

HIV Risk and Prevention in Emergency-affected Populations: A Review

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While basic guidelines on HIV prevention in emergencies have been available for several years, international agencies involved in the provision of health services have not placed sufficient priority on the prevention of the human immune deficiency virus (HIV) and other sexually transmitted infections (STIs) in complex emergencies. This paper reviews the factors that may increase the risk of HIV transmission in populations affected by complex emergencies and outlines recommendations for research and programmes. Research into the most appropriate methods of carrying out HIV surveillance and interventions in these settings is needed. In the post-emergency phase programmes need to be far more extensive than those offered under the Minimal Initial Services Package (MISP). While the potential for stigmatisation represents an important constraint, there is a need to prioritise HIV/STI interventions in order to prevent HIV transmission in emergency-affected populations themselves, as well as to contribute to regional control of the epidemic.

Keywords: HIV and STIs in complex emergencies, HIV and refugees, risk and prevention strategies, southern and central Africa.

The term 'complex emergency' is used to define a situation that affects large civilian populations and usually involves a combination of war or civil strife, food shortage and population displacement, all of which result in significant excess mortality (Toole, 1999; Burkle, 1999). These situations have become more common over the past two decades, particularly in Africa, and they may extend over many years. HIV prevalence rates are high in many of the countries affected. Recent examples of complex emergencies in Africa are those in Sierra Leone, southern Sudan, Rwanda, Somalia and Angola.

The main causes of death in the emergency phase are typically measles, diarrhoeal diseases, acute respiratory diseases and malaria. A high prevalence of protein energy malnutrition is also common and is another major cause of mortality

(Toole and Waldman, 1990). The causes of death are similar for refugees, who, by definition, have crossed international borders, and for the internally displaced. The latter, however, do not benefit from the protection of an international agency with a clear mandate for the co-ordination of a humanitarian response.

Significant advances have been made in developing and improving technical standards in many important areas of public health in emergencies. Immunisation programmes (particularly against measles), adequate water and sanitation facilities, and food of a quality and quantity that meets basic caloric and micronutrient requirements are now viewed as minimum standards in humanitarian interventions (IFRC, 1998). As yet, however, the prevention of HIV and sexually transmitted infections (STIs), which we argue are important, though less visible, causes of morbidity and mortality, have not received adequate attention in populations affected by emergencies. Efforts are needed to document the extent of this problem, implement prevention strategies that are of proven effectiveness, and develop innovative approaches suitable for these complex environments. The prevention of HIV infection in emergency settings has implications not only for the populations immediately affected by the crisis but also for the regional transmission and control of the HIV/AIDS epidemic in the long term. Based on a review of available literature, we summarise some of the potential risk factors for HIV in populations affected by emergencies, describe the prevention strategies appropriate for the setting, and recommend topics for research and action.

Factors associated with increased risk in emergencies

In terms of the factors associated with transmission, complex emergency settings may differ substantially from the more stable environments in which HIV research and prevention programmes have traditionally been implemented. These risk factors differ from context to context but may include massive population displacement, disruption of family and social structures and mores, disruption of sexual networks, sexual interaction of emergency-affected people with military or paramilitary personnel, the economic vulnerability of women and unaccompanied minors, the frequency of commercial sex work, the frequency of sexual violence and coercive sex, psychological trauma, the disruption of preventive and curative health services, unsafe blood transfusion practices at a time of increased blood transfusion requirements, the increased use of illicit drugs and the high prevalence of sexually transmitted infections (Santos-Ferreira et al., 1990; Salama et al., 1999; Burkle, 1999).

At a policy level, there are encouraging signs that HIV prevention in emergencies is gaining attention. The Joint United Nations Programme on HIV/AIDS (UNAIDS) has produced intervention guidelines on HIV in emergencies (UNAIDS, 1996), an international conference has been convened (UK AIDS Consortium, 1997), and a World Health Organization (WHO) research agenda for complex emergencies gives some priority to STI and HIV prevention (WHO Division of Emergency and Humanitarian Action, 1998). The revised edition of an interagency field manual on reproductive health, including a chapter on HIV and STI prevention, has recently been published (UNHCR, 1999). Very few studies, however, have documented the magnitude of the HIV epidemic in complex emergencies, analysed the

epidemiological risk factors of importance in the specific context of these emergencies, or made recommendations about appropriate surveillance systems or prevention programmes based on sound, ethical scientific study.

Sexual transmission

Rape

Military and paramilitary personnel have frequently and systematically used rape to terrorise and drive a population from an area (Stiglmeier, 1994; Crossette, 1998). At other times in unstable settings, men with weapons and power opportunistically exploit available women (McKinley, 1998). During Liberia's civil war, nearly half of civilian women and girls are estimated to have been physically or sexually abused in the first five years of fighting (Bauer, 1998). The United Nations High Commissioner for Refugees (UNHCR) reported that 39 per cent of Vietnamese 'boat women' were raped or abducted, primarily by pirates, while fleeing their home country by sea (Ashford and Huet-Vaughn, 1997). Risk can continue in refugee camps: recounting a sadly frequent situation, a Liberian woman related how the women's shelters were set up on the fringe of the camp, which made the women more susceptible to sexual violence from military personnel, police and male refugees (Kinnah, 1997).

Women raped by military and paramilitary personnel are at increased risk of contracting HIV. Even in peace, the STI rate is two to five times higher for military personnel than for civilians (Kingma, 1996; Haour-Knipe et al., 1999). A small study in Angola showed HIV rates four to five times higher in members of the military than in comparable urban populations (Santos-Ferreira, 1990). The first documented statistical link between soldiers and the spread of AIDS was found in Uganda. In particular, the geographical pattern of AIDS was correlated with the placement of the Ugandan National Liberation Army for the first six years of the post-Amin civil war (Smallman-Raynor and Cliff, 1991).

HIV prevalence data are limited for male military and police personnel and for civilian women in the same region, but most often show higher rates in the men (see Table 1). The increased HIV prevalence for military and police personnel is attributed to their high-risk age group (25–44 years), multiple sex partners and high-risk behaviour during their long periods away from home and family (McCarthy et al., 1989). Women's risk of contracting HIV as a result of sexual violence increases when there are multiple perpetrators or when women are held by military personnel for prolonged periods for sexual purposes, as has been reported in recent emergency situations (Salama et al., 1999). Young women and girls may be at even higher risk because of their increased biological vulnerability (Vuylsteke et al., 1996).

Sex as a survival strategy

The use of sex as a survival strategy with its attendant HIV risk is well recognised in economic or politically vulnerable communities, particularly in Africa (Vuylsteke et al., 1996). In emergency situations, forced or at least coerced sexual relations may be relatively common. Typically, women and children make up approximately 80 per cent of the 40 to 50 million refugees and internally displaced persons worldwide

Table 1 Comparison of HIV seroprevalence among male military and police and among pregnant women, by country, 1994–1999

Country	Group	Men no. of studies	Men median (range) %	Pregnant women no. of studies	Pregnant women median (range) %
Europe					
Belarus	M	1	0.4 (n/a)	1	0.0 (n/a)
Cambodia	M & P	66	6.2 (0.0–17.3)	49	2.3 (0.5–19.5)
Africa					
Cameroun	M & P	2	13.3 (12.0–14.7)	30	4.2 (1.9–14.6)
Central African Rep	M	3	14.5 (13.9–15.0)	39	12.8 (1.6–20.0)
Tanzania	M & P	4	13.3 (12.2–13.7)	35	12.2 (0.0–32.5)
Uganda	M	3	27.0 (26.5–28.1)	63	11.7 (1.3–26.4)

M=military; P=police

Source: Bureau of Census, 1999

n/a = not applicable

(UNHCR, 1992; UK AIDS Consortium, 1997). Men often abandon or are separated from their families for military reasons or in their search for employment in the cities (Mabey and Mayaud, 1997), or they may be targeted by opposing forces and be killed or taken prisoner. The percentage of female-headed households therefore may be high, and these households may have higher economic vulnerability (Shoham, 1996). Women and girls with limited education, low financial earning ability when far from their home area, and without male wage earners or protectors in the household may be particularly vulnerable or have few realistic alternatives to trading sex for income or basic needs. Women may move to the city to earn money, by whatever means possible, to support their families living in the rural areas (Zwi and Cabral, 1991).

When families are separated by war and displacement, new social units are formed (McKinley, 1998). Unaccompanied minors, a particularly vulnerable group increasingly encountered in large numbers in African emergencies, lack parental guidance and protection. Children may become sexually active at an earlier age (Obaso, 1998). Teenage pregnancies and illicit abortions are common in some emergency settings (UNHCR, 1992). The traumatic events and psychological sequelae experienced by many displaced people may precipitate an erosion of traditional values. These various factors in combination with the heightened economic vulnerability of women and children can disrupt sexual networks and lead to the formation of new networks with more unfavourable power differentials. In practice, this may mean, in addition to additional sexual exposure, a decreased ability for women to demand their partners to use condoms and a higher risk for the sexual transmission of HIV.

Refugee women may engage in commercial sex (McKinley, 1998) or trade sex for basic commodities such as food, shelter material and other necessities. Throughout Africa, the prevalence rates of HIV and STIs are highly elevated among commercial sex workers (CSWs) (Bureau of the Census, 1999). The risks from

unprotected vaginal intercourse with an HIV-positive male partner are clearly high: the probability of male-to-female HIV transmission ranges from 0.1 per cent to as high as 5.6 per cent per sex act (Mastro and de Vincenzi, 1996). The risk of female-to-male transmission can also be high (Satten et al., 1994), especially if a CSW or other female partner is co-infected with a STI; and an HIV transmission rate as high as 13 per cent has been reported for men who simultaneously acquired a symptomatic STI (Mastro and de Vincenzi, 1996).

High-risk groups for HIV infection also include young refugee men who travel to nearby cities to find labour and may spend time in taverns and hostels (Haour-Knipe et al., 1999). They typically must leave their families behind and often look for companionship with CSWs inside or outside refugee camps (Zwi and Cabral, 1991). In non-emergency settings, migrant workers are well recognised to be at considerably increased risk of STIs and HIV (Pison et al., 1993; Mabey and Mayaud, 1997), and many of these workers' risks would be similar to those of refugee men seeking work far from families.

Host-refugee interaction

Higher risk of HIV infection for migrants may be particularly important for those from rural areas, where HIV prevalence and knowledge of HIV are typically low, who migrate to urban centres. Risk may similarly be increased for refugees from rural areas who settle near cities or large villages. In these situations, widespread sexual mixing may be common (Salama, no date). Rural Sudanese refugees in Uganda have demonstrated a marked lack of awareness about HIV (Jurugo, 1996). In Rwanda, HIV prevalence increased dramatically among rural women after the civil war (Leroy et al., 1995).

In general, the risk of HIV transmission in host-refugee sexual interactions depends on the relative HIV prevalence for the two populations and the extent and pattern of host-refugee interaction, as suggested by a study of Mozambican refugees in Swaziland (Van Rensburg et al., 1995), as well as factors such as the prevalence of STIs and the maturity of the HIV epidemic in the vicinity. HIV risk may depend in part on whether displaced populations are housed in closed or open camps or are integrated into the community.

STIs as a cofactor in transmission

STIs are an important cofactor in the sexual transmission of HIV. The association is strongest for ulcerative disease (Plourde et al., 1994), but is also present for nonulcerating infections such as gonorrhoea and chlamydia (Laga et al., 1993). STIs increase the shedding of HIV in the genital tracts of infected men (Fleming and Wasserheit, 1999) and women (Ghys et al., 1997). Some information suggests that rates of STIs are high in refugee situations (Mabey and Mayaud, 1997; CDC unpublished data, 1992: STD/HIV Control and Prevention Project, Bench Zone, Region 8 Ethiopia) and are consistently under-reported; in some areas, as many as half of sufferers seek care from traditional healers (Mayaud et al., 1997). Successful

STI treatment reduces HIV spreading (Ghys et al., 1997). In a trial in Mwanza, Tanzania, STI treatment services were integrated into the primary health-care system and made available to people with few resources. Within two years, the incidence of HIV infection decreased 40 per cent in the study villages compared to the rates in surrounding communities (Grosskurth et al., 1995). The apparently contrary findings of the Rakai study (Wawer et al., 1999) — that mass STI treatment had no significant effect on HIV incidence — may merely reflect a different set of circumstances: a mature HIV epidemic with high baseline HIV seroprevalence and a relatively high prevalence of genital herpes simplex infection, which is not curable by treatment. Overall, STI treatment remains a key strategy in HIV prevention (Wasserheit, 1992; Fleming and Wasserheit, 1999; Hitchcock and Fransen, 1999).

Best-practice guidelines for STI diagnosis and treatment in resource-poor settings advocate syndromic diagnosis (i.e., based on signs and symptoms, without the requirement of laboratory capability) and treatment (WHO/GPA, 1994; WHO/UNAIDS 1997; Dallabetta et al., 1997). These guidelines, however, 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 related to health-care providers' lack of confidence in the syndromic approach, which may correlate poorly with lab diagnosis and may be less specific for the nonulcerative STIs (Paxton et al., 1998). According to one study, the correlation between the symptoms and signs and the etiologic diagnosis may be poor in the refugee setting (Mayaud et al., 1997). For these reasons the potential value of mass STI treatment needs to be evaluated further, particularly in situations in which there is little sexual interaction with members of the surrounding community (Wilkinson et al., 1999).

Risk of mother-to-child HIV transmission

During the acute stage of an emergency, fertility rates may be reduced; however, as stability returns and the general health and nutritional levels improve, sexual activity increases and fertility rates may rise to pre-disaster levels (Holck and Cates, 1980). As part of a socio-cultural impetus to repopulate after a civil conflict, adults may refrain from using condoms (Obaso, 1998). On a population basis, the risk of mother-to-child transmission depends upon the HIV seroprevalence among pregnant women, which is high in some populations affected by refugee emergencies.

Table 2 summarises the seroprevalence in antenatal women in countries that have been affected by emergencies or that have received refugees from such countries. In the absence of antiretroviral prophylaxis, the risk of transmission from an HIV-1 infected mother to her infant ranges from 15 to 45 per cent, the rates being highest in sub-Saharan Africa (Working Group on Mother-to-Child Transmission of HIV, 1995). The risk of HIV transmission through breastfeeding ranges from 7 to 14 per cent (Dunn et al., 1992; Ekpini et al., 1997). Newly acquired HIV infections in the mother may be associated with a higher risk of transmission associated with breastfeeding (Dunn et al., 1992). Therefore, if newly acquired infections are common

Table 2 HIV seroprevalence among pregnant women by country 1996–1999

<i>Country</i>	<i>No. of studies</i>	<i>Median (range)%</i>
Europe		
Belarus	1	0.0 (n/a)
Russia	3	0.0 (0.0–0.0)
Asia		
Burma	53	1.0 (0.0–8.5)
Cambodia	43	2.3 (0.3–19.5)
India	11	0.8 (0.0–3.4)
Sri Lanka	7	0.0 (0.0–0.0)
Thailand	168	1.8 (0.0–7.9)
Vietnam	63	0.0 (0.0–1.2)
Africa		
Botswana	14	33.9 (21.8–43.8)
Burkina Faso	4	9.6 (5.9–10.0)
Burundi	3	17.0 (3.4–20.6)
Cameroon	6	5.6 (1.9–11.2)
Central African Republic	14	13.6 (1.6–20.0)
Congo	4	5.4 (1.6–5.8)
Côte d'Ivoire	20	9.3 (0.4–16.7)
Democratic Rep. Of Congo	3	3.1 (1.5–6.3)
Ethiopia	10	17.1 (9.0–26.0)
Gabon	1	4.7 (n/a)
Ghana	53	1.4 (0.0–12.8)
Guinea	7	1.4 (1.3–1.8)
Guinea-Bissau	3	2.0 (0.5–4.6)
Kenya	29	14.4 (4.1–34.9)
Liberia	4	0.0 (0.0–0.0)
Malawi	42	16.9 (2.3–34.0)
Mali	3	2.3 (0.2–2.7)
Mozambique	1	18.2 (n/a)
Namibia	18	16.7 (3.7–25.7)
Nigeria	3	2.7 (0.8–6.7)
Rwanda	26	10.1 (3.5–32.7)
Senegal	15	0.1 (0.0–0.6)
South Africa	37	18.3 (4.0–34.4)
Sudan	1	4.5 (n/a)
Swaziland	5	26.3 (23.9–27.7)
Tanzania	1	13.7 (n/a)
Togo	10	4.6 (3.0–8.2)
Uganda	27	10.3 (1.6–15.4)
Zambia	1	27.0 (n/a)
Zimbabwe	25	31.4 (7.0–50.8)

n/a = not applicable

Source: Bureau of Census, 1999

because of the increased sexual risks already described, the risk of mother-to-child transmission is likely to be heightened in emergency settings.

The effectiveness of antenatal, short-course oral zidovudine in the absence of breastfeeding has been as high as 50 per cent for preventing mother-to-child infection (Shaffer et al., 1999; Wiktor et al., 1999; Dabis et al., 1999). In another recent study, a different drug, nevirapine, given once to the mother during labour and once to the newborn, has also decreased HIV transmission by nearly 50 per cent (Guay et al., 1999). This drug regimen is inexpensive as well as easy to administer (Marseille et al., 1999). Both drug-based preventive approaches are currently used in various settings in developing countries. Selection of the preferred regimen will depend on further experience with their use under field conditions.

Risks related to health-care

It is difficult to quantify HIV transmission from inadequately sterilised equipment because such cases tend to occur in locations where diagnostic and surveillance systems are poor (MAP Network, 1998). If organisations providing health-care are not well prepared, there is, however, a potentially increased risk for the transmission of HIV and other blood-borne infections accidentally resulting from clinical practice or from transmission between patients and/or health-care workers. These risks include mass immunisation campaigns, overuse of intramuscular injections and intravenous infusions, incision procedures when supplies are inadequate, unsafe sterilisation practices, and poorly trained and supervised staff. Health-care workers may themselves be at increased risk of contracting HIV through needlestick injury or exposure of open cuts and mucous membranes to the blood and body fluids of an infected patient, especially under chaotic emergency conditions.

Although screening has reduced the risk through transfusion in most parts of the world, HIV is still transmitted through transfusions, even under stable conditions. In a study in Kenya, the risk of HIV infection from a blood transfusion was estimated at one in 50 (Lackritz, 1998), a statistic 10,000 times higher than figures in industrialised countries such as the US or France. Contributing factors included poor record systems, breaks in the cold chain while transporting test kits, collection of blood from family members when rapid tests are not available, and the assumption that a mother and her child have the same HIV infection status (Lackritz, 1998).

The transfusion-associated HIV risk may be even greater in complex emergencies if a large number of war-related injuries require transfusion. This is particularly true if there has been a breakdown of the health infrastructure in war-affected areas and a subsequent failure to screen blood transfusions or ensure the supply of clean needles and syringes and sterile surgical equipment. The use of paid donors and the failure to screen out high-risk donors also increases the risk (Chattopadhyaya et al., 1991; Mundeet al., 1995), and both are likely to be more common when services are under pressure in conflict situations.

There are two other routes of transmission which are potentially important in emergency settings, although little is known about their frequency. The first route is the injection of illicit drugs, because drug users would rarely have access to clean needles or sterilisation equipment in complex emergencies. The other route is sexual contact between men, particularly anal intercourse, whether consensual or coerced.

Minimal Initial Services Packages

A Minimal Initial Services Package (MISP), which represents the basic programmatic requirements for HIV prevention in the emergency phase of disaster relief, includes safe blood transfusions, access to condoms, availability of materials for universal precautions and the availability of basic HIV/AIDS information (UNAIDS/WHO/UNHCR, 1996). The recently updated New Emergency Health Kit ('NEHK '98') (UNFPA, 1998) lists materials required for assuring the MISP and complementary reproductive health services. Supplies for the NEHK are packaged in quantities adequate for 10,000 people for three months. Currently, however, HIV test kits for screening blood for transfusion or assessing HIV status are not included among these supplies.

Barriers to HIV prevention

HIV prevention in complex emergencies has not yet been adequately addressed for several reasons. One, which is common to all HIV programmes, relates to the silent nature of the epidemic and the stigma attached to the diagnosis. Methods of assessing HIV prevalence and risk in emergency settings have not yet been developed.

While governments and international assistance organisations often characterise HIV as a development issue, little consideration has been given to HIV as a priority health issue during emergencies, as this review has discussed. In emergency settings, the focus of donors and implementing partners has traditionally been on basic needs: food, water, shelter and health services (Mabey and Mayaud, 1997). This focus may be more relevant during natural disasters, which are generally of short duration with the infrastructure rebuilt relatively quickly afterwards. In complex political emergencies, however, such as those in Sierra Leone, Burundi, southern Sudan or Angola, the physical and social infrastructure may remain devastated for many years.

Additionally, because the limitation of human rights (such as the right to seek and enjoy asylum or the right to freedom of movement) has been an integral part of the history of HIV, organisations such as UNHCR, whose mandate is to protect refugees, have been reluctant to support HIV testing. One concern is that the governments providing asylum could use individual HIV status or high prevalence rates in a given refugee population as an exclusion criterion for refugees trying to cross their borders (Annas, 1993). Furthermore, individual testing requires the availability of counselling and should be linked to care for those who test HIV-positive. Counselling and care are rarely available in the refugee environment, and it is difficult to ensure confidentiality in confined camps.

Another frequent barrier to HIV prevention in emergency settings is the lack of any functioning health system. In complex emergencies, a ministry of health may not actually exist because of the breakdown of civil institutions as a result of war (for example, Somalia) or territorial control by a rebel group (for example, southern Sudan); it may be antagonistic to one ethnic minority and therefore reluctant to provide services to that group; it may have no coherent HIV policy; or it may be constrained by a lack of resources (for example, Sierra Leone). It is in these situations that HIV/AIDS transmission may accelerate most dramatically.

The final barrier to HIV prevention is the critical lack of high-quality data on the prevalence of STI or HIV in countries affected by conflict. HIV is under-recognised in populations affected by emergencies. In refugee camps, sentinel surveillance systems are rare. The data derived from blood bank HIV screening in host country hospitals or from diagnostic tests ordered by health-care workers are usually not disaggregated by refugee or indigenous status and are rarely systematically gathered and analysed. Moreover, in emergency relief settings, morbidity and mortality due to chronic diarrhoeal illness, fever of unknown origin, recurrent pneumonia, wasting syndromes, meningitis and tuberculosis (all frequently consequences of AIDS-related immunosuppression) are rarely attributed to HIV in reporting systems. Similarly, in children, failure to thrive, cachexia, developmental retardation and recurring bacterial infections, which may be symptoms of AIDS rather than a result of the health and nutritional conditions in a refugee camp, are rarely designated as HIV related.

This lack of recognition is due partly to the difficulties in diagnosing HIV/AIDS in the absence of testing facilities; the unfamiliarity of clinicians, particularly those from developed countries, with the manifestations of the disease in developing countries; and the reluctance of those who do recognise the disease to risk stigmatising their patients by reporting it.

In fact, HIV epidemiological information is usually not current or sufficient for many of the countries affected by emergencies or host to refugees. For example, in the UNAIDS profiles (which use data collated by the US Bureau of Census (Bureau of the Census, 1999)) for two countries with complex emergencies, Sierra Leone and Sudan, reliable antenatal HIV seroprevalence data have not been reported since 1992 and 1996, respectively (UNAIDS/WHO, 1998a; UNAIDS/WHO, 1998b). Without data to quantify the extent of the problem and provide a baseline against which to evaluate programmes, the NGOs that provide the bulk of health services to emergency-affected populations situations may assign HIV low priority.

Discussion

Prevention strategies

The MISP should be made available in the acute phase of emergencies as the major HIV-prevention strategy, including transfusion blood safety and prevention of other health-care-related transmission, during the time when mortality is more than one per 10,000 per day. The procedural details of mobilising and implementing the MISP in camp settings have been published (UNAIDS/WHO/UNHCR, 1996; UNHCR, 1999). Note, however, that 60 to 75 per cent of Africa's refugees have never lived in camps (Harrell-Bond, 1994). In recent emergencies, a large proportion of refugees has sought assistance and shelter directly from host populations (USAID, 1999). Until now, however, most of the HIV-prevention activities that have been attempted have been directed to camp populations. Innovative strategies are needed to give internally displaced persons and refugees outside camps access to the services outlined in the MISP. Normally, UNHCR or the designated agency for reproductive health co-ordination takes the lead in co-ordinating the MISP; however, when UNHCR is not present (for example, with internally displaced people), another agency such as UNICEF could play the co-ordination role.

In the post-emergency phase, the prevention of HIV should be integrated into the prevention and treatment of STIs and, in more stable situations, into comprehensive reproductive health services. The latter, in addition to providing HIV education and condom promotion, should, when feasible, include voluntary testing and counselling services as well as comprehensive care for people with HIV/AIDS. Increasingly, interventions to prevent mother-to-infant transmission are being implemented in developing countries and may become important in some emergency-affected populations. In countries where the ministry of health or health authorities are functioning, HIV policies for emergency-affected people should be consistent with national policies, and in countries where there are refugees, host populations should benefit from similar services.

The prevention of sexual violence and coerced sex is also important during all phases of an emergency. Women are at risk of sexual violence during civil conflicts and also during flight to another region or country. For those who have reached camps, the risk can be minimised by placing latrines and facilities in accessible, well-lit areas, making special arrangements for unaccompanied minors, and avoiding the sharing of living space by unrelated families (UNHCR, 1999). One practitioner has suggested inspecting potential camp design from the perspective of a potential rapist (Newberry, personal communication). Comprehensive guidelines have been developed for many aspects of the prevention and management of sexual violence in refugee camps (UNHCR, 1995). Internally displaced women, however, may not benefit from the protection provided for refugees by the UNHCR and other international agencies.

There is as yet no proven HIV prophylaxis for women who have been raped. In some countries, including South Africa, antiretroviral drugs are used presumptively as post-exposure prophylaxis (Caelers, 1999), because such an approach is effective after needlestick injury (Cardo et al., 1997) and after the birth of a baby to an infected mother (Wade et al., 1998). The post-exposure use of antiretroviral drugs is probably not feasible in refugee camps at this time.

Until a more comprehensive assessment is possible, a basic assessment of HIV and STIs by the reproductive health co-ordinator should be mandatory. It should be carried out at an early stage in an emergency as the MISP is being implemented. Secondary sources may be used, if available, such as data from the ministries of health of the country of origin and the host country, blood-bank data on HIV and syphilis prevalence in donors, and proxy indicators such as new cases of tuberculosis and STIs from health service providers. Other indicators, such as the number of reported cases of sexual violence, the number of unaccompanied minors, the presence of injection drug users, and the baseline level of HIV knowledge and condom use, may also be important.

The treatment of STIs remains one of the few proven means for preventing HIV that has been applied in emergency situations. Community health workers can be trained in syndromic diagnosis and treatment, which is simple and relatively sensitive, particularly for genital ulcer disease and urethral discharge (Mayaud et al., 1997). Outreach programmes should facilitate the promotion and provision of condoms, partner notification and referral, and group-based education and counselling (UNAIDS, 1996). Clearly STI management and prevention may be more efficient in a confined refugee camp rather than when refugees are more integrated into host populations.

Research needs

There are several priority areas for research. One area relates to the development of rapid and workable assessment methods for the post-acute phase. STI and HIV prevalence and risk assessment may be carried out using methods such as cluster-sampling techniques, which are used in measuring malnutrition prevalence or vaccination coverage in emergency settings. An assessment of STI/HIV prevalence and risk should include qualitative and quantitative components.

Qualitative methods such as focus groups, food economy analyses, and sexual networking studies can provide better understanding of the specific determinants of vulnerability and the groups that need intervention. Qualitative analysis may lead to a conclusion that would not have been reached by using other methods. For example, it may suggest that generating or supplementing income may reduce vulnerability to HIV. In Uganda, for example, Sudanese refugee women were provided alternative employment so that they would not need to resort to selling sexual services (Akwir et al., 1998).

Quantitative studies should include not only the gathering of baseline data, but when feasible and appropriate, anonymous unlinked cross-sectional studies (Schwartländer et al., 1994). Blood drawn during antenatal screening for syphilis serology can be used for this purpose. In the future, techniques such as the detuned assay (Janssen et al., 1998) may be useful in obtaining critical age-specific incidence (as well as prevalence), measures that give current information on the HIV epidemic. Incidence measures would be particularly useful immediately after a prolonged emergency or war during which seroprevalence data may not have been collected for several years and the current epidemic trends are thus unclear. There is an urgent need to validate, under field conditions, the detuned assay for the HIV subtypes commonly found in Africa.

Interventions

Interventional studies are another priority. For effective intervention trials, however, the first priority is descriptive epidemiological research so that investigators understand the distribution and determinants of STI and HIV risk under complex emergency conditions. Although the Rakai (Uganda) HIV prevention study — a trial of mass STI treatment — did not show a significant decrease in HIV incidence in the intervention group (Wawer et al., 1999), the study may none the less have important implications for refugees or displaced persons in camps. In that study, in a community-based design, participants were evaluated in a fairly non-invasive manner in their homes for STIs and HIV. The relative efficacy in the prevention of HIV by mass STI treatment compared with syndromic STI management should be investigated in a refugee camp or a camp for displaced persons in an area where STI prevalence rates are high and HIV prevalence rates are low.

As zidovudine and the newer drug, nevirapine, become more commonly used to prevent mother-to-child transmission in countries that host large numbers of refugees, it is important that intervention programmes do not exclude populations affected by emergencies. A mother-to-child prevention programme has three principal components: HIV testing with counselling, antenatal and/or peripartum

administration of anti-retroviral drugs, and (potentially) provision of substitutes for breastfeeding. Each component is complicated logistically, has attendant costs, and requires confidentiality and cultural acceptability. The risk for HIV transmission through breast-feeding must be balanced carefully against the risks of bottle feeding or early weaning in emergency settings, where access to safe water may be limited, sanitation may be poor, and diarrhoeal disease a major cause of mortality in children under the age of five.

Ethical and political considerations should not be minimised. Information regarding HIV status may be misused against individuals and against groups. We believe, however, that if the principles of informed consent and confidentiality are respected in the conduct of intervention and research, the outcome will be increased access to measures that will allow refugees and displaced persons to protect themselves from STIs and HIV. A key aspect will be the participation by local health authorities, community representatives, and HIV-infected refugees or displaced persons in the design of interventions and research.

Conclusion

Refugees and internally displaced persons are clearly at risk of contracting HIV infection. This risk differs according to many factors:

- the maturity of the HIV epidemic;
- the relative prevalence of HIV in the host and refugee population;
- the prevalence of other STIs that may facilitate transmission;
- the level of sexual interaction between the two communities;
- the presence of context-specific risk factors such as systematic rape by military or paramilitary groups and commercial sex; and
- the level and quality of HIV-prevention services.

HIV prevention is important not only for the affected communities but also for stemming the regional spread of HIV. Means of decreasing HIV transmission (for example, condoms, safe transfusion practices, universal precautions in health-care, the treatment of STIs and the prevention of mother-to-child transmission) are becoming more affordable for developing countries. The international community has an obligation to assist host governments in ensuring that these services are also made available for refugees. A coherent prevention strategy will require better baseline information, better surveillance and more access to testing and counselling than currently exist in emergency settings. Undoubtedly the ethical concerns regarding confidentiality, stigmatisation and the potential for the misuse of information must be dealt with sensitively and in partnership with the communities at risk. Continuing to miss opportunities for the prevention of HIV/AIDS in emergencies, however, represents a far graver ethical concern.

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