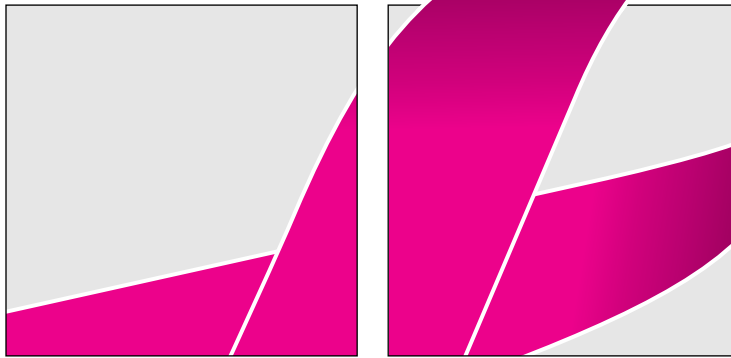


HIV/AIDS and STI prevention and care in Rwandan refugee camps in the United Republic of Tanzania



Joint United Nations Programme on HIV/AIDS

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Geneva, Switzerland
2003

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Background

Until recently, relatively little attention had been paid to HIV/AIDS care and prevention in the context of a humanitarian response. Traditional priorities in emergencies included the provision of food, water, sanitation, shelter and basic health services. Because of the long incubation period of HIV, the disease was not considered an immediate threat to life and was therefore not thought of as a 'relief issue'. Factors (such as poverty, social instability and powerlessness), typically associated with conflicts and the forced displacement of people, were already known to exacerbate HIV transmission. Until the catastrophic Rwandan refugee crisis of 1994, however, there was little appreciation of how very significant these factors were. Before that date, no major specific interventions for HIV infection or for other sexually transmitted infections (STIs) had been designed for refugees.

This monograph documents the first large-scale AIDS and STI intervention programme to be implemented during a refugee crisis. It describes the operational aspects of the intervention, the observed impact and the effect this experience had on policies and practices in other refugee situations, among both international and nongovernmental organizations. It provides insights into the elements and approaches for STI services that will be useful for reproductive health programme managers from government and international organizations as well as nongovernmental organizations involved in relief operations. It will also be useful for district or regional health managers in identifying needed support systems for STI service delivery.

HIV/AIDS and other sexually transmitted infections

HIV/AIDS has rapidly become one of the most devastating pandemics ever seen. Not only is it a major health problem, but it is also a development problem seriously threatening the economic and social fabric of many developing countries. UNAIDS estimates that close to 60 million people have been infected worldwide with HIV since the beginning of the pandemic, and that over 20 million have already died. HIV/AIDS disproportionately affects vulnerable individuals and communities. Some 90% of people who have contracted HIV are from developing nations. Several countries in sub-Saharan Africa have seen HIV prevalence rates of 20–40% among antenatal clinic attendees in urban areas. While sub-Saharan Africa is still by far the region most deeply affected by HIV/AIDS, the situation is becoming increasingly worrying in several Asian countries, including Cambodia, India, Myanmar and Thailand. Around the world, 16 000 new cases of HIV are estimated to occur daily, 10% of them among children, 50% among young people aged 15–24, and 40% among women.

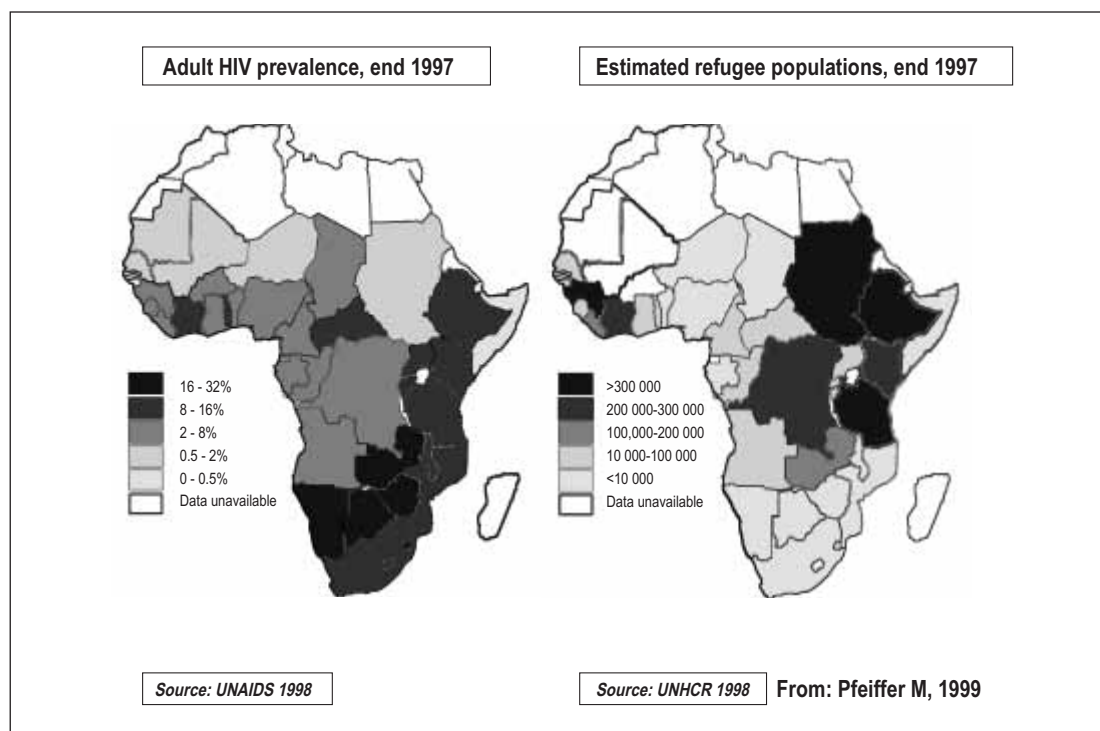
The epidemiology of HIV is similar to that of other sexually transmitted infections. WHO and UNAIDS estimate that 340 million¹ curable STIs occur annually worldwide among people aged 15–49, 85% of these cases in developing countries. STIs create an enormous burden of ill-health and economic loss. The greatest impact can be seen among women, in whom severe complications include pelvic inflammatory disease, chronic pain and serious complications in

¹ WHO (2001) *Global prevalence and incidence of selected curable sexually transmitted infections. Overview and estimates*. WHO: Geneva. WHO/HIV_AIDS/2001.02

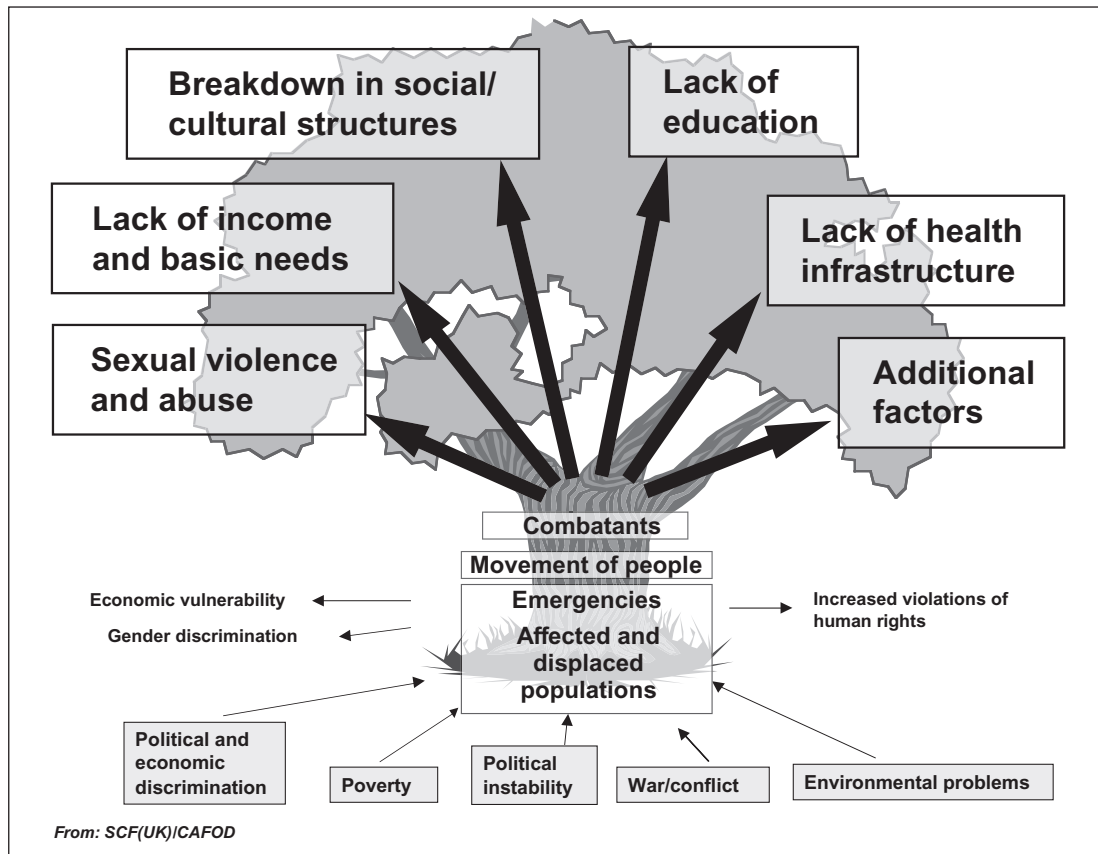
pregnancy. In both men and women, STIs play a major role in infertility, as well as in several malignancies, including cervical, anal and penile cancers and hepatocellular carcinoma. Furthermore, the enhancing effect of STIs on HIV transmission is now clearly established, and STI control has therefore assumed a renewed and urgent importance as a strategy for HIV prevention. It is estimated that a person with an untreated STI is up to 6–10 times more likely to pass on the infection or acquire HIV during sex. The risk of becoming HIV-infected from a single exposure is increased 10–300-fold in the presence of a genital ulcer.

The geographic regions where HIV and STIs occur, on the one hand, and refugee populations, on the other, quite clearly overlap. When the project was initiated in 1994, there were strong indications that STI and HIV prevalence rates among refugee populations in Africa were closely linked to the overall prevalence rates in the region. Figure 1, which compares the regional HIV prevalence rate with estimated refugee populations at the end of 1997, shows this relationship. STI control and treatment among refugee populations appeared to be an essential intervention and became a key objective of the UNHCR approach in the Rwanda setting. Furthermore, it has been estimated that roughly 40% of the UNHCR-assisted refugee populations in Africa and 60% in Asia are within the most sexually-active age range, namely 18–59, and are thus at greatest risk of sexual transmission of HIV and other STIs.

Figure 1: HIV prevalence: Africa region, and refugee populations, 1997



The socioeconomic and environmental factors that put refugees at increased risk of HIV infection and other STIs have only recently been fully recognized, though the evidence is still poorly documented (see Figure 2).

Figure 2: HIV risk and vulnerability factors in refugee settings

The 1994 Rwandan refugee crisis

During April 1994, in the wake of an internal genocidal conflict, an estimated 300 000 Rwandan refugees established themselves in two large camps in Ngara District, north-west Tanzania, near the border with Rwanda. Never before had so large a relief operation been undertaken in an area of high HIV prevalence. Refugees in this area existed in conditions that could greatly enhance the spread of HIV, including:

- family and social disintegration, with many separated and widowed adults
- poverty
- economic dependency
- a high level of violence, with the potential for sexual violence.

In addition, interactions (including sexual interactions, both of a commercial and non-commercial nature) between the refugees and local Tanzanian host communities presented a risk of HIV/STI transmission for those in and around the camps.

At this time, the epidemiological situation with regard to HIV and STIs among Rwandan refugees and their neighbours showed a great potential for the rapid spread of HIV, particularly given the mix of refugee populations. There were much higher prevalence rates of HIV infection among urban Rwandans (around 35%) than among rural Rwandans (5%) and the host populations of Ngara District in Tanzania (7%). STI rates were known to be high in both countries, with surveys among pregnant women indicating prevalence rates of 5%–10% for cervical infections with *Neisseria gonorrhoeae* or *Chlamydia trachomatis*, and prevalence rates of up to 40% for vaginal infections. The pattern of antimicrobial susceptibility of *Neisseria*

gonorrhoeae was also different between the two countries, with resistance to a larger range of antibiotics in Rwanda, including an emerging problem of quinolone resistance. Common antibiotics such as co-trimoxazole and erythromycin were still effective in north-west Tanzania and there was no resistance there to quinolone.

In the light of this situation, the African Medical Research and Education Foundation (AMREF) offered its services to UNHCR for an urgent HIV/AIDS and STI prevention programme. AMREF, an African nongovernmental organization (NGO), had already operated large HIV prevention programmes in Ngara District and had helped the Tanzanian Government set up STI services in primary health-care centres in the adjacent Mwanza region. The new programme was aimed at both Rwandan refugee camps and the surrounding Tanzanian communities. AMREF, in partnership with other Tanzanian institutions and the London School of Hygiene and Tropical Medicine, was also involved at the time in a large intervention trial measuring the impact of improved STI services on HIV incidence in the Mwanza region. Although the results of this trial only became known later, it was already becoming clear that the simplified approach to STI control that was being carried out in Mwanza might be appropriate for the refugee programme. Given the lack of experience, either on the part of the large international organizations or the other relief organizations, in dealing with HIV/AIDS and STIs in refugee situations, it was decided that AMREF would set up the programme, in partnership with the other agencies, carefully documenting the principal steps involved.

Objectives of the programme

The purpose of the programme was to establish an HIV/AIDS and STI prevention and care programme with multiple dimensions, with the overall aim of sharply decreasing the prevalence of STIs so as to ultimately bring down the incidence of HIV infection.

The programme's specific objectives were:

- to confirm the need for an HIV/AIDS and STI intervention, by means of a rapid situation analysis;
- to devise a training programme for HIV/AIDS and STI prevention and care;
- to implement HIV/AIDS and STI control activities in collaboration with other agencies;
- to monitor and evaluate the effectiveness and, if possible, the impact of the programme; and
- to document the process of establishing a large-scale HIV/AIDS and STI intervention programme during a refugee crisis, and to disseminate the findings.

Stages of the programme

The process by which the various stages of the HIV/AIDS and STI programme in Rwandan refugee camps were conducted is shown in Table 1. In brief, the programme consisted of three phases:

- Phase one: situation analysis;
- Phase two: intervention implementation and monitoring;
- Phase three: final assessment of the impact.

At the same time, there were efforts to coordinate essential services with other agencies.

Table 1. Components of AIDS and STI intervention in Rwandan refugee camps in the United Republic of Tanzania, 1994–1996

<p>Phase I</p> <p>Rapid needs assessment</p> <ul style="list-style-type: none"> ■ Review of policies, guidelines and health infrastructure ■ Rapid STI survey ■ Rapid 'knowledge, attitudes, beliefs and practices' (KABP) survey <p>Phase II</p> <p>The intervention package</p> <ul style="list-style-type: none"> ■ Information, education and communication (IEC) package, involving materials, mass campaigns, health promoters and peer educators ■ Condom supply and promotion ■ STI services ■ HIV/AIDS care <p>Monitoring</p> <ul style="list-style-type: none"> ■ STI clinic attendances and cure rates ■ <i>Neisseria gonorrhoeae</i> drug susceptibility monitoring ■ Quality control for rapid syphilis testing ■ Quality of STI services <p>Phase III</p> <p>Impact evaluation</p> <ul style="list-style-type: none"> ■ Repeat rapid STI and KABP surveys <p>Coordination, dissemination of results and advocacy</p> <ul style="list-style-type: none"> ■ Regular reports to, and coordination with, partners ■ Planning on a participatory basis with other NGOs and local communities ■ Dissemination of research findings through reports, scientific and other publications, conferences and workshops ■ Long-term support to NGOs through training and development of case studies, policies and guidelines

Phase I: Rapid situation analysis

The initial situation analysis consisted of five components:

- A *literature review* of the epidemiological situation of STIs and HIV in Rwanda and north-west Tanzania, with particular reference to Ngara District.
- A *stakeholder analysis*, including interviews with key people, to obtain an overview of policies and practices with regard to HIV/AIDS and STI prevention and care, and to identify shortcomings in existing STI training and the provision of drugs for STIs.

- *A review of care facilities* in the camps for STIs and HIV infection, and a review of the health information system, including STI statistics, in the camps.
- *A rapid STI survey* conducted among:
 - a systematic sample of 100 antenatal clinic attendees;
 - a systematic sample of men from each outpatient department clinic over two camps (totalling between 200 and 300 men);
 - a random sample of about 300 men living in the community, selected through a multistage cluster sampling frame (see Appendix 1).
- *A rapid 'knowledge, attitudes, beliefs and practices' (KABP) survey*, conducted among a random sample of men and women from the community. This research was undertaken by two NGOs—CARE and John Snow Incorporated—with support from AMREF. A combined approach was used. First, a series of focus group discussions determined the main topics to be examined and revealed the terminology that was used locally for HIV/AIDS and STIs. This was complemented by a community-based survey, in which a structured standardized questionnaire was administered to participants in the sample.

Stakeholder analysis

The stakeholder analysis was undertaken in the very early stages of the refugee crisis, when only the medical NGOs and international organizations were present in the camps. All the medical and other coordinators of the main organizations were interviewed in depth. These organizations included: the African Education Fund, CARE, the International Rescue Committee, *Médecins Sans Frontières* (of France, the Netherlands and Spain), the Tanzanian Red Cross (the only agency providing antenatal and maternal-and-child-health services), UNHCR and UNICEF. Information on the NGOs' policies and guidelines was obtained in meetings between June and August 1994, and their possible collaboration in a joint programme was discussed. Subsequently, an informal 'reproductive health coordination committee' was set up to include all the NGOs involved in delivering reproductive health care. This forum was later joined by several other agencies, including Population Services International, the agency operating condom programmes.

In addition, there were discussions with the director of Murgwanza Hospital and the District Medical Officer of Ngara District, who were responsible for medical services for the Tanzanian population in the catchment area of the camps, as well as for Rwandan refugees who required care not provided by a relief NGO—for instance, for tuberculosis.

None of the agencies involved in refugee care or in relief operations at the time had a well-defined policy on care for those with HIV/AIDS or STIs. Guidelines for AIDS prevention merely recommended strict adherence to universal medical precautions for staff involved in care, and the screening of blood before transfusion.

Survey of health facilities

The health facility survey confirmed the complete lack in the area of specific STI guidelines, of specific efficacious drugs for STIs and of appropriate STI training among health staff in the camp clinics.

Clinic charts revealed not only the absence of systematic reporting of STIs, but also a likely gross under-reporting of cases. An average of only 20 cases per week had been recorded

in an estimated population of 150 000 people in the sexually-active age group—an annual incidence of 0.7 per 100 person-years. At the same time, the rapid STI and KABP surveys, as well as information from participants, confirmed the widespread presence of alternative STI care providers, such as traditional healers and market vendors.

Rapid STI surveys

The important elements in a rapid STI survey in the midst of a refugee crisis were that it had to:

- be very rapid;
- provide enough information to plan effective interventions;
- bring in agencies operating clinical services; and
- be cheap, if possible.

Rapid surveys to estimate key health needs have been used in different settings, including refugee settings. Advantages and disadvantages of a rapid survey approach are shown in Table 2.

Table 2. Advantages and disadvantages of STI rapid assessment

Advantages	Disadvantages
<ul style="list-style-type: none"> • needs-oriented • rapid and relatively inexpensive • mobilizing/involving • well perceived by communities /NGOs 	<ul style="list-style-type: none"> • lower degree of validity • scientific expertise and data-gathering technical back-up needed • demanding in terms of logistics and time

For this first rapid STI survey during a refugee crisis, the methodology used by Porter and colleagues in Kurdish refugee camps was adopted. Techniques and procedures of this methodology are described in Appendix 2.

Previous rapid STI surveys undertaken in stable situations, including in Senegal and Uganda, have indicated that the key indicators to be collected should be:

- STI symptoms;
- STI signs;
- the prevalence of laboratory-confirmed STIs;
- data on treatment-seeking behaviour;
- data on sexual behaviour; and
- the extent of commercial sex.

In general, these indicators should be gathered from representative samples of the general male and female populations and from specific groups where interventions might usefully be targeted, such as commercial sex workers, pregnant women attending antenatal care clinics or men in certain high-risk occupations, such as the military. In the case of a refugee setting, it was decided to obtain representative samples of the general population and of people who made use of clinical services, and for whom simple clinic-based STI services could be offered.

Methodology

Study populations and design

Three groups of patients were included in the surveys conducted in 1994 and 1996:

1. A systematic sample of men attending outpatient department clinics. The sample size was calculated so as to obtain 40 men from each of the six outpatient departments in operation.
2. A systematic sample of women attending the antenatal care department operated by the Tanzanian Red Cross in Benaco camp, the largest of the camps.
3. A random sample of men living in the community. A multistage cluster-sampling technique, similar to that used in rapid community estimates of vaccine coverage or in nutrition surveys, was used. It was considered too difficult to conduct the same study among women, because of the privacy required for clinical examinations.

Collection of samples and laboratory testing

All subjects were interviewed in the Kinyarwanda language using a structured, standardized questionnaire, with different questionnaires for men and women.

At the antenatal care clinic, women underwent a full gynaecological examination. Vaginal and cervical specimens were collected for the purposes of diagnosing:

- *Trichomonas vaginalis* and *Candida albicans*, using direct wet-mount microscopy;
- bacterial vaginosis, by microscopy of a gram-stained vaginal smear;
- *Neisseria gonorrhoeae*, by culture and cervical gram-stained smear; and
- *Chlamydia trachomatis*, by enzyme immuno-assay.

Specimens were immediately processed in the field. *Neisseria gonorrhoeae* agar plates were incubated in candle-extinction jars and *Chlamydia trachomatis* specimens were kept refrigerated in coolboxes. A blood specimen from the veins was likewise collected.

All men, both at outpatient department clinics and in the community in general, underwent an examination that included 'milking' their urethra. They were also asked to provide a first-void urine sample, which was tested immediately for the presence of pus cells, using a leukocyte esterase dipstick. Men who complained of dysuria or discharge, those for whom a discharge was elicited during examination, and those with a reactive leukocyte esterase test were further sampled. This was carried out with two urethral swabs—one for a gram-stained smear for the diagnosis of *Neisseria gonorrhoeae* and biological urethritis, and one to diagnose *Chlamydia trachomatis* using an enzyme immuno-assay. Blood samples from the veins were collected from men attending outpatient department clinics only.

A field laboratory was set up at Murgwanza Hospital and specimens were further processed or stored at the end of each working day. *Neisseria gonorrhoeae* plates were streaked and incubated in candle-extinction jars and placed in an incubator for 48 hours at 35°C and in an atmosphere of 5–10% CO₂. Smears were fixed and, together with serum samples and *Chlamydia trachomatis* samples, were shipped at the end of the survey to Mwanza, for testing in the STI reference laboratory of the National Institute for Medical Research.

Syphilis serology was performed using both *Treponema pallidum* haemagglutination assay (TPHA) and Rapid Plasma Reagin tests on all samples. Dually reactive sera were considered to have active syphilis.

Results

Results of the STI and KABP surveys are summarized in Box 1 on page 16.

Ethical considerations

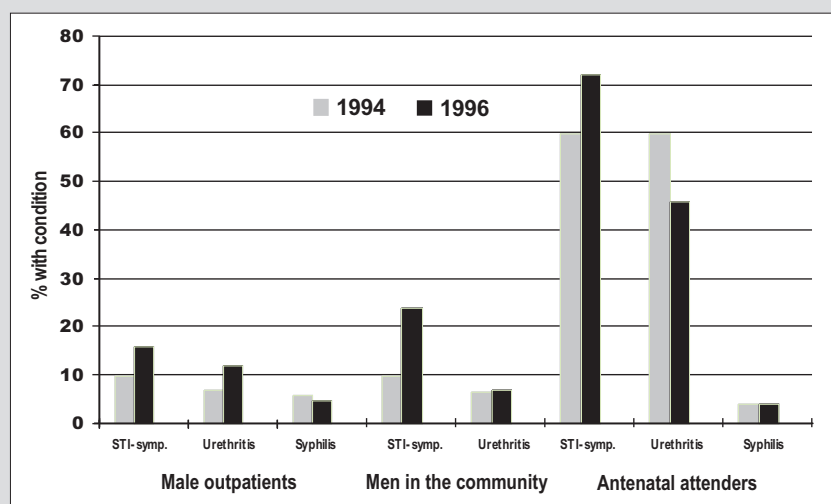
The ethical guidelines of the London School of Hygiene and Tropical Medicine were followed in drawing up this survey, which was also approved by community leaders, the UNHCR authorities and local NGO coordinators.

All potential participants were informed about the study and written consent was sought in advance. All patients complaining of symptoms associated with STIs were treated on the spot with drugs covering the relevant STI syndrome. In addition, men with a positive leukocyte esterase test were also treated for *Neisseria gonorrhoeae*, *Chlamydia trachomatis* and non-specific urethritis. Regarding syphilis, antenatal care patients and men attending the outpatient department from whom blood samples had been collected were given an appointment to return to the same clinic after two weeks to collect their syphilis serology results. Coded results and the prescribed treatment were made available to clinic staff within that period. According to the clinic charts, 90% of patients needing treatment for syphilis presented themselves and received a single dose by injection of benzathine penicillin.

Box 1: Key findings of the rapid STI and KABP surveys

- The rapid STI and KABP surveys revealed essentially similar findings. Men and women reported frequent experience with STIs, with around 10% having experienced genital discharge or genital ulcer syndromes in their lifetime. About 2.5% of both men and women reported having had some of these syndromes over the previous three months, covering the period between fleeing their homes and settling into the camps.
- Men reported risky sexual behaviour before the exodus, with 10% indicating they had paid for sex at some time in their lives. There was, however, a marked reduction in sexual activity during the actual period of exodus and establishment of the camps. Despite a high level of knowledge of the risks for HIV infection and how to prevent it, and self-assessment of risk, only 16% of men admitted using condoms during casual sex. This appeared to be partly because of various myths surrounding the use of condoms. Although AIDS was generally acknowledged as a serious problem in the community, it was also very negatively perceived, as a stigmatizing condition.
- As could have been predicted, high levels of STIs were recorded. Nearly 60% of women attending antenatal care clinics were infected with vaginal pathogens (*Trichomonas vaginalis* 31%, *Candida albicans* 27%, bacterial vaginosis 16%), with several women having multiple infections. Three per cent of women were infected with gonorrhoea, but no chlamydial infection was detected. The prevalence of biological urethritis was about 10% in men, of whom one third (3% of all men) had a gonorrhoeal or chlamydial infection, or both. The prevalence of active syphilis (defined as seroreactive sera for both TPHA and Rapid Plasma Reagin) was 4% among women and 6% among men (see Figure 3).
- The STI survey also revealed little overall correlation between symptoms and signs of STIs and STI infections, highlighting the known difficulty of controlling STIs. A number of symptoms and signs could be related to poor personal hygiene caused by a lack of bathroom facilities, including the high prevalence of male balanitis (inflammation of the head of the penis). Among men and women attending clinics, however, there was a better correlation between STI symptoms/signs and STI infections. This finding supported the idea that a syndrome-based approach was likely to be useful in dealing with patients' complaints. At the same time, it was recognized that alternative sources of STI care already existed in the community and that self-medication for genitourinary complaints was, unfortunately, likely to be common.
- Both surveys showed that HIV/AIDS and STI interventions were acceptable to the community, particularly as they gave people increased access to STI services.

Figure 3. Rapid survey results



Phase II: Intervention implementation

The HIV/AIDS and STI intervention programme was launched four months after the start of the Rwandan crisis in August 1994, and consisted of five components:

- **Information, education and communication (IEC).** Health education materials—posters, leaflets and billboards—were designed and produced in the Kinyarwanda language. In collaboration with influential members of the community, health behaviour promoters carried out regular mass education campaigns on HIV/AIDS and STIs. Some 120 such campaigns were conducted over 18 months, reaching about 230 000 sexually-active people.
- **Peer education.** Individuals working in the many bars and unofficial brothels in and around the camps were recruited and trained to deliver HIV and STI prevention messages to their fellow workers and their customers, as well as to distribute condoms.
- **Condom programme.** Condoms were supplied at various outlets, including clinics. During educational campaigns, there was also a strong drive to distribute condoms. Over the period of the intervention, condom demand increased substantially. In the first 12 months alone, 1.5 million condoms were distributed, around a half of these through peer educators.
- **The STI intervention proper.** This involved:
 - producing *STI guidelines* and an *STI training manual*;
 - training and supervising health workers to manage STI cases (see Box 2), using the *syndromic* approach at all outpatient clinics;
 - assessing the need for STI drugs and procuring them;
 - setting up STI prevention programmes for pregnant women, by means of *rapid syphilis-screening* services at antenatal clinics (see Box 3), and developing case-finding *strategies for cervical infections*;
 - *preventing Ophthalmia neonatorum* in newborn babies, by a systematic administration after delivery of antibiotic eye ointment in the eyes of the babies (see Box 4).
- **Community education and support programme for AIDS patients.** This consisted of home-based care and counselling, provided by a network of AIDS community educators recruited from the refugee population and trained by CARE, and by a network of health information teams.

Box 2: Training on STIs

An STI training manual was developed for a 'crash course' in STI case management, applying the broad principles and materials used by AMREF in its own courses for Tanzanian workers. The content of the course was modified so as to fit a five-day programme—the maximum time for which most NGOs could afford to release their workers for training.

Topics included the public health importance of STIs, the main STI syndromes and their features and management, counselling and condom promotion, the practical organization of clinic services and the recording of STI cases.

Courses (with up to 20 health workers at a time) adopted a participatory approach, with problem-solving exercises, case studies, demonstrations and role-plays. The sessions were held initially in English and French but, later, as trainers were trained and materials were translated, French and Kinyarwanda were the only languages used. (Most Rwandan health workers have a good knowledge of French.)

Four training courses were held during the 18-month programme. The aim was to train at least two health workers from each care-providing site. Because of the frequent turnover of staff, the arrival of new NGOs and the expansion of health services in several camps, training courses had to be provided periodically. In addition, refresher courses of one-to-three days in duration were held six months after the initial training.

Box 3: Syphilis control

Maternal syphilis infection is a condition that can lead to very serious complications during pregnancy. If untreated, up to an estimated 60% of pregnant syphilitic women will experience major setbacks such as spontaneous abortion, stillbirth, premature birth or congenital abnormalities.

Screening and treatment of maternal syphilis clinics were shown to be feasible, inexpensive and highly cost-effective in a pilot programme in Lusaka, Zambia. Researchers in Nairobi, Kenya also demonstrated the feasibility and cost-effectiveness of a decentralized programme of syphilis screening involving nurses trained in education, counselling and the provision of on-site testing using the Rapid Plasma Reagin test. A similar approach, developed by AMREF in the Mwanza region, was introduced in the antenatal care clinics in the Rwandan refugee camps.

Routine screening for syphilis was based on the use of the non-specific Rapid Plasma Reagin test. This test is rapid and cheap, and several sera can be tested on the same card.

One or two nurses from each clinic with antenatal care services were trained by a senior laboratory technician from AMREF in a two-week course. Regular supervision was carried out. Treatment of those with positive serology was effected by a single intramuscular injection of 2.4 mega units of benzathine penicillin, according



to WHO guidelines. Where possible, sexual partners were notified and offered treatment. Results were recorded on the patients' cards and in a log book. In order to monitor the quality and validity of the Rapid Plasma Reagin testing, sera were kept in freezers.

Trained traditional birth attendants in the area were informed of the programme and encouraged to publicize the syphilis screening and impress on women the need for treatment. Maternal-and-child-health workers were also instrumental in persuading pregnant women to attend antenatal care services to be tested and treated, where necessary.

Box 4: Prevention of Ophthalmia neonatorum

Bacterial infection of the maternal genital tract frequently results in infections in the newborn baby. These infections usually affect the eyes and lead to more or less severe conjunctivitis, known as *Ophthalmia neonatorum*. The condition occurs within a few days of delivery and up to the age of one month. *Ophthalmia neonatorum* is a serious condition. If treatment is delayed, the condition can result in major scarring of the cornea or perforation of the globe of the eye, leading to blindness. The most important sexually transmitted causes of *Ophthalmia* at birth are gonorrhoea and *Chlamydia*, which, if present in the maternal genital tract, can be transmitted in up to 40–50% of cases to babies during vaginal delivery.

Case finding of cervical infections during antenatal care in the camps relied on syndromic management of women complaining of abnormal vaginal discharge. Since more accurate methods of case finding and the option of a Caesarean section when delivering mothers with suspected cervical infections were not available in the camps, the control of *Ophthalmia neonatorum* relied on prophylactic measures taken at delivery.

When women were delivered in supervised conditions (in clinics or by trained maternal-and-child-health workers) the recommendation was to clean the eyes of newborn babies immediately after birth with saline and cloth and to introduce a prophylactic agent into their eyes so as to prevent *Ophthalmia neonatorum*. A single dose of 1% tetracycline or 0.5% erythromycin ophthalmic ointment was used. All staff members performing deliveries, including maternal-and-child-health workers, were trained in this practice, which had, in fact, been recommended in the standard guidelines for this condition in Rwanda even before the crisis.

In addition, treatment guidelines for suspected cases of *Ophthalmia neonatorum* were included in the STI training curriculum. Every suspected case (where bilateral conjunctivitis developed within a month of delivery) received 50mg/kg/day of erythromycin orally in four divided doses for 10 days. Where possible, the mother and her sexual partner(s) were also treated using drugs for *Neisseria gonorrhoeae* and *Chlamydia trachomatis*.

A monitoring system was put in place at clinics but, in fact, few cases of *Ophthalmia neonatorum* were reported.

Phase III: Assessment of the programme

Monitoring of the programme was carried out using indicators collected either routinely or through specific surveys. The impact of the STI programme was assessed through a repeat of the rapid STI and KABP surveys, 18 months after the start of the HIV/AIDS/STI programme (see Tables 3a and 3b). Indicators were identified at three levels: those of process, quality and impact.

Table 3a *General indicators for performance of HIV/AIDS and STI intervention in Rwandan refugee camps in the United Republic of Tanzania, 1994–1996*

<p>Process indicators</p> <ul style="list-style-type: none"> ■ Number of units offering STI services, and STI coverage ■ Training manual developed ■ Number of staff trained, and coverage ■ Number of people presenting with STIs, by syndromes <p>Health education materials developed</p> <ul style="list-style-type: none"> ■ Number of IEC campaigns conducted ■ Number of health behaviour promoters trained <p>Quality indicators</p> <ul style="list-style-type: none"> ■ Clinical cure rates ■ Partner treatment rates ■ <i>Neisseria gonorrhoeae</i> antibiotic susceptibility (E-test) <p>Impact indicators</p> <ul style="list-style-type: none"> ■ Rapid STI surveys ■ Rapid KABP surveys

Table 3b Programme indicators for performance of HIV/AIDS and STI intervention in Rwandan refugee camps in the United Republic of Tanzania, 1994–1996

INTERVENTION AREAS	PROCESS INDICATORS	QUALITY INDICATORS	IMPACT INDICATORS
STI care			
Training	Training manual developed; number of training sessions held; number of health workers trained.		
Services	Number of units providing STI services; number of units providing syphilis screening; number of units providing <i>Ophthalmia neonatorum</i> prevention at birth.	STI attendance rates (syndromic); percentage of eligible mothers (i.e., those meeting certain criteria defined by health services in camps) in antenatal care screened for syphilis; percentage of syphilis-positive mothers treated; percentage of deliveries in health units where prophylaxis is applied.	Clinical cure rates; gonorrhoea surveillance; quality control of syphilis; rapid STI surveys
HIV and STI prevention			
Condoms	Number of condom dispensers; number of condoms given out; number of condom promotion events held; number of condom promotional materials distributed		Condom use
IEC	IEC messages and health education materials developed and distributed; number of IEC campaigns held	Number of people attending health services	Improved knowledge (KABP)
Other	Universal precaution guidelines developed; number of health units implementing universal precaution guidelines; blood units screened.		Reduced number of new HIV/STI infections
HIV/AIDS care	Number of HIV/AIDS cases identified; Number of people tested for HIV.		Number of opportunistic infections treated

State-of-the-art impact evaluation would have required elaborate epidemiological and behavioural surveys with larger sample sizes, performed on cohorts before and after intervention implementation and compared with the situation in a 'control' population. For ethical and financial reasons, such an impact evaluation was clearly not possible in the context of a refugee crisis. Instead, it was decided to measure and cautiously interpret trends in key indicators using repeated rapid surveys.

Even though these surveys did not reveal apparent dramatic changes in the reported rates of STI and sexual behaviour, the situation could have been considerably worse in the absence of any intervention. At the end of 1996, the population of Ngara camps was repatriated to Rwanda. Soon thereafter, a national HIV serosurvey was conducted among 4800 people in Rwanda, which showed that the overall prevalence of HIV was 11.1%; it was highest among internally-displaced people (13.9%), compared to people who had been displaced in camps outside the country (10.5%), and lowest among returning long-term exiles (9.7%). It appeared that the lowest rates among external refugees were noted among those returning from Tanzania, compared with those from Zaire or Burundi (Michel Caraël, UNAIDS, personal communication), thus providing indirect evidence of the role that uncontrolled situations in refugees camps may have in fuelling the HIV/AIDS epidemic. These results and the lack of increase in STI rates in the refugee population from Tanzania may, in fact, indicate a mitigation of effect of the HIV/AIDS epidemic through the intervention programme.

The results

Overall, the programme was most effective in terms of STI interventions, with the following results:

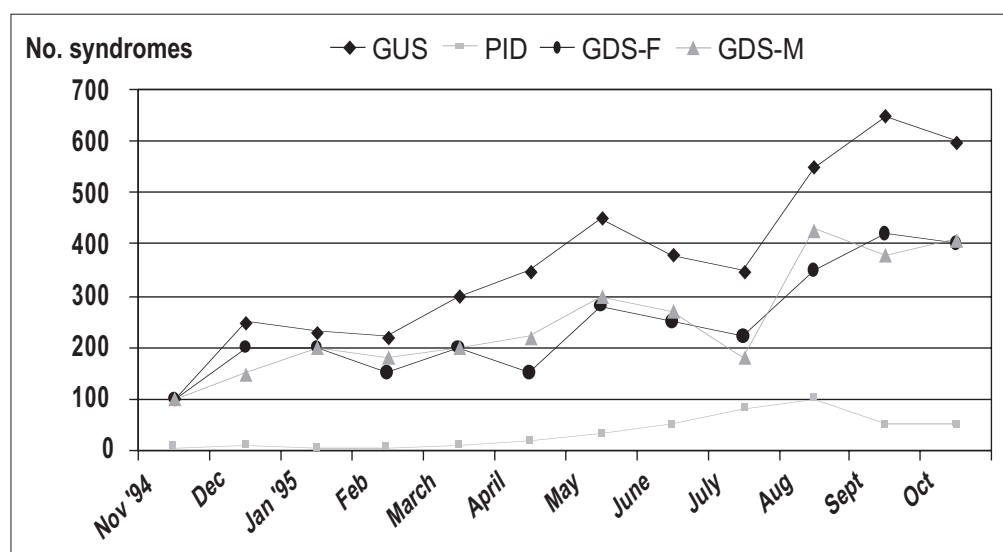
■ Increased STI cases presenting at clinics

By the end of the intervention, the number of reported STI syndromes at clinics had increased markedly, from 20 to about 250 per week—equivalent to an annual incidence of 8.6% (see Figure 4). Over 11 000 STI cases were treated in the first year of the programme. The leading syndrome was genital ulcer syndrome (GUS) (4409 cases), followed by genital discharge syndrome in men (GDS-M) (3099), genital discharge syndrome in women (GDS-F) (3049) and cases of suspected pelvic inflammatory disease (PID) (484).

An important component of STI case management is the notification and management of sexual partners of STI patients. Clinic records did not rigorously monitor partner treatment rates, and only a crude measure of contact tracing rate was made. Over an 11-month period in 1996, 2571 contacts and 7485 STI index cases were treated, providing an aggregated contact tracing rate of 34%.

■ Improved STI cure rates

The clinical efficacy of syndromic algorithms was monitored by routinely asking patients to return for a check-up a week after the start of treatment, and through a rapid survey of men with male genital discharge syndrome, in outpatient clinics in five of the camps.

Figure 4: Patterns of STI syndromes in year one

Overall, there was a 70% cure rate of genital discharge syndrome in men, following first-line treatment. There was anecdotal evidence that many genital ulcers could be diagnosed clinically as genital herpes—a condition not attacked by antimicrobial syndromic treatment and prone to relapses in an environment of high HIV prevalence. In general, therefore, despite a more rational and improved STI case management, there were indications that cure rates were less than optimal.

■ **Monitoring of gonococcal resistance**

Forty-five strains of *Neisseria gonorrhoeae* were collected during the survey on STI cure rates. Using simplified minimum inhibitory concentration techniques previously validated in Africa, the pattern of antimicrobial resistance was determined. Multidrug-resistant gonococcal strains were observed as follows:

- 15% of strains were resistant to co-trimoxazole, the first-line drug used in the algorithms;
- 60% of strains were resistant to penicillin; and
- 98% of strains were resistant to tetracycline.

This differed from the situation in Mwanza, where resistance to co-trimoxazole increased from 2% in 1992 to only 5% in 1996.

■ **Quality control of syphilis serology testing**

A quality-control exercise of the routine Rapid Plasma Reagin testing that took place at antenatal clinics was carried out. This was done by re-testing with Rapid Plasma Reagin and confirming the result with the *Treponema pallidum* haemagglutination assay on 600 stored sera from all antenatal clinics in the camps.

■ **Pre/post-STI intervention data**

Results from the 18-month follow-up STI survey showed little decrease in the levels of urethritis among men or in the levels of cervical infections among women attending antenatal care clinics. However, the prevalence of vaginal infections had decreased by 25% and the prevalence of syphilis remained at low levels.

Sexual behaviour patterns did not appear to have changed greatly in this population, with possibly even an increase in the volume of commercial sex, and with worrying levels of sexual violence, particularly against women and young people.

Using the results to influence policy and improve practice

Documented information was made available to policy-makers, relief agencies and other concerned organizations:

- immediately after each survey, with appropriate feedback;
- during the implementation of the programme;
- during subsequent refugee crises in Burundi and Zaire;
- on a long-term basis after the Rwandan crisis, as a means of assisting in the training and institutional development of NGOs; and
- on a long-term basis, to help develop guidelines, policies and a range of training courses for relief agencies and other concerned nongovernmental and governmental organizations; in particular, the documentation fed into the initial production and subsequent review of the UNHCR-sponsored Interagency Reproductive Health Field Manual.

Advocacy efforts for HIV/AIDS and STI programmes in refugee crises, using the experience of the Rwandan crisis, were carried out in various ways. During the crisis itself, immediate feedback was provided to international agencies after each survey. This ensured the widespread dissemination of research findings, leading to recommendations for STI service delivery and drug provision.

In the longer term, research findings were published in scientific journals and in the lay press, and were given wide publicity at international gatherings, including AIDS and STI conferences. Guidance documents in the form of the *Interagency Reproductive Health Field Manual* and background materials on specific issues were produced for the use of NGOs. The material was also vital for the working group on AIDS and Refugees set up in 1995 by the UK NGO AIDS Consortium, and for the two international seminars on the topic organized by this working group. Following the Rwandan crisis and the Tanzanian experience, a number of international organizations and NGOs have included explicit policies on HIV/AIDS and STI case management. In addition to UNHCR, the International Federation of the Red Cross and Red Crescent Societies and CARE produced their own manuals. The documents have generated further guidelines from the *Médecins Sans Frontières* (MSF) in the form of STI guidelines (the Netherlands), HIV/AIDS policy document (Belgium), and capacity-building courses (Switzerland).

Summary and recommendations

Refugee populations are frequently exposed to an increased risk of STIs, including HIV—something not fully appreciated by relief agencies before the Rwandan crisis. STI control can contribute substantially to reducing HIV transmission in places where these infections are prevalent. Comprehensive reproductive and sexual health services, including HIV/AIDS and

STI prevention and care, should therefore be initiated in the early stages of a refugee crisis. The precise nature of the response will vary throughout the different stages of a refugee crisis, but should be based on the Minimum Initial Services Package (MISP)²—a concept developed after consultations between operating NGOs, research institutes and international agencies, including UNHCR.

The MISP contains the key elements of an STI programme in refugee situations, namely:

- IEC, to inform people and encourage them to attend clinics promptly;
- condom promotion and distribution;
- STI case management using the WHO syndromic approach; and
- prevention of congenital syphilis and *Ophthalmia* at birth.

In a refugee crisis, traditional camp clinics will be required to modify their usual arrangements to accommodate STI services. STI treatment guidelines should be developed and an estimate made of drugs needed for immediate symptomatic STI cases presenting at clinics. STI algorithms and the particular choice of effective drugs should be tailored to the prevailing circumstances and their effectiveness monitored. An STI training curriculum should be designed, and training rapidly provided for as many health workers as possible from all existing clinics.

Efforts should focus also on how to reach vulnerable groups in the community, including young people, single women and people living with HIV/AIDS. Care of HIV/AIDS patients should be conducted with sensitivity, and community education carried out to counter stigmatization of the disease.

Monitoring STI programmes in refugee situations should rely on simple indicators such as STI syndrome load, through syndrome reporting. Regular surveys should be conducted to estimate clinical cure rates and the antimicrobial susceptibility of gonorrhoea. Rapid situation surveys may provide immediate and useful information at a low cost in the refugee camps, but such surveys should be refined and combined with other programme indicators measuring the process and quality of services. The impact of specific interventions on the health status of refugees cannot be easily measured—an area that requires further research.

Converting research and experience from past refugee crises into policy and practice for future crises is a more difficult task, though there were successes in this area, thanks to the experience with the Rwandan crisis. A significant achievement from that humanitarian tragedy was the adoption of a Minimum Initial Services Package.

² MISP is a set of activities designed to respond to the reproductive health needs of populations in the early phase of a refugee situation and include:

- collection of basic demographic information
- prevention and management of consequences of sexual and gender-based violence
- prevention of HIV transmission (through implementation of universal precautions and condom promotion and distribution programmes)
- prevention of excess neonatal and maternal morbidity and mortality

Appendix 1.

The community survey sampling technique

In order to ensure that a representative sample was selected for surveys, a multistage random cluster sampling frame was used, as described below.

■ **First-stage cluster**

The two camps were divided into zones, using existing UNHCR maps with the roads as grids. The number of zones to be selected was proportional to the population of the camps. Four zones were chosen in the larger Benaco camp with a population of 200 000, and two zones in Lumazi camp with an estimated population of 100 000. Within each camp, each zone had an equal probability of inclusion.

■ **Second-stage cluster**

Each zone was already divided into 10–12 administrative sectors, which were numbered. For each of the randomly-selected zones, a sector was randomly selected by lottery.

■ **Third-stage cluster**

Within each selected cluster, a suitable working site for examination was identified, with the help of the relevant community leader. From this central location, each of four field workers then picked a direction based on the random throw of a pencil, walked for 50–100 strides and entered the fourth tent or dwelling on their right side to begin the household survey. Seven households were included by each field worker, who turned left after each household survey completed. All men aged 15–54 living in these households were eligible for the survey. A household was defined as a self-contained family unit and, in certain situations, there was more than one tent or dwelling. The number and definition of household members were ascertained by asking the head of the family unit.

There were two-to-three eligible men per household, with 24 clusters or 168 households, producing some 330–500 eligible men. With an estimated coverage of 60%, this gave a sample size of 200–300, considered adequate for estimating STI prevalence.

Appendix 2.

Conducting the STI survey

■ **Preparatory meetings**

Preliminary individual meetings were held with UNHCR and representatives of all nongovernmental and international organizations operating in the refugee camps. A general presentation was held during one of the regular interagency coordination meetings.

A second planning meeting was held with those NGOs providing clinical services in the camps. This was important for two reasons:

- to obtain technical and logistical collaboration for access to clinics and patients, and for staff to be provided to help undertake the study;
- to involve NGOs from the very beginning of the research, since these NGOs would, ultimately, be required to implement the recommendations arising from the study.

Further meetings were held with community leaders in the camps themselves. These meetings aimed to:

- inform community leaders about the HIV/AIDS and STI programme and the preliminary rapid STI study;
- obtain the support of community leaders in the field survey and gather information for the needs-assessment exercise; and
- decide on the random allocation of clusters to be surveyed by community leaders.

Assembling survey teams

■ The antenatal care survey team

This team consisted of two experienced female AMREF researchers. A female Rwandan Red Cross social worker was subsequently added to the team to conduct the interviews in Kinyarwanda. The two Tanzanian workers carried out examinations and genital sampling, took blood and processed specimens. This processing included immediate microscopy for the diagnoses of *Trichomonas vaginalis* and *Candida albicans* and centrifuging blood specimens.

■ The male outpatient department team

Two clinicians were selected from each of six clinics by the NGO supervisors and were attached to AMREF for the entire duration of the survey. This included two days of training on methodology, use of questionnaires, genital sampling and urine testing, as well as training on the use of STI drug protocols. The survey was carried out simultaneously for four days in each clinic.

■ The male community team

Four pairs of community interviewers, two clinicians and a team leader were recruited. Some of these field workers had been seconded by other NGOs for the duration of the survey, while others were recruited specifically for this purpose.

In accordance with UNHCR rules, none of the field workers was paid in cash, but donations in kind were arranged.

Schedule and feedback

Preparations of some of the survey methods and preliminary contacts were carried out during July 1994. The rapid STI survey was conducted on 1–12 August 1994.

The training of teams and finalizing the survey methods took two-to-three days.

Surveys were carried out simultaneously in the antenatal care clinic and six outpatient department clinics in both camps, and each day for four days in a different community site within one camp, shifting to the smaller camp for another two days. Multisite supervision, coordination and logistics were organized by a central team of three individuals with two cars.

Within eight days, fieldwork was completed and an interagency meeting was organized so that feedback could be obtained. Preliminary results and an account of the survey process were presented. Two weeks later, the syphilis serology results were supplied to the clinics.

Within four weeks, a report and recommendations were produced and the results of the survey presented at another interagency meeting. Preparations were then made for the rapid KABP survey. The HIV/AIDS and STI programme proper began the following month.

The total budget, excluding AMREF and National Institute for Medical Research salaries, came to US\$3000.

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The Joint United Nations Programme on HIV/AIDS (UNAIDS) brings together eight UN agencies in a common effort to fight the epidemic: the United Nations Children's Fund (UNICEF), the United Nations Development Programme (UNDP), the United Nations Population Fund (UNFPA), the United Nations International Drug Control Programme (UNDCP), the International Labour Organization (ILO), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Health Organization (WHO), and the World Bank.

UNAIDS, as a cosponsored programme, unites the responses to the epidemic of its eight cosponsoring organizations and supplements these efforts with special initiatives. Its purpose is to lead and assist an expansion of the international response to HIV/AIDS on all fronts. UNAIDS works with a broad range of partners—governmental and nongovernmental, business, scientific and lay—to share knowledge, skills and best practices across boundaries.

Until recently, relatively little attention had been paid to HIV/AIDS care and prevention in the context of a humanitarian response. Traditional priorities in emergencies included the provision of food, water, sanitation, shelter and basic health services. Because of the relative invisibility of HIV/AIDS, the disease was not considered an immediate threat to life and was therefore not thought of as a 'relief issue'.

This document examines the first large-scale HIV/AIDS/STI intervention programme to be implemented during a refugee crisis. It describes the intervention's operational aspects, the observed impact and the effect this experience had on practices in other refugee situations, among both international and nongovernmental organizations (NGOs). It provides insights into the approaches for STI services that will be useful for reproductive health programme managers, as well as NGOs involved in relief operations. It will also be useful for district or regional health managers in identifying needed support systems for STI service delivery.



Joint United Nations Programme on HIV/AIDS

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