REPRODUCTIVE TRACT INFECTIONS, HIV/AIDS AND WOMEN’S HEALTH

May Thein Hto Post

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Reproductive Tract Infections, HIV/AIDS and Women’s Health: Current Approaches and Future Options

by

May Thein Hto Post
Abstract

For years, control of reproductive tract infections (RTIs) has not been a public health priority for most countries and development agencies. Lack of awareness of the problem of RTIs and their sequelae, competition for resources to control other important health problems, and the reluctance of health policy makers to deal with diseases related to sexual behavior which is difficult to change have all played a role -- and for women, the generally low status in society has been a major obstacle to the control and prevention of RTIs occurring in women in the general population. But now, neglect is changing to concern and RTIs are receiving increased attention because of the emergence of human immunodeficiency virus (HIV) and AIDS as a major public health problem and the identification of several sexually-transmitted RTIs as risk factors for the spread of HIV.

Many of the factors that predispose women to sexually-transmitted RTIs increase women’s vulnerability to HIV/AIDS. Women are hit harder because their generally subordinate role in family and society and their lack of autonomy and say over sexual matters restricts their ability to protect themselves; this vulnerability is further compounded by their role as care takers and the burden of having to care for people who become ill. In Africa the effects can be clearly seen, in Latin America and the Caribbean numbers are increasing steadily, while in Asia the epidemic is beginning to take hold.

This working paper is an overview of some specific current approaches and future options in sexually transmitted disease (STD) and HIV/AIDS control and prevention strategies discussed in detail in two background documents prepared for the Women’s Health and Nutrition Best Practices paper. This working paper highlights the need for integrated services to better serve women in the general population through existing health and family planning systems; stresses the importance of taking into account the major roles played by gender mechanisms and behavioral factors underlying the spread of sexually transmitted infections; points to the need for research and surveillance focusing on women as recipients of infection (rather than as transmitters of infection); and highlights the necessity for the effective participation and involvement of both men and women in partnership against the further spread of reproductive tract infections and STDs including HIV/AIDS.
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BACKGROUND

Reproductive Tract Infections

Reproductive tract infections (RTIs) are common diseases with profound health and social consequences for third world women. Compared with men, women are more susceptible to acquiring infection and are also more likely to experience complications from the primary infection in part because these infections are often asymptomatic in women and thus go untreated. They include a variety of bacterial, viral and protozoal infections of the lower and upper reproductive tracts. The majority are sexually transmitted infections. WHO estimates that worldwide, about 250 million new infections are sexually transmitted each year and to date, seven sexually-transmitted infections—trichomoniasis, chlamydia, human papillomavirus, gonorrhea, herpes, syphilis and chancroid—outrank HIV/AIDS in both the numbers of people infected and the annual increase in new cases (Table 1). Non-sexually transmitted infections such as those due to an overgrowth of organisms normally present in the reproductive tract (bacterial vaginosis, candidiasis) are also included under RTIs and are equally as important. For example, bacterial vaginosis (BV) is notable for its potential role in pelvic inflammatory disease, infertility and adverse outcome of pregnancy. Other non-sexually transmitted infections causing RTIs include iatrogenic RTIs due to infection caused by dilation of the cervix, be it by induced abortion, improperly performed intrauterine device (IUD) insertion, unhygienic delivery practices or simply by childbirth.

Table 1: Estimated Annual Number of New Sexually Transmitted Infections Worldwide, 1990

<table>
<thead>
<tr>
<th>Disease</th>
<th>Number of New Cases (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trichomoniasis</td>
<td>120</td>
</tr>
<tr>
<td>Chlamydia</td>
<td>50</td>
</tr>
<tr>
<td>Human Papillomavirus</td>
<td>30</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>25</td>
</tr>
<tr>
<td>Herpes</td>
<td>20</td>
</tr>
<tr>
<td>Syphilis</td>
<td>4</td>
</tr>
<tr>
<td>Chancroid</td>
<td>2</td>
</tr>
<tr>
<td>Human Immunodeficiency Virus</td>
<td>1</td>
</tr>
</tbody>
</table>

Source: WHO 1990.

Existing prevalence data on RTIs among third world women are limited both in quality and in scope. In most countries, studies have focused on commercial sex workers (CSWs) because they are more readily accessible through government-sponsored screening programs, and studies involving non-CSW populations usually draw on antenatal and family planning clinics and so are rarely population-based. But all of the limitations notwithstanding, clinical data indicate that RTIs are increasing in many parts of the world and are more likely to cause disability among women in developing countries.

Sequelae of RTIs

Pelvic Inflammatory Disease. RTIs in women originate in the lower reproductive tract and some such as bacterial vaginosis, chlamydia and gonorrhea spread spontaneously, in the absence of early treatment, to the upper reproductive tract resulting in pelvic inflammatory disease (PID), a major cause of morbidity
and mortality in women. The prevalence of untreated lower RTIs in most developing countries is sufficiently high that procedures such as IUD insertion or events such as childbirth are likely to exacerbate existing infection and facilitate entry and spread of pathogens into the upper reproductive tract. Data from studies in industrialized countries show that PID occurs in 8 to 10 percent of women with untreated chlamydial cervicitis (Westrom and Mardh 1980) and in 10 to 20 percent of women with untreated gonococcal cervicitis (Westrom 1980). The incidence of PID in women with bacterial vaginosis is not quantified, but bacterial flora recovered from women with PID often includes organisms that are characteristic of bacterial vaginosis.

The risk of spread of RTIs with subsequent PID also increases in women with existing RTIs when they undergo unsafe abortions (post-abortion PID) or give birth under poor obstetric care. For example, in Southeast Asia, post-abortion infection was the cause of PID in 65 to 86 percent of hospitalized women (Meheus and Wasserheit 1991). And, roughly 18 to 20 percent of women with untreated RTIs develop PID following abortion in industrialized countries (Wasserheit 1990). Post-partum infection after vaginal delivery due to poor obstetric care is also very common in developing countries — studies indicate post-partum infection is approximately 10 times more common in developing countries than in developed countries (Plummer et al. 1987). It is estimated that 72 percent of PID observed in Pakistan was related to post-partum infection after childbirth (Muir and Belsey 1980) and in several African hospitals, post-partum infection accounts for 14 to 30 percent of maternal mortality (Meheus and Wasserheit 1991).

RTIs carry serious consequences for the pregnant woman and her fetus as well as for the non-pregnant woman. In the pregnant woman, they are responsible for adverse outcomes of pregnancy, namely fetal wastage, low birth weight or prematurity and congenital infection, and ectopic pregnancy. And, in the non-pregnant woman, the complications are frequent, irreversible and include infertility, chronic pelvic pain and recurrent infection.

Consequences in Pregnant Women

RTIs play a significant role in adverse pregnancy outcome, such as fetal wastage (both spontaneous abortion and stillbirth), low birth weight (due to prematurity, intrauterine growth retardation (IUGR) or both) and congenital infection (Table 2). In utero, the fetus may be affected by means of infected amniotic fluid or by blood borne transmission. Infection may also occur at parturition.

Fetal Wastage. Fetal wastage occurs in as many as 25 to 50 percent of pregnancies in women acutely infected with RTIs (Wasserheit 1990). Syphilis at any stage can affect pregnancies but early syphilis causes complications more often than other stages. In the University Teaching Hospital in Lusaka, Zambia, 42 percent of still births were attributed to syphilis during pregnancy (Ratnam, Din, Hira 1982). And a case control study in Zambia, showing the relation between stillbirths and high titre rapid plasma reagin card test seroreactivity yielded a relative risk of 28 (Watts et al. 1984), which is consistent with a 1951 study from the U.S. by Ingraham. The 1951 study showed that the relative risk of stillbirths for a mother with untreated early syphilis was 32 times greater than for a non-infected mother.

Low Birth Weight. Almost every RTI has been associated with low birth weight (LBW): either prematurity or IUGR or both. LBW complicates roughly up to one-quarter to two-thirds of acutely infected pregnancies. Women with acute gonococcal or chlamydial infection are 3 to 5 times more likely to deliver a low birth weight or premature infant than an uninfected woman (Wasserheit 1990). Gonorrhea is well known for its association with ophthalmia neonatorum, but it has also been associated with prematurity. In fact, a 1990 case-control study by Elliott et al. in Nairobi confirms earlier studies which suggested a link between prematurity and maternal gonorrhea. Gonorrhea is endemic in most parts
Table 2: Rates of Adverse Outcomes of Pregnancy Associated with Reproductive Tract Infections

<table>
<thead>
<tr>
<th>Maternal Diagnosis</th>
<th>Fetal Wastage</th>
<th>LBW or Prematurity</th>
<th>Congenital or perinatal Infection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlamydial infection</td>
<td>?rare</td>
<td>10-30%</td>
<td>40-70%</td>
</tr>
<tr>
<td>Gonococcal infection</td>
<td>?rare</td>
<td>11-25%</td>
<td>30-68%</td>
</tr>
<tr>
<td>Early Syphilis</td>
<td>20-25%</td>
<td>15-50%</td>
<td>40-70%</td>
</tr>
<tr>
<td>Genital Herpes:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>7-54%</td>
<td>30-35%</td>
<td>30-50%</td>
</tr>
<tr>
<td>Recurrent</td>
<td>?rare</td>
<td>?rare</td>
<td>0.4-8%</td>
</tr>
<tr>
<td>Bacterial vaginosis</td>
<td>?rare</td>
<td>10-25%</td>
<td>rare</td>
</tr>
<tr>
<td>Trichomoniasis</td>
<td>?rare</td>
<td>11-15%</td>
<td>rare</td>
</tr>
<tr>
<td>No RTI</td>
<td>4-10%</td>
<td>2-12%</td>
<td>NA</td>
</tr>
</tbody>
</table>


of the world and has reached epidemic proportions in many African countries where studies have shown gonorrhea prevalence among women attending prenatal clinics to be as high as 20 percent (Schultz et al. 1991). Between 25 and 40 percent of women infected with gonorrhea also have a concurrent chlamydial infection in the United States (Stamm et al. 1984), and like gonorrhea, chlamydia has been associated with prematurity. A 1983 study by Harrison et al. found increased risk of LBW delivery and premature rupture of membranes in women who were antibody and culture positive for chlamydia and a 1986 study found an association between cervical chlamydial infection and preterm labor, premature rupture of membranes and low birth weight. Studies have also shown links between bacterial vaginosis and premature rupture of membranes, preterm labor and amniotic fluid infection. (Gravett et al. 1986). And, results of the Vaginal Infection and Prematurity Study sponsored by the National Institutes of Health showed pregnant women with bacterial vaginosis had a 40 percent increased risk of amniotic fluid infection with subsequent premature rupture of membranes.

Congenital Infection. Congenital infection due to maternal RTIs may result in the infant’s illness, permanent disability or neonatal death. Transmission occurs in approximately one- to two-thirds of infants of infected mothers. Gonococcal ophthalmia neonatorum (GON), potentially leading to blindness or even death is acquired by the neonate at delivery during passage through the infected birth canal. Gonococcal eye infections are more than 50 times as common in Africa as in industrialized countries (Rosenberg et al. 1986). A 1986 Kenya study by Fransen et al. documented development of GON in 47 percent of babies whose mothers had gonorrhea and a 1984 Cameroon study showed GON in 30 percent of exposed babies. And for infants born to women infected with chlamydia, the risk of any chlamydial infection is estimated at 50 to 75 percent: chlamydial eye infection is most common, developing in between 25 and 50 percent of neonates born to infected mothers and chlamydial pneumonia develops in 5 to 10 percent (WHO 1988). Another congenital infection is congenital syphilis which is extremely
serious and is often disfiguring and debilitating. In Zambia, congenital syphilis was implicated in 20 to 30 percent of the total infant mortality (Hira 1984).

**Ectopic Pregnancy.** This is due to tubal scarring following PID, resulting in prevention of migration of the fertilized ovum to the uterus. Swedish data report that ectopic pregnancy is 6 to 10 times more common among women with a history of PID compared to those who have never had upper tract infection. Population-based incidence rates for ectopic pregnancy are rarely available for developing countries, but data from selected studies suggest that post-infectious ectopic pregnancy is not uncommon. For example, in Gabon, 1 in 62 pregnancies was ectopic compared to 1 in 133 in Sweden (Meheus and Wasserheit 1991). In the U.S., the ratio increased from 1:208 in 1970 when monitoring of ectopic pregnancy trends began to 1:60 in 1987 (CDC 1990). Reasons given for this increase are: heightened awareness of ectopic pregnancy, improved diagnostic technology and increased occurrence of PID due to sexually transmitted diseases (STDs). Ectopic pregnancy is also one of the two leading causes of maternal deaths in the U.S. (CDC 1990). The situation is worse in resource poor developing countries, where women were not able to receive timely emergency assistance because the ectopic pregnancy was not diagnosed. Ectopic pregnancy can also lead to recurrent ectopic pregnancies or infertility. A study in Finland found the risk of recurrent ectopic pregnancy to be 20 percent while 15 percent failed to conceive (Makinen et al. 1989) and in Nigeria, a 14 percent recurrent ectopic pregnancy was noted and 37 percent subsequent infertility (Ogunniyi and Faleyimu 1989).

**Consequences in Non-Pregnant Women**

**Chronic Pelvic Pain and Recurrent PID.** Westrom and Mardh report from data collected in Sweden that following PID, about 15 to 18 percent of women experienced chronic, disabling pelvic pain. As noted by Christopher Elias, "The daily impact of chronic pain on the well-being and functional status of women in developing countries, who shoulder the major burden of responsibility for childrearing, agricultural production and market activities can only be guessed." Recurrent PID occurs in 20 to 25 percent of women following PID. Data indicate that each episode of PID increases the chances of recurrent infection and complications. Furthermore, susceptibility to infection with endogenous bacteria such as bacterial vaginosis (BV) becomes more likely with recurrent episodes of PID. And as discussed earlier, BV is important for its role in PID, infertility and adverse outcome of pregnancy.

**Infertility.** This is a frequent and irreversible consequence of PID. The popular definition of infertility is "childlessness" and may be due to tubal blockage, ovulation disorders, uterine or cervical abnormalities or endometriosis (growth of endometrial tissue outside the uterus). The discussion of infertility in this paper however, will center only on tubal infertility due to infection. Tubal blockage as a result of infection associated with PID, poor obstetric care, unsafe abortion and harmful practices such as female circumcision are the most common causes of acquired infertility and are also the ones essentially preventable by public health programs.

Fifteen to 25 percent of women with PID in developing countries become infertile (Wasserheit 1990). The link between infection associated with PID and infertility has been documented by a Swedish study. In the study, 900 women treated for acute PID between 1960 and 1974 were followed until 1979. Overall, 15 percent of the PID patients never became pregnant. Of the women who had severe PID, 30 percent were infertile, compared with 13 percent who had moderate PID and 6 percent with mild PID. The risk of infertility also increases significantly with the number of episodes of PID; occurring in as high as 50 percent of women after a third episode (Westrom and Mardh 1990). And in a standardized clinical investigation of infertility by WHO's Special Program of Research, Development, and Research Training in Human Reproduction on over 10,000 infertile couples in 25 countries, infections accounted
for infertility in 36 percent of the cases in developed countries, 85 percent in Africa, 39 percent in Asia, 44 percent in Latin America, and 42 percent in the Eastern Mediterranean region (WHO 1987). The study also found that a history of STD in the male partner increased the risk of an infection-related infertility diagnosis in the female partner, regardless of whether she had a history of infection. Other studies supported by the same Program confirm that the high levels of infertility in Africa are caused by infections, mainly by STDs such as gonorrhea and chlamydia. Both can cause symptomless infections in women, both are implicated in ascending infections of the reproductive tract, and both carry a risk of tubal blockage and adhesions, which increase with chronicity and reinfection (WHO 1992).

Post-partum infection and post-abortal infection are also important causes of acquired infertility. Post-partum infection causes many maternal deaths in developing countries and leads to secondary infertility in many women who survive. Women are at greater risk of infection leading to secondary infertility if they give birth in unsanitary conditions or without trained attendance and some traditional childbirth practices may also promote infection leading to tissue damage, blockage and secondary infertility. For example, obstetric complications such as prolonged labor, obstructed labor or cephalopelvic disproportion have higher risks of infection than do normal labor, and if not managed properly by trained personnel under sanitary conditions, can ultimately lead to acquired infertility. A 1987 WHO review notes that the risk of secondary infertility in one African country was twice as high among women delivered by an untrained attendant as among those delivered by a trained attendant. Post-abortal infection is another important cause of infertility in some countries. Abortions performed by untrained practitioners are often unsanitary with a high risk of infection. A Malaysian study found signs of infection in 22 percent of abortion-related hospital admissions (Sinnathuray et al. 1980). In a Nigerian study, it was found that the relative risk of secondary infertility occurring in women with previous abortions was 3.6 times higher than in those without previous abortions (Osimusi 1986). These findings suggest the wide prevalence of acquired infertility of infectious origin. Since fertility prognosis after PID is only marginally improved by adequate therapy, PID must be prevented to have a major impact on infertility. Some STD control programs already include PID management in their strategy. In the U.S., better management of PID cases is being promoted in STD control programs through (1) educating physicians and health personnel about PID; (2) disseminating treatment guidelines; (3) encouraging careful follow-up of cases; and (4) encouraging referral and treatment of partners of women with PID (Brown and Weisner 1980).

HIV/AIDS

RTIs, especially those which cause ulcerative lesions such as syphilis, chancroid and genital herpes are believed to be important factors in the acceleration of heterosexual transmission of the human immunodeficiency virus (HIV) which causes AIDS (Table 3). According to a November 1991 press release issued by WHO, three-quarters of global HIV infections have resulted from heterosexual transmission. This mode of transmission is on the rise especially in groups with high rates of sexually-transmitted RTIs and predominates in sub-Saharan Africa, Asia and much of Latin America.

This means women are increasingly being infected and WHO projects that by the year 2000, there will be a cumulative total of 30-40 million HIV infections in men, women and children and that the infection rate among women will be equal to that of men (WHO 1992b). Best estimates of current infection (as of January 1992) are that worldwide, between ten and twelve million are already infected with HIV, of whom over four million are women (Figure 1) and millions more continue to be vulnerable. Women with sexually acquired HIV infection are younger at the time they develop AIDS than are men, reflecting the typical age-gender distribution of sexually transmitted infections. And as with other STDs, the risk per exposure for a woman acquiring the infection from her infected male partner is greater than the risk of acquiring it from an infected female partner. Empirical evidence shows the rate of transmission from male
Table 3: Role of STDs in HIV Transmission

<table>
<thead>
<tr>
<th>Syndrome</th>
<th>Risk Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Genital ulcers</td>
<td>4.7</td>
</tr>
<tr>
<td>Syphilis</td>
<td>3.0</td>
</tr>
<tr>
<td>Genital herpes</td>
<td>3.3</td>
</tr>
<tr>
<td>Chlamydial infection</td>
<td>4.5</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>4.7</td>
</tr>
<tr>
<td>Trichomoniasis</td>
<td>2.7</td>
</tr>
<tr>
<td>Anogenital warts</td>
<td>3.7</td>
</tr>
</tbody>
</table>


to female to be 2-5 times higher than from female to male (Clemetson and Moss 1991).

A variety of factors increase the likelihood of heterosexual transmission for women:

- **Receptive Sexual Partners.** Receptive sexual partners, whether homosexual (receptive anal intercourse) or heterosexual (vaginal intercourse), are at highest risk of acquiring HIV from an infected partner (Chin 1990). This means that an uninfected woman has a greater chance of acquiring HIV from an infected man than does an uninfected man from an infected woman.

- **STDs.** Most available data suggest that both the susceptibility to HIV infection and the infectiousness of an HIV infected individual are increased several fold by the presence of other STDs, particularly those
associated with genital ulceration (Piot et al. 1988; Pepin et al. 1989). Genital ulcers caused by chancroid, syphilis, and herpes simplex virus all have been associated with increased risk of acquiring infection and increased infectivity in those infected. While evidence for the role of other STDs is more preliminary, recent studies in Africa have suggested that non-ulcerative STDs such as gonorrhea, chlamydia and trichomoniasis may also enhance susceptibility to HIV infection. This could have profound implications for women, since these non-ulcerative STDs are far more common than genital ulcer disease (GUD) and like GUD are often asymptomatic in women and are thus unrecognized. For example, in Africa, prevalence rates of gonorrhea in pregnant women may range from 1-15 percent and in prostitutes from 20-60 percent, while the prevalence of GUD in pregnant women ranges from 0.1-2 percent and in prostitutes from 5-15 percent (Goeman, Meheus and Piot, 1991). Furthermore, due to differences in social acceptance and the stigma attached to STDs, women are by and large less likely to seek medical care and more likely to harbor the infections for longer periods of time. The net consequence of this is that an HIV-infected male is more likely than he would otherwise be, to pass on the infection to a susceptible, STD-infected female (Palloni and Lee 1990).

• Gender Mechanisms. Gender mechanisms also have an important impact on women's exposure to the risk of infection and to its consequences. Women are especially vulnerable to HIV infection because of their generally subordinate role in family and society. Cultural and social values tend to lock women into dependant positions, leaving women without bargaining power in their relationship with men from which they seek support in order to attain status as wives and mothers as well as economic support. In most emerging nations, women are fully dependent upon their partners for economic well-being and for their status in society. While this lower status differs in detail and in degree from country to country, it restricts women's ability to protect themselves from sexual transmission of HIV because they often have little autonomy and little say about sexual matters. In most parts of the developing world, women do not negotiate sexual behaviors and most would not dare ask their partners to use a condom. The position women earned as mothers and caretakers carries little power to control or influence behavior that directly affect their own health and well-being.

And in areas where male migration is common, the chances of men getting infected through casual contacts with CSWs during their period of separation from spouses and subsequently infecting their spouses are considerably increased. Similarly, in some areas of Africa where male migration is pervasive and female and children are left behind, the economic support from the migrant husband is oftentimes not enough, necessitating women to use sexual favors as a means of obtaining economic or social support. A study comparing seroprevalence data from East, Central and Southern Africa with patterns of labor migration reveals seroprevalence rates were highest in areas to which migrant laborers were attracted and the next highest rates were in areas where they came from (Hunt 1989).

The problem is compounded in many countries and cultures by women's inferior legal rights and lesser access to health care, education and social services. Accordingly, because of a lack of alternative sources of income and employment or education opportunities, women may resort to prostitution -- a direct outcome of women's deepening poverty and lower status.

Magnitude of the Problem

Sub-Saharan Africa. Africa continues to be the continent most affected by HIV/AIDS with over 6 million estimated HIV-infected adults (one in every 40 adults) and higher prevalence than elsewhere in the developing world (USAID 1992). Heterosexual transmission has been the overwhelmingly predominant mode of spread since the pandemic began and as a result, near equal numbers of men and women are now thought to be infected -- more than three million of each (WHO 1991). Infection rates
in women aged 15-49 have reached as high as 25 percent in some urban areas and high risk groups (WHO 1989) and AIDS is already the leading cause of death among urban women aged 20-40 years (World Bank 1992).

**Latin America and the Caribbean.** Current estimates reveal that between one and two million adults are thought to be HIV-infected in the LAC region (USAID 1992). Extensive spread of HIV probably began in this region in the early 1980s predominantly among homosexual and bisexual men. In some Latin American countries, bisexual men have accounted for up to 25 percent of all reported AIDS cases. Many of these men are married, and as a result increasing numbers of women are now becoming infected. A study done in Costa Rica suggests that the typical woman with AIDS has been infected as a result of the high risk behavior of her companion, of which she usually has had no knowledge. In the last five years, there has been a 40-fold increase in the number of reported AIDS cases in women in Central America (PAHO/WHO 1992), and the number of HIV-infected pregnant women is rising. For instance, in a study in Haiti, approximately 1 in every 10 pregnant women was found to be HIV-infected (PAHO/WHO 1992). WHO estimates that 10,000 HIV-infected children have already been born in LAC.

**Asia.** The incidence of HIV/AIDS is growing more rapidly in South and Southeast Asia than in any other area of the globe and more than one million people are now believed to be infected (USAID 1992). Frequent contact for males with CSWs is the norm in many Asian countries. In these countries, women who are themselves monogamous are becoming infected by their husbands who are engaged in high risk sexual encounters — in Thailand, this is considered to account for more than 90 percent of the infections in females who are not sex workers (World Bank 1993). Several Asian countries including Thailand are also well-known for their well-established commercial sex industries and the Thai government estimates that as many as 30 percent of the nation's 800,000 CSWs are infected as are one percent of women seeking care at public maternal health clinics (USAID 1992). Other Asian countries share the same risks and vulnerabilities. For example in Myanmar, epidemiological surveillance among female prostitutes in 1989 failed to find any infections at all; two years later, 11 percent of those examined during the first half of the year were infected. The same rapid rise was seen in STD patients in Myanmar — from 0.5 percent seropositivity in 1989, the rate rose to 11 percent in the space of two years (Linnan 1992). Furthermore, a number of countries in Asia have substantial populations of intravenous drug abusers — for example, evidence from Thailand documented two separate epidemics: one among drug users and homosexuals and another among CSWs and their clients.

**Implications of HIV/AIDS for Women**

The implications of HIV/AIDS for women takes many forms not limited to the increased mortality among women of reproductive age. Women who are unaware or uninformed of the risks presented by infection with HIV or other STDs or who do not have access to care and prevention, unintentionally contribute to a reversal of the precious gains already made in child survival. Many women will be unable to have children and many more will give birth to infants who will probably be infected. Between 15 and 40 percent of babies born to HIV-infected women are infected by one year of age and it has been assumed that most of the perinatal transmission occurs either before or during delivery (WHO 1992b). It is believed that by the year 2000, an estimated 10 million infants will have been born with HIV (USAID 1992). Furthermore, because women already carry a heavy workload, both in the workforce or in the home as mothers, home makers and caregivers, the added burden of caring for AIDS-infected family members, plus the fact that many women can themselves become ill and die creating a generation of orphans, is placing established social structures under stress and social disruption. And among orphans left behind, there will be increased childhood mortality, because of illness in the primary caretakers and other family members in addition to the overall negative economic effects of the illness on the household.
HIV and Pregnancy

The decision regarding whether or not to bear children is highly complex. The presence of HIV infection is likely to complicate this decision even further. Infected women should be fully informed regarding the health risks of pregnancy in the presence of HIV and should also have access to a full range of effective methods of contraception to prevent pregnancy. In addition, condoms should be used consistently and correctly to minimize the risk of transmission.

HIV-infected women or women at high risk who do become pregnant should be advised about the risks of having an infected child. In addition, they and their partners should be offered testing. Unlike serologic testing of populations (e.g. populations of pregnant women and newborn babies) where informed consent is not required because the population is sufficiently large and individuals or sub-groups cannot be identified, HIV testing of pregnant women and their partners must be voluntary — done with free and informed consent and accompanied by pre- and post-test counseling and a guarantee of confidentiality.

A woman who decides not to continue the pregnancy should have access to safe abortion services where legal, but the final decision must be made by the woman herself. In particular, where termination of pregnancy is not against the law, they should receive adequate counseling and support to enable them to make an informed choice. There is a need for strengthening the training of health care providers at all levels to enable them to provide on-going support, counseling and care. Governments need to be aware of the critical necessity for such support and to fulfill their responsibilities to make it available.

Mother-to-Child Transmission

In industrialized countries, there has been a striking increase in mother-to-child (perinatal) transmission, in parallel with the increase in the number of infected women. In the U.S. for example, the number of pediatrics cases rose 4-fold between 1985 and 1990, while in Europe, they increased 5-fold over the same period (WHO 1991). Most HIV-infected women are of childbearing age, and worldwide, approximately one in every four babies born to infected women is itself infected (WHO 1991). As with sexual transmission, pregnant women who are in a more advanced clinical stage are more infectious for their offspring (Ryder et al. 1989; Lallement et al. 1989) but perinatal transmission can also occur in pregnant women who are asymptomatic (Minkoff 1987).

The relative contributions of HIV transmission early and late in pregnancy (transplacentally) and of transmission around the time of delivery (through contact with maternal blood or secretions) have not been established and more research is needed. Transplacental infection of the fetus as early as 15 weeks gestation has been documented whereas in some children the virus is not detectable until they are several months old.

Breastfeeding and HIV Transmission

The role of breastfeeding in HIV transmission also has to be clarified. In August 1991, the results of a study in Rwanda were published in the Lancet, reporting on HIV transmission through breastfeeding among a group of women who were infected with HIV after delivery. Individual cases of transmission through breastfeeding have also been documented (for instance, where women have been infected postpartum through a transfusion of HIV-contaminated blood). However, the magnitude of the risk of HIV transmission through breast-feeding, especially among women already infected during pregnancy is not known as yet — randomized controlled studies are underway in Kenya, Rwanda and Haiti to determine the actual risk. Recent studies suggest however, that the risk was substantial (about 30 percent) among
the small numbers of mothers who developed an HIV infection while the infant was nursing.

Based on available data, WHO issued a policy statement in September 1991, which emphasized that breastfeeding should continue to be promoted, supported and protected in all countries irrespective of the prevalence of HIV infection in the country. If socio-economic conditions permit, safe and nutritionally adequate alternatives to breastfeeding can be considered in some settings, but in many circumstances, especially in developing countries, the safe and effective use of alternatives is not possible, and breastfeeding by the biological mother should continue to be the method of choice. This is because the baby’s risk of HIV infection through breast milk is likely to be lower than its risk of death from causes such as diarrhea, pneumonia and other childhood infections if it is not breastfed.

LINKAGES WITH CONTRACEPTIVES

It is now clear that contraceptives have two main benefits: prevention of unplanned pregnancy and protection against RTIs. Unfortunately, the most effective choices to prevent pregnancy currently are not necessarily the most effective means to prevent RTIs. The HIV epidemic has brought into focus the predicament that effective contraceptives — IUDs, oral contraceptives (OCs), injectables and implants — provide no protection against STDs (including HIV), and this dilemma will be the biggest obstacle programs will face in integrating family planning and STD and HIV/AIDS services together.

Intrauterine Devices (IUDs). While IUDs are effective at pregnancy prevention, they may increase the risk of pelvic infections. Furthermore, they do not offer protection against the transmission of HIV or other STDs. Although very little data exist on the relationship between IUDs and HIV, the possible association between use of IUDs and the development of PID is a well known topic. Therefore, they should probably not be recommended for high-risk or HIV-infected women.

Condoms, Diaphragms and Spermicides. These methods while having lower rates of preventing pregnancy than do IUDs, are more effective at preventing sexual transmission of RTIs and barrier contraceptives, particularly condoms, have emerged as a central prevention strategy. A growing number of studies confirm that latex condoms provide an impervious barrier to STD pathogens including HIV, if used consistently and correctly. For example, three cross-sectional studies in the U.S. showed lower rates of HIV seropositivity in high-risk women whose partners regularly used condoms (Padian 1987; Quinn et al. 1987; Smiley et al. 1988). Studies also show that spermicides kill or inactivate STD pathogens — the best designed investigation of spermicides to date supported their clinical efficacy in protecting against gonorrhea and chlamydia (Louv et al. 1988). However, for HIV prevention, the protective effect of spermicides needs to be balanced against their potential irritant effects leading to risk of local inflammation and micro-ulceration. It is not clear how much or how frequently spermicides can be used before the mucosal lining of the vagina becomes irritated, but most experts believe that spermicides should not be promoted for use among women having several partners a day. The diaphragm is another contraceptive device known to protect against STDs, by providing a mechanical barrier to the cervix, resulting in protection against STDs that infect the cervix (gonorrhea, chlamydia). The diaphragm is nearly always used with a spermicide. In four case-control studies, women who used diaphragms were at least 50 percent less likely than those who used no method to have cervical gonorrhea, trichomoniasis or tubal infertility or to be hospitalized for PID (Cates and Stone 1992).

Oral Contraceptives. The influence of oral contraceptives (OCs) on STDs, PID and reproductive sequelae remains unsettled. One study which was carried out among 418 prostitutes in Kenya, found an increased risk of HIV infection among OC users and provided support for the hypothesis that OC use
could facilitate HIV transmission (Plummer et al. 1991). At present, most experts agree that any increased risk of HIV infection observed in OC users in that study, probably is linked to a variety of biases such as women in the comparison group using barrier methods, which would falsely elevate the OC risk among women in the study group not using barrier methods. But this issue requires further study before OC use can be considered a risk factor. Biologically possible mechanisms that have been suggested include: increased cervical ectopy (a condition in which the columnar cells which normally line the cervical canal extend beyond the cervical os, thus resulting in increased risk of exposure to infection) caused by OC use; the well-documented increased risk of chlamydia infection among OC users increasing the susceptibility to HIV infection probably through recruitment of inflammatory cells; and the direct immunosuppressive effects of oral contraceptives (Plot et al. 1988).

**CURRENT APPROACHES AND FUTURE OPTIONS**

*Information and Education — Using the Right Approaches*

Information and education programs are often the first step in national prevention efforts. But, compared with men, women know less about STDs and HIV/AIDS, learn about it later, and are less likely to hear about them through mass media approaches. According to surveys in Kenya (Ngugi et al. 1988), Uganda (Forster and Furley 1989) and Zaire (Bertrand et al. 1989) women often hear about STDs and HIV/AIDS from other people, whereas men get more information from radio and newspapers. Experience has shown that, although labor-intensive and time consuming, the best way to reach women is through interpersonal channels of communication: personal contacts, either on a one-to-one basis or via group work involving other women. A good example of group work is the Society for Women and AIDS in Africa (SWAA) and its national branches. Women can be approached at places where they usually meet such as clinics, schools, market squares and in fields for agriculture activities. Other useful communication channels include grass roots organizations such as market women associations, women's media associations, women's clubs, church groups, etc. These organizations should be recognized, encouraged and AIDS prevention programs should make full use of them.

It is also important that raising awareness activities target women of all ages — not only women of childbearing age but also young girls before they become sexually active and last but not least, older women who often take on the roles of educators and advisors of the young.

*Increased Emphasis on Gender Relations*

In virtually every country where AIDS has been reported, the national government has undertaken some effort to make people aware of AIDS, although it is less clear how much they contribute to changing behavior. A 1991 WHO Global Program on AIDS (GPA)-commissioned review of 13 studies carried out in 6 countries showed that although there were no significant changes in some risk behavior such as reducing the number of sexual partners (except in one country) due to education, other types of behavior change such as condom use did increase — substantially in fact, in some countries (WHO 1992b). But it must be noted that the process of behavior change involves many complex interactions along a continuum of attitudes, beliefs, values and motivations — and the social context of sexual behavior must be taken into account before the end goal of sustained behavioral change can be achieved.

Thus, while information and education efforts are important components of all STD and HIV/AIDS control and prevention programs, they will not be effective without focusing attention on the issues of gender relations that provide the basis for the social context of sexual behavior.
In most societies, there is a significant power differential between men and women, both in the society at large and within the family. The social status of women and the predominant gender power relations influence women’s vulnerability to HIV/AIDS and STDs in important ways. In societies where a woman’s status is defined only in terms of her relationships to men -- wife, mother -- women tend to be less educated, economically and socially dependent on men, lack power in interpersonal relationships and are at increased risk for STDs and HIV/AIDS because of the sexual behaviors of their partners. Thus, the importance of gender relations should be recognized and initiatives to adjust gender power relations and attitudes towards women need to be incorporated into STD and HIV/AIDS policies and programs.

In this context, two strategies are increasingly being recognized as essential, if programs for STDs and HIV/AIDS are to be most effective in the long run. The first strategy is raising the status of women and the second is changing lifelong attitudes to men’s and women’s traditional gender roles. These strategies are inter-linked and are complementary to each other, further magnifying their synergistic impact.

**Raising Women’s Status.** This would involve focusing on women’s education and vocational training to enhance women’s economic independence. It would also entail reducing economic independence through measures such as increased labor force participation and access to income, land and credit. Empowerment strategies already proven effective will need to be identified and applied in the context of sexually transmitted infections and further research to raise women’s status and promote empowerment of women should continue to be a high priority.

**Changing Attitudes to Traditional Gender Roles.** Lifelong attitudes to men’s and women’s traditional gender roles need to be changed. Men will need to be intellectually and emotionally released from the cultural and social entrapments that require women to be submissive. They will need to see the advantages to themselves and their offspring in a new relationship with women. Starting at home and continuing through formal school programs or public education programs, attention should be focused on boys and girls and men and women simultaneously, to initiate a move towards greater gender sensitivity, to recognize a new perspective that seeks to enhance rather than to overpower the other. The nature of STD and HIV/AIDS transmission requires a shared response that necessitates the involvement of both men and women to change lifelong attitudes.

**Community Mobilization and Commitment**

The theme of the 1992 World AIDS Day was "AIDS: A Community Commitment" and it has been proven many times that community commitment can make a real difference. Programs are strengthened by the support of the community and people are more likely to change behaviors when they are encouraged to do so from a member of their own group. Without community involvement, it is unlikely that behavioral messages will lead to any significant change in actual behavior. One example is the successful community-based program implemented in Bulawayo, Zimbabwe. The program began in 1989 as a pilot project organized by Bulawayo City Council members who mobilized the community to implement the prevention program. The project demonstrated the limitations of strategies focused on individuals and laid out mechanisms for overcoming obstacles to behavior change through community involvement (Lamptey 1991).

Similarly, results of a study in the U.S. showed that it is possible to induce risk behavior change experimentally by intervening with a socially influential subset of a population. The study undertaken in a single U.S. city, selected because of high rates of risk behavior in its gay population, found that frequency of risk practice was reduced in the population, following intervention by key opinion leaders in the community who were trained to serve as behavioral change endorsers to their friends and
STD and HIV/AIDS prevention efforts can be greatly enhanced by recognizing the importance of community dynamics and by developing an understanding of the process by which communities can introduce, promote and adopt new behavioral standards and social norms which can lead to a lower risk of transmission. It is critical that more research be directed to the question of how best to produce these community-mobilized behavioral changes.

**Behavioral Interventions**

Interventions to prevent the transmission of STDs and HIV/AIDS through behavior change (sexual and health seeking behaviors) should be an integral part of any prevention and control program. Yet, in most developing countries, experience with behavioral interventions is limited and hardly any information is available on their efficacy in different societal contexts. More research is essential: (1) to define predominant norms and values regarding sexuality as well as specific risk behaviors in population subgroups; (2) to identify behavioral interventions that are culture-specific and reflect an understanding of the norms and "motivating" factors in the subgroups of each society and (3) to evaluate different behavioral interventions and their relative effectiveness with different target groups in different societies.

**Integrated Services**

Given the preponderance of data regarding the impact of RTIs on the reproductive health of women and the association of STDs with HIV transmission, it is essential that efforts to control and prevent STDs and HIV/AIDS be closely integrated, while simultaneously strengthening the primary health care system.

Vertical STD and HIV/AIDS control programs offer STD/HIV/AIDS services exclusively, are staffed by personnel with specialized training and are preferred by specialists. However, a major disadvantage of vertical programs is their inability to reach women in the general population. Since STDs in women are often asymptomatic and clinical manifestations are nonspecific, women with an STD will have no particular reason to go to an STD clinic, although they may decide to go to a primary health care facility because of urogenital problems or abdominal problems. Furthermore, the stigmatizing attitude in many STD clinics prevents women from seeking care in them. And when women go to a primary health care clinic to seek treatment for symptoms such as vaginal discharge, genital ulcers or lower abdominal pain, they are usually referred to a distant STD clinic. By integrating STD and HIV/AIDS services in prenatal and MCH clinics and/or family planning clinics, women will be able to avoid the social stigma of having to seek treatment at a STD clinic or the need for a follow-up visit to another facility. Moreover, with accessible comprehensive reproductive health services, it will be easier to identify and care for the many women who are infected but are asymptomatic.

Primary health care services are existing access points to reach a broader community of women and these services can do much for STD and HIV/AIDS control and prevention. Family planning workers are now being called upon increasingly to deal with growing rates of STDs including AIDS. By counseling and promoting barrier contraceptives at family planning (FP) clinics, family planning programs can help prevent STD transmission — and providing other STD services such as diagnosing and treating STDs also offers significant opportunities for synergistic effects. For example, helping women have healthy babies by preventing or treating the infection is likely to increase women's acceptance of family planning. Also, FP clinics are the only available facilities that routinely perform genital and pelvic examinations and they may also be the only source of medical care for many young, sexually active women.
Conversely, integrating family planning services in STD clinics can also be beneficial. A survey of 516 consecutive clients at a Baltimore City STD clinic in the U.S. revealed that 63 percent would be interested in receiving contraceptive services at the STD clinic. Only 54 percent were contracepting, and only 26 percent were aware that barrier contraceptives and spermicides protect against STDs although most knew that condoms are protective. Based on the survey, the Baltimore City Health Department has begun family planning services at its STD clinics (Anonymous 1988).

Integration would entail the need for re-allocated resources, funding, technical assistance, training of staff and educational materials as well as the creation of policies. It will be necessary not only to create program linkages at the field levels but also to integrate planning and implementation at the top levels. Some family planning agencies working in areas of low contraceptive acceptance fear that involvement in STD/AIDS-related activities could stigmatize their services and keep potential clients away, while some health personnel feel the addition of new responsibilities could overwhelm the staff within current structures. These restraints indicate a lack of information on service integration. Models of appropriate integration strategies need to be developed and more studies on impact as well as cost-effectiveness of integrated services need to be done.

STD and HIV/AIDS control and prevention programs should include a spectrum of services such as: (1) prevention activities (education, condom promotion and distribution); (2) fast and reliable diagnostics; (3) appropriate and affordable treatment; (4) culturally-sensitive partner notification, referral and treatment activities; (5) counseling services; (6) training programs for service providers; and (7) surveillance and monitoring.

**Targeted Approaches**

The emphasis and approach of STD and HIV/AIDS control and prevention programs vary according to the population at greatest risk. Where funding is very limited, programs have been targeted at core groups. Core groups are the reservoir for many STDs and their frequent change of partners permits STD pathogens to persist in a community or to increase rapidly through continuous dissemination (Ronald and Aral 1992). They generally consist of commercial sex workers (CSWs), clients of CSWs and their partners, and others in society who are likely to have multiple sex partners. It has been documented that control programs targeted at core groups are the most cost-effective and will ultimately have the highest impact on public health -- for example, an intervention in the core group will have a ten-fold or more effect than one implemented in a non-core group (World Bank 1993), but as the prevalence of STDs and HIV/AIDS in the general population increases, the wisdom of depending primarily on interventions targeted exclusively at core groups leaving transmission in the general population un-addressed becomes questionable.

The ideal situation would be to have adequate resources to develop prevention and control programs to meet the needs of all population groups, but presently however, this is not yet possible. Therefore, it is crucial to balance prevention and control efforts so that all resources are not targeted exclusively at core groups perceived to be at high risk. Indeed, if programs must target a specific group because of limited funding and resource scarcity, it could be argued that the highest priority should be children 10 to 14 years old. Demographically, they represent a large fraction of the population of the developing world and currently has the lowest HIV seroprevalence rate. This 10-14 age group should be one of the highest priorities in terms of prevention, particularly for girls, since they will soon pass through adolescence during the AIDS era and enter the most infected age group (15-29).
Promoting Condoms

Condom promotion must be an integral part of all prevention and control programs, whether they be programs targeted at core groups or at the general population. Strong evidence exists that condom use protects against HIV infection. The more consistently condoms are used, the more protection they provide. In a Kenyan study, none of the prostitutes who used condoms consistently was infected compared with 56 percent of those using condoms less than half of the time and 72 percent of non-users (Ngugi et al. 1988). A study in Zaire followed the sexual partners of 144 people with HIV infection for an average of six months. Among the 85 percent who used condoms regularly, only one partner became infected. In contrast, three of the 15 percent who did not use condoms regularly became infected (Kamenga et al. 1989). And unpublished data from the University Teaching Hospital in Lusaka, Zambia, showed an HIV-infection rate of 3.5 per 100 couple-years among couples who reported using condoms at every intercourse; among less consistent condom users, the infection rate was 10.1 per 100. Experience has shown that informed people can and do choose to limit risky behaviors and adopt safer sex practices. Aggressive condom promotion combined with information and education to reinforce prevention messages do indeed increase condom use.

Motivating Men’s Participation

A crucial intervention that needs to be included and implemented in programs concerning women’s reproductive health is to encourage and motivate greater participation by men. For example, family planning programs have focused mostly on women and the lack of equitable participation by men has resulted in their ignorance of contraceptive methods and inability to help their female partners make informed choices. Given that the one currently available effective means for preventing STDs and HIV transmission, i.e. condoms, requires the full and dedicated participation of the male partner, motivating and including men in programs concerning women’s health will be essential to the success of prevention programs.

Preventing Perinatal Transmission

Prevention can be achieved through: (1) preventing HIV infection in women of reproductive age and (2) making available a wide range of contraception to HIV-infected women, to avoid pregnancy. And HIV-infected women who voluntarily decide to terminate their pregnancies in countries where this option is legal and safe will also avoid mother-to-fetus/infant transmission. But, in order for women to make such choices, they need to know their HIV status. In regions where HIV prevalence is high, the best policy would be to do voluntary HIV testing and counseling of all reproductive-age women and their partners, or at the least, pregnant women and their partners. Voluntary HIV testing with counseling has been shown to promote effective risk reduction in some high risk groups in the United States. A study carried out in Kigali, Rwanda, also showed that confidential HIV testing and counseling was associated with increased use of condoms and reduced rates of gonorrhea and HIV in urban Rwandan women. Twenty-six percent of the women in the study brought in their male partners for HIV testing and counseling; and when compared with couples in whom only the woman was tested, couples in whom both partners were tested were twice as likely to use condoms. This study also emphasizes the point that targeting men is fundamental in AIDS prevention programs, especially in many developing countries, where women are not in a position, for cultural and economic reasons, to insist on condom use (Allen et al. 1992).

In addition, in areas where blood for transfusions may be infected with HIV and where blood screening is not possible, strategies to reduce the need for blood transfusions during pregnancy or at the time of delivery such as preventing and combatting anemia in pregnancy, eliminating unnecessary transfusions,
encouraging use of plasma expanders which are safer, are especially important to reduce the risk of HIV infection in women and its subsequent perinatal transmission.

When transfusions are absolutely necessary, it is imperative to provide a screened, safe blood supply. In areas where blood banks and laboratories exist, screening of donated blood can be added for a cost of about 5 percent of the overall cost of transfused blood. But in many parts of the developing world where no blood banks exist, transfusions are often done on an emergency basis directly from donor to recipient. For such circumstances, rapid test strategies for HIV are urgently needed. An example is the HIV dipstick, developed by the Program for Appropriate Technology for Health.

**Female-Controlled Prevention Technologies**

A very high priority needs to be given to developing and field-testing a variety of products for women to use and control for prevention of pregnancy or STD and HIV/AIDS. The products should be inexpensive and designed in a way that women should be able to use them with or without their partner’s knowledge and consent. Recently, the U.S. Food and Drug Administration (FDA) approved the female condom (a vaginal pouch) for use in the United States, but emphasized that data demonstrating its effectiveness in preventing STDs, including HIV, were limited. Price is another concern; it currently costs about three times that of the male condom and furthermore, some studies involving user satisfaction show the female condom is only moderately acceptable.

Currently, research is being carried out to assess the safety of vaginal virucides with anti-HIV activity. If successful, it would be a major breakthrough, because this would allow women to protect themselves from HIV infection by the application of a vaginal cream or jelly. Nevertheless, continued technology research is essential to develop a wider range of products which are inexpensive and simple to use.

**Focusing on Women as Recipients of Infection**

To date, research and surveillance have targeted mainly the role of women as transmitters rather than as recipients of infection. The focus has primarily been on CSWs and transmission from them to their male partners, and on pregnant women and transmission from them to their offspring. The second decade of HIV/AIDS research work need to shift focus: from the concept of women as transmitters to women as recipients of infection. The epidemic among women should no longer be relegated only to women presumed to be at "high risk." Research and surveillance should include a wider range of women from the general population -- women who may not perceive risk in their personal situations but who may unknowingly be at risk -- taking into account the many complex factors that determine women's sexual and health behavior and the range of services and information required to empower women to protect and maintain their health.

**Support Networks**

Strong grass roots organization and support networks will be critical to the success of national programs. In Uganda, the AIDS Support Organization (TASO) formed by community volunteers has helped many Ugandans to live positively through counseling, information, care and other assistance. Trained TASO counsellors (many of whom are themselves HIV-positive), visit clients at home or meet them at TASO’s day center for counseling and support. Basic medication is also provided free of charge to clients as are material assistance such as milk powder and eggs.

Another example is the Society for Women and AIDS in Africa (SWAA) which was established in 1988.
SWAA is an international federation with branches in 27 African countries: for example, the SWAA branch in Sierra Leone, the SWAA branch in Nigeria, the SWAA branch in Cameroon, etc. SWAA branches operate at three levels — the executive level (unpaid volunteers) which provides the links between SWAA branches and donors and NGOs working in AIDS-related activities, the regional level which facilitate the work of national branches in their regions, and the national level which is the major operational base. The branches are semi-autonomous and have their own executive committees, programs and funding. Information exchange between branches takes place through annual conferences, general meetings and via the regional coordinators. To date, SWAA has held four federation conferences, the latest in Tanzania in 1992. Activities of SWAA branches include: (1) establishment of women's support centers; (2) counseling and assistance for sero-positive women; (3) youth-targeted activities; (4) training of IEC workers on women and AIDS issues and (5) needs assessments and care for AIDS orphans. Members of SWAA are now recognized as authorities on women and AIDS issues, not only at the national level but at the international level also. For example, the keynote opening address at the VII International Conference on AIDS in Amsterdam was delivered by the president of the SWAA. (WHO 1992a).

Health Care and Support

STD and HIV/AIDS control and prevention programs have yet additional challenges posed by weak health infrastructures in developing countries, where the provision of health care is already hampered by too few hospitals and clinics and critical shortages of equipment, supplies and staff. Uganda, for example, is estimated to have one doctor for every 21,000 patients, compared with one for every 470 patients in Western Europe (USAID 1990). Under conditions such as these, the AIDS epidemic is intensifying the competition for scarce resources.

Nevertheless, provision of health care and support to AIDS patients are also critical. Humane and dignified care of AIDS patients is expensive. The harsh reality is that antivirals or antibiotic therapies for AIDS-related opportunistic infections are not going to be readily available in developing countries, but these conditions can no longer be ignored. A feasible solution identified has been the establishment of community care systems: community networks, neighborhood associations, women's groups, professional associations, unions — some with more outreach, some with stronger links to hospitals, some from the public sector, some delivered by NGOs — from all sectors of society, from all walks of life sharing the responsibility and the burden of care. Different models of community care will be needed for different communities and international leadership and assistance is essential to help countries assess the needs and managerial capacity of their health care systems as well as their community care systems. International leadership and assistance will also be essential to identify and develop affordable, relevant approaches across the care continuum from hospital to home, not only to deal with the influx of HIV-related cases, but to provide care and support for the very young and elderly left behind.

CONCLUSION

STDs and HIV/AIDS necessitate the involvement of both men and women in partnership against the further spread of sexually transmitted infections. Men and women share both the burden and the responsibility for prevention. These infections are not purely "medical" and "health" issues that can be influenced by "medical" and "educational" interventions alone. They require a multi-sectoral collaborative approach across various government departments and ministries, the private sector, different organizations as well as the community. An effective response to the epidemic will need a coordinated effort and a deeper understanding of the social, cultural and behavioral issues underlying the continued spread of infection.
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