, plastic, 10 x 15 cm – pack of 100 (for drugs/tabs distribution)	10

[1] Inter-agency Standing Committee Task Force on HIV/AIDS in Emergency Settings. Guidelines for HIV/AIDS interventions in emergency settings. Draft 21 June 2003

Annex 10

STI care supervision checklist

(This checklist is based on the DISCA (District STI Clinic Assessment) tool which was developed by the South African National STI Initiative as a quality improvement instrument for primary health care facilities.)

Health facility name & location_____

_____

Date of visit_____ Time of visit_____

Name, title and job of person filling out this form_____

_____

Structure and condition of facility:_____

Adequate staff coverage? YES___ NO___

Adequate space for patient consultations? YES___ NO___

1. On which days and at which times are services available for patients presenting with STIs?

_____

2. Can STI patients receive treatment after hours from this facility? YES___ NO___

3. Are STI services provided by all the clinicians? YES___ NO___

4. Observe whether this facility offers consultation in private for all STI patients (i.e., the patient cannot be seen or heard by other patients or staff).

_____

_____

5. Ask to see the register books and record the following for last month:

a. total number of patients seen _____

b. total number of patients 15 years and older (if readily available) _____

c. total number of family planning clients_____

d. total number of ANC patients seen_____

e. total number of STI patients seen _____

f. total number of RPR tests done _____

6. Is a physical examination done on all STI patients? YES___ NO___

7. Is a speculum examination done on all female STI patients? YES___ NO___

8. Are the following pieces of equipment available in all adult consultation rooms:

a. Examination table YES___ NO___

If no, in how many consultation rooms is there an examination table?_____

b. Examination light YES___ NO___

If no, in how many consultation rooms is there an examination light?_____

How many of the lights are in working order?_____

c. Examination gloves YES___ NO___

d. Vaginal specula YES___ NO___

9. Is there a protocol or guidelines for management of STIs in this facility? (Ask to see it) YES___ NO___

10. Is there a copy of the guidelines in each consultation room? YES___ NO___

11. Do the guidelines use the syndromic approach? YES___ NO___

12. STI drugs: in stock stock out last month

Ciprofloxacin oral _____

Metronidazole oral _____

Erythromycin oral _____

Doxycycline oral _____

Tetracycline oral _____

Cotrimoxazole oral _____

Benzathine pen inj _____

13. Are there individual patient education materials about STI/HIV prevention and treatment available in this facility? YES___ NO___

Describe:

_____

14. Are there any general STI education materials/activities targeting all clinic clients? YES___ NO___

Describe:

_____

15. Are these educational materials available in a local language? YES___ NO___

16. How are specula sterilized in this facility?

_____

17. Is syphilis testing available at this facility? YES___ NO___

18. Are all STI patients tested for syphilis? YES___ NO___

19. Are all pregnant women attending antenatal clinics tested for syphilis?
YES___ NO___

20. Is RPR testing performed on site, or is the specimen sent away for testing?

_____

21. If the specimen is sent away, how long does it take before the result is available?

_____

22. Do all neonates receive eye prophylaxis? YES___ NO___

23. Are condoms available in this facility today? YES___ NO___

24. Were condoms out of stock at any time during last month? YES___ NO___

25. Where in the facility are condoms available?

_____

26. Which patients with STIs get referred for further investigation / treatment?

_____

27. Where are they referred?

_____

28. How are partners notified?

_____

29. How many partners were notified last month?

_____

30. How many partners received treatment last month?

_____

31. What is the total number of clinical staff working at this facility?

_____

32. How many clinicians are working today?

33. How many clinicians have received formal training on syndromic management of STIs?

34. How many clinicians have received formal training on HIV counseling?

35. What are the problems that affect STI management in this facility?

Annex 11

Additional resources

STIs - general

- EngenderHealth. STI online minicourse. 2001. www.engenderhealth.org
- WHO. Guidelines for the management of sexually transmitted infections. 2003. www.who.int/hiv
- WHO. Report of an expert consultation on improving the management of sexually transmitted infections. 2001. www.who.int
- WHO. Regional office for the Western Pacific. Laboratory tests for the detection of reproductive tract infections. 1999. www.who.int

STIs in conflict-affected settings

- Interagency Standing Committee. Guidelines for HIV/AIDS interventions in emergency settings. www.unhcr.ch
- International Rescue Committee. Protecting the Future. 2003. www.theirc.org
- UNHCR/WHO/UNFPA. Inter-agency field manual. Reproductive health in refugee situations. Geneva, 1999. www.unhcr.ch
- Sphere Project, Sphere Humanitarian Charter and Minimum Standards in Disaster Response. Revised Handbook. 2004. www.sphereproject.org
- UNAIDS/UNHCR. HIV/AIDS and STI prevention and care in Rwandan refugee camps in the United Republic of Tanzania. Best Practice Collection. 2003. www.unaids.org

Obtaining data

- UNAIDS/WHO. Guidelines for Sexually Transmitted Infections Surveillance. www.who.int
- Family Health International. Behavioral Surveillance Surveys: Guidelines for Repeated Behavioral Surveys in Populations at Risk of HIV. Arlington, FHI. 2001.
- Reproductive Health for Refugees Consortium. Refugee Reproductive Health Needs Assessment Field Tools. 1997. www.rhrc.org
- Reproductive Health Response in Conflict Consortium. Monitoring and Evaluation Tool Kit: Draft for field testing. 2003. www.rhrc.org

Delivering services

- Family Health International. Control of Sexually Transmitted Diseases: A handbook for design and management of programs. www.fhi.org.
- Family Health International. HIV/AIDS Prevention and Care in Resource-Constrained Settings. 2001. www.fhi.org

Drug supply management

- Management Sciences for Health. Managing Drug Supply. West Hartford. Kumarian Press. 1997.
- Manual of Reproductive Health Kits for Crisis Situations, 2nd edition, UNFPA, New York 2003.
- WHO. Guidelines for Drug Donations. 1996. www.who.int

Training and supervision

- CARE/Reproductive Health Response in Conflict Consortium. Moving from Emergency Response to Comprehensive Reproductive Health Programs. Module 7: STI/HIV/AIDS in comprehensive reproductive health programs. Draft for field testing. 2003.
- EngenderHealth. STI online minicourse. 2001. www.engenderhealth.org
- National STI Initiative, South Africa. Evaluating the quality of care for sexually transmitted infections using DISCA (District STI Clinic Assessment). Health Systems Trust. www.hst.org.za
- Teaching Aids at Low Cost (TALC). Sexually Transmitted Diseases. Slide set. www.talcuk.org

Increasing awareness

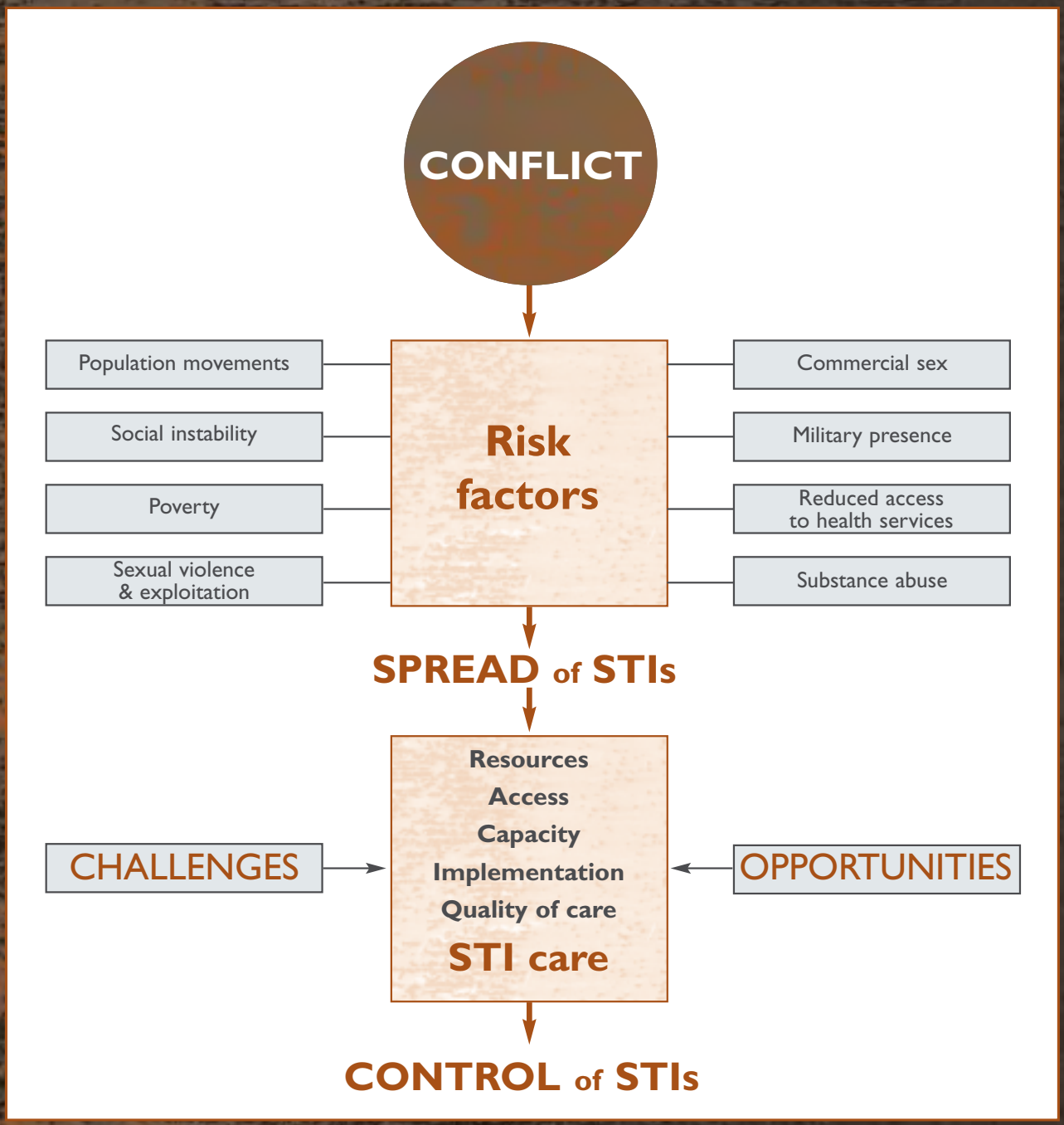
- FHI/AIDSCAP: Behavior change communication for the prevention and treatment of STDS. Community and clinic-based approaches for STD programs. www.fhi.org
- AIDSCAP. How to create an effective communication project. www.fhi.org

Targeting services

- Family Health International. Control of Sexually Transmitted Diseases: A handbook for design and management of programs. www.fhi.org
- International HIV/AIDS Alliance. Working with men, responding to AIDS. Gender, sexuality and HIV - a case study collection. 2003. www.aidsalliance.org

Further resources

- UNHCR/WHO. Clinical Management of Survivors of Rape (draft for field-testing). June 2002.
- UNAIDS/WHO. Male Condom Programming Fact Sheets. WHO/RHT/FPP/98.15 UNAIDS/98.12.
- UNAIDS/WHO. The Female Condom, A guide for planning and programming. WHO/RHR/00.8 UNAIDS/00.12E.
- WHO. Managing condom supply manual. Geneva. 1995. WHO/GPA/TCO/PRV/95.6.


CONFLICT
Population movements
Social instability
Poverty
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Risk factors
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CHALLENGES
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