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*Give Children Hope
in a World with AIDS*



WORLD AIDS DAY • 1 DECEMBER 1997

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RESOURCE BOOKLET

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NEW UNAIDS / BRIEFING

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CDC graphs / updates ('96 / '97)

Divider Title: _____

A STATISTICAL PORTRAIT OF THE HIV/AIDS EPIDEMIC

OFFICE OF NATIONAL AIDS POLICY

GLOBAL PICTURE:

- UNAIDS estimates that there are 30.6 million persons living with HIV/AIDS
- Since the epidemic's onset, 11.7 million adults and children have died of AIDS; 2.3 million will die in 1997
- 1997 will witness a total of 5.8 million new HIV infections, equivalent to 16,000 per day
- The majority of new infections is among 15-24 year olds
- 75-85% of new infections are due to unprotected sexual intercourse (70-75% heterosexual, 5-10% male-male), 5-10% are due to intravenous drug use, and 3-5% result from blood transfusions
- 90% of all HIV+ persons live in developing countries, where access to medical care is severely limited

ACROSS THE NATION:

- Over 600,000 AIDS cases have been reported to the CDC through June, 1997
- CDC estimates that between 650,000 and 900,000 Americans are currently living with HIV, with between 40,000 and 60,000 new infections occurring each year
- Over half of new HIV infections are due to sexual intercourse, one quarter result from intravenous drug use
- AIDS incidence declined for the first time in 1996 by 6%; however, incidence rose by 9% among persons infected heterosexually, and the number of new HIV infections continues to increase
- AIDS related deaths declined by 23% in 1996, due largely to access to effective combination drug therapy
- Number of people living with AIDS rose by 11% in 1996
- AIDS is the second leading cause of death among adults ages 25-44
- AIDS is the leading cause of death among all federal & state prisoners

STATUS OF WOMEN:

- Women account for 42% of adults living with AIDS, 20% in the United States
- Major mode of HIV transmission to women is unprotected heterosexual intercourse
- In 1996 AIDS incidence rose 2% among U.S. women even though it declined 8% among men
- The total domestic increase in AIDS incidence among women since 1991 is 70%, leaving women the fastest growing group with AIDS in the U.S.

AMERICAN COMMUNITIES OF COLOR:

- In 1996, 62% of all persons with AIDS (reported) and over 79% of women with AIDS cases were minorities
- AIDS incidence is 3 times higher among Latinos and 7 times higher among blacks than whites
- Incidence is 6 times higher among Latino women and 17 times higher among black women than white women
- More than three quarters of all pediatric AIDS cases are in racial and ethnic populations

PERINATAL TRANSMISSION OF HIV:

- 2000 babies are born HIV+ in the United States each year, equivalent to 5 per day
- There is a 25% probability that an HIV+ woman will transmit the virus to her unborn child
- Treatment with AZT reduces the likelihood of perinatal transmission to 5%
- Perinatal transmission dropped 43% in the U.S. between 1992 and 1996 due to increased use of AZT

AIDS AMONG CHILDREN & YOUTH:

- 1.1 million children under the age of 15 are living with HIV/AIDS around the world
- Since the epidemic's onset, 2.7 million children have died of AIDS; 460,000 will die in 1997, 1200 per day
- 1997 will witness a total of 590,000 new HIV infections among children, equivalent to 1600 per day
- If the spread of this virus is not contained, 40 million children will be orphaned by AIDS worldwide and global infant mortality will rise 75% due to AIDS by 2010
- In the United States, half of all new HIV infections are among persons under the age of 25
- AIDS is the sixth leading cause of death among 15-24 year old Americans

**THE SIGNIFICANCE OF THE NEW UNAIDS INFORMATION:
A COMPARISON OF PREVIOUS AND CURRENT ESTIMATES**

<i>Previous Estimate[†] – 1996</i>	<i>Revised Estimate – 1997</i>
22.6 million persons currently living with the HIV virus	30.6 million persons currently living with the HIV virus
3 million new infections (equivalent to 8500 per day)	5.8 million new infections (equivalent to 16,000 per day)
1.5 million new infections among persons aged 15-24	2.9 million new infections among persons aged 15-24
1.5 million deaths due to AIDS	2.3 million deaths due to AIDS
6.4 million cumulative deaths due to AIDS	11.7 million cumulative deaths due to AIDS
1000 children die each day of AIDS	1200 children die each day of AIDS
1000 children are infected with HIV each day	1600 children are infected with HIV each day

[†] based on UNAIDS Press Releases of February and June, 1997

Other Facts to Note:

- Cumulative number of child deaths due to HIV/AIDS: 2.7 million
- Child deaths due to HIV/AIDS in 1997: 460,000
- Cumulative number of AIDS orphans: 8.2 million

The UNAIDS estimates also highlight regional disparities in the epidemic and the dramatic impact of HIV/AIDS on child mortality and overall life expectancy in Sub-Saharan Africa.

TALKING POINTS FOR GLOBAL AIDS INCREASE

11/26/97

The UNAIDS Program is releasing new estimates of the number of persons infected with HIV throughout the world. These estimates show an increase from 3 million new infections per year to 5.8 million per year. Over 90% of these infections are occurring in the developing world.

What does this mean?

These new estimates show that the epidemic is much larger than expected, primarily in the developing world. Part of this increase is attributable to the spread of HIV, and part is due to improved data collection by UNAIDS and the World Health Organization.

What is the impact?

This epidemic continues to take a devastating human toll. And in many of the developing countries in which it is raging, AIDS represents a major threat to economic stability because it is decimating people in their most productive years.

What is the US response?

The United States has always been a leader in the global fight against AIDS. We are the largest contributor to UNAIDS, and one of the principal sources of prevention and care through USAID. In addition, the investment made in AIDS research will benefit not only those in this country but around the world. President Clinton's recently announced AIDS Vaccine Initiative, in which he established a goal of finding a vaccine against HIV within ten years, is absolutely critical. This epidemic cannot be stopped without a vaccine, and the United States is leading the world in this quest.

OTHER QUESTIONS THAT MAY BE RAISED RELATING TO HIV/AIDS

With the new treatments and the decrease in AIDS deaths, are we seeing the end of the epidemic?

The new drug treatments have helped many people with HIV and AIDS live longer and more productive lives, but they are a treatment, not a cure. We do not have any evidence that the rate of new infections has slowed this country. Globally, UNAIDS just released its estimate of new annual infections, which nearly doubled from 3 million per year to 5.8 million per year. More accurately, we are at the end of the beginning and not the beginning of the end. We must not let the good news of these promising treatments make us complacent.

What is the Administration doing on needle exchange?

This Administration fought to maintain the authority of the Secretary of HHS to remove the restriction on allowing states to use federal funds for needle exchange programs. The Secretary is gathering the scientific data on this issue in compliance with the directive of Congress. Decisions of this kind should be made by public health experts and scientists.

What is the US doing to help with the global epidemic?

The United States is the largest contributor to the UNAIDS program, a multinational effort to address the global AIDS pandemic. In addition, the USAID program through the Department of State is a leader in the provision of technical assistance, support, and prevention efforts in the developing countries where the epidemic is raging. The President's recent HIV Vaccine Initiative established a goal of finding a vaccine against HIV within ten years, and is the best hope of stopping this epidemic.

Are AIDS programs getting an unfair proportion of funding?

No. The AIDS epidemic is special. It is a contagious disease that strikes disproportionately in the young and the poor, and has a devastating impact on those who are in the most productive years of their lives. In addition, our investments in AIDS research provide a wealth of basic science information that benefits all diseases, including cancer and Alzheimer's.

How is the Administration helping to expand access to the new drug treatments?

We have increased funding for the AIDS Drug Assistance Program 450% since 1992, and have tripled funding for the program that helps people access and maintain care (Ryan White CARE Act). This is a growing challenge that will require a partnership between the federal, state and local governments and private industry.

Report on the Global HIV/AIDS Epidemic

D E C E M B E R 1 9 9 7



UNAIDS *Global*
HIV/AIDS and STD
Surveillance **WHO**

Surveillance of HIV/AIDS and STDs is conducted as a joint effort of UNAIDS and WHO. The data in this report have been compiled by the UNAIDS/WHO Working Group on Global HIV/AIDS and STD Surveillance in collaboration with National AIDS Programmes.

Global summary of the HIV/AIDS epidemic, December 1997

People newly infected with HIV in 1997	Total	5.8 million
	Adults	5.2 million
	Women	2.1 million
	Children <15 years	590 000
No. of people living with HIV/AIDS	Total	30.6 million
	Adults	29.5 million
	Women	12.1 million
	Children <15 years	1.1 million
AIDS deaths in 1997	Total	2.3 million
	Adults	1.8 million
	Women	820 000
	Children <15 years	460 000
Total no. of AIDS deaths since the beginning of the epidemic	Total	11.7 million
	Adults	9.0 million
	Women	4.0 million
	Children <15 years	2.7 million
Total no. of AIDS orphans¹ since the beginning of the epidemic		8.2 million

¹ Defined as HIV-negative children who lost their mother or both parents to AIDS when they were under the age of 15.

Global estimates

□ HIV: close to 16 000 new infections a day

New estimates show that infection with the human immunodeficiency virus (HIV) which causes AIDS is far more common in the world than previously thought (see box on page 12). UNAIDS and WHO estimate that over 30 million people are living with HIV infection at the end of 1997. That is one in every 100 adults in the sexually active ages of 15 to 49 worldwide.² Included in the 30 million figure are 1.1 million children under the age of 15. The overwhelming majority of HIV-infected people – more than 90% – live in the developing world, and most of these do not know that they are infected (see page 10).

Around 16 000 new HIV infections a day in 1997

- More than 90% are in developing countries
 - 1 600 are in children under 15 years of age
 - About 14 000 are in adults, of whom:
 - over 40% are women
 - over 50% are 15–24-year-olds
-

This year's estimates also point up the continuing rapid spread of HIV. Altogether, 5.8 million people are believed to have acquired HIV infection in 1997, 590 000 of them children. Overall, that is equivalent to nearly 16 000 new infections every day of the year, including those in children infected at birth or through breastfeeding.

Assuming that currently unbroken trends in many parts of the world will continue, it is estimated that more than 40 million people will be living with HIV in the year 2000.

An estimated 2.3 million people died of AIDS in 1997. These deaths represent a fifth of the total 11.7 million AIDS deaths since the beginning of the epidemic in the late 1970s. Of the people who died of AIDS this year, 46% were women and 460 000 were children.

² In this report, adults are defined as those aged 15–49, children as those under 15. To make it easier to compare prevalence rates (proportion of people currently living with HIV/AIDS) between countries and regions, the total number of adults aged 15–49 living in a given country or region is used as the denominator.

Regional round-up

It is becoming increasingly clear that, although almost every country is touched by HIV, the virus spreads very differently in different parts of the world. There are even important differences in patterns of spread in different communities and geographic areas within the same country.

Regional HIV/AIDS statistics and features, December 1997

Region	Epidemic started	Adults & children living with HIV/AIDS	Adult prevalence rate ³	Cumulative no. of orphans ⁴	Percent of HIV-positive adults who are women	Main mode(s) of transmission ⁵ for adults living with HIV/AIDS
Sub-Saharan Africa	late '70s - early '80s	20.8 million	7.4%	7.8 million	50%	Hetero
North Africa & Middle East	late '80s	210 000	0.13%	14 200	20%	IDU, Hetero
South & South-East Asia	late '80s	6.0 million	0.6%	220 000	25%	Hetero
East Asia & Pacific	late '80s	440 000	0.05%	1 900	11%	IDU, Hetero, MSM
Latin America	late '70s - early '80s	1.3 million	0.5%	91 000	19%	MSM, IDU, Hetero
Caribbean	late '70s - early '80s	310 000	1.9%	48 000	33%	Hetero, MSM
Eastern Europe & Central Asia	early '90s	150 000	0.07%	30	25%	IDU, MSM
Western Europe	late '70s - early '80s	530 000	0.3%	8 700	20%	MSM, IDU
North America	late '70s - early '80s	860 000	0.6%	70 000	20%	MSM, IDU, Hetero
Australia & New Zealand	late '70s - early '80s	12 000	0.1%	300	5%	MSM, IDU
TOTAL		30.6 million	1.0%	8.2 million	41%	

☐ Infection reaches unprecedented levels in sub-Saharan Africa

Sub-Saharan Africa is the region with the fastest-moving epidemic. The African epidemic has also been the most underestimated one up to now (see box on page 12). Now thought to have fully two-thirds of the total world number of people living with HIV, sub-Saharan Africa as a whole has reached the unprecedented level of 7.4% of all those aged 15 to 49 infected with HIV.

Unprotected sex between men and women accounted for most of the 3.4 million new HIV infections estimated among adults in sub-Saharan Africa in 1997. In addition, high fertility combined with poor access to information and services for the prevention of mother-to-child transmission resulted in some 530 000 infected children being born to mothers with HIV – around 90% of the world total.

Although heterosexual transmission accounts for most infections throughout Africa, levels of infection vary widely across the continent.

³ The proportion of adults living with HIV/AIDS in the adult population (15 to 49 years of age).

⁴ Orphans are defined as HIV-negative children who lost their mother or both parents to AIDS when they were under age 15.

⁵ MSM (men who have sex with men), IDU (injecting drug users), Hetero (heterosexual transmission).

Southern Africa continues to be the part of the continent worst affected by HIV. By early 1997, the Government of South Africa estimated that 2.4 million South Africans were living with HIV, up by more than a third over 1996. In Botswana, the proportion of the adult population living with HIV has doubled over the last five years. In 1997, 43% of pregnant women tested in the major urban centre of Francistown were HIV-positive. In Zimbabwe, infection was estimated at one in five adults in 1996. In Harare, 32% of pregnant women were already infected in 1995; in Beit Bridge, another major city, the proportion shot up from 32% in 1995 to 59% in 1996. Although levels in cities were slightly higher than in rural areas, the difference was not great. In one town near the South African border with a large population of migrant workers, 7 pregnant women in 10 tested HIV-positive in 1995.

In general, West Africa has seen its rates of infection stabilize at much lower levels than in East and Southern Africa. However, some of the most populous countries in West Africa are the exception to this rule. For example, the National AIDS Programme estimates that 2.2 million people are currently living with HIV in Nigeria, a country whose response to the epidemic needs strengthening.

East Africa was one of the first areas to suffer a massive regional epidemic, and one country in the region, Uganda, was among the first to respond with open and concerted efforts to prevent the spread of the virus. For Uganda, this seems to be paying off. 1997 data currently being analysed show that the proportion of Ugandan adults infected is continuing to drop. All three of the surveillance sites for which figures are now available show infection levels of between 5% and 9%, representing a decrease of about one-fifth compared with 1996. The fall has been particularly marked in the younger age groups, which is in line with behaviour studies showing that young people nowadays are adopting safer sexual behaviour – later sexual initiation, fewer partners, more condom use – than was common a decade ago.

❑ Infection rates in Asia are lower than Africa's, but the numbers are large

The diversity within Asia is greater even than that in Africa. Levels of infection vary enormously, and so do routes of transmission. Often there are a number of different epidemics running concurrently within a single country. New genetic typing procedures (which allow researchers to investigate how different strains of the virus are spreading through the population) show that there is often remarkably little overlap between the HIV epidemics among injecting drug users and sex workers, for instance.

The epidemic is newer in Asia than in Africa, and only a few countries in the region have developed sophisticated systems for monitoring the spread of HIV. So estimates of HIV in Asia often have to be made on the basis of less information than in other regions. Because over half of the world's population lives in the region, small differences in rates can make huge differences in the absolute numbers of people infected.

The Government of China estimated that at the end of 1996 up to 200 000 people were living with HIV/AIDS. According to some estimates, this figure may have doubled by the end of 1997. At present, there are two major epidemics under way in China. One is in injecting drug users in the mountainous southwest of the country. The other, newer epidemic is now surfacing among heterosexuals, especially along the prosperous eastern seaboard where prostitution is re-emerging as the gap grows between rich and poor. The warning signs of high-risk behaviour are

worryingly clear: sexually transmitted diseases (STDs) have shot up in recent years, and there are no suggestions that the upward trend will be broken.

In India, infection rates, at under 1% of the total adult population, are still low by the standards of many countries, although well over 10 times higher than in neighbouring China. Surveillance is patchy, but all indications are that between 3 and 5 million people in India are living with HIV. Even at the bottom of that range, India is the country with the largest number of HIV-infected people in the world.

Recent testing of pregnant women in Mumbai shows infection rates around 2.4% in 1996. In Pondicherry, the rate among pregnant women is around 4%. Among truck drivers in the southern state of Madras, HIV infection quadrupled from 1.5% in 1995 to 6.2% just one year later. In the northeastern state of Manipur, where the epidemic took off quickly among male drug injectors, some drug clinics were registering HIV rates of as high as 73% in 1996.

There is limited information about HIV infection in other parts of south Asia, but it is clear that many people are having unprotected sex with non-monogamous partners. A recent study among sex workers in Bangladesh showed that 95% had contracted genital herpes, mostly from their clients, while 60% had syphilis.

Rates of HIV infection remain low in several southeast Asian nations. In Indonesia, Malaysia, the Philippines and Singapore, for instance, infection rates are well under 1%. However, other countries in the region show much higher levels of HIV spread. The reasons for these differences are not entirely clear. Nor is there any assurance that currently low rates will remain low, given the widespread occurrence of risk behaviour including commercial sex and, in some places, drug injecting.

Thailand, which has experienced what is probably the best-documented epidemic in the developing world, is continuing to produce evidence of a fall in new infections, especially among sex workers and their clients. These are the groups who have accounted for the majority of the some 750 000 persons currently infected, representing 2.3% of the adult population. The decrease in new infections is the outcome of concurrent and sustained prevention efforts aimed at increasing condom use among heterosexuals, boosting respect for women, discouraging men from visiting sex workers, and offering young women better educational and other prospects to discourage their entry into commercial sex. HIV rates among Thailand's injecting drug users have stabilized at a relatively high level (around 40%), and a survey among men who have sex with other men in northern Thailand reported low AIDS awareness and condom use.

Elsewhere in southeast Asia the picture is mixed. It is bleakest in Cambodia, where 1 in 20 pregnant women, 1 in 16 soldiers and policemen and 1 in 2 sex workers tested positive in sentinel HIV surveillance. While condom use has grown very rapidly (condom sales have risen from virtually nothing to around a million units a month in the space of under three years) commercial sex remains very common: in a recent survey three-quarters of respondents in the military and the police force and two-fifths of male students said they had visited a sex worker in the last year. Viet Nam and Myanmar are also seeing a rapid spread of HIV. In Myanmar, HIV infection among sex workers rose from 4% in 1992 to over 20% in 1996, while two-thirds of injecting drug users are infected. Among pregnant women in the general population, an estimated 2% are infected.

Overall, about 6.4 million people are currently believed to be living with HIV in Asia and the Pacific – just over 1 in 5 of the world's total. By the end of the year 2000, just three years from now, that proportion is expected to rise to 1 in 4. Around 92 000 children now live with HIV in Asia.

□ Latin America and the Caribbean: neglected groups and a window of opportunity

In Latin America the picture is heterogeneous. For the most part, HIV is concentrated in neglected populations living on the social and economic margins of society. The epidemic has taken its greatest toll on men who have sex with men and injecting drug users. Systematic data collection is difficult in these groups and information is rather scarce as of today. Nevertheless, studies on Mexican men who have sex with men show that, on average, as many as 30% of them may be living with HIV. Rates in drug users vary from 5% to 11% in Mexico to close to 50% in Argentina and Brazil. In some places there is clear evidence of increasing spread among poorer and less educated parts of the population. For example, in Brazil most of the early AIDS cases were in individuals with secondary or university education; today 60% of cases are in people with primary schooling or less.

Rising rates in women show that heterosexual transmission is becoming more prominent. In Brazil, the male/female ratio of AIDS cases has dropped from 16:1 in 1986 to 3:1. Although HIV rates in pregnant women are still comparably low in general, they have reached levels of 1% in Honduras and more than 3% in Porto Alegre, Brazil. Rates are substantially higher in the Caribbean. Haiti found over 8% of pregnant women carrying the virus already in 1993; the same prevalence was reported from one surveillance site in the Dominican Republic in 1996.

For the most part, however, this region of the world still has an important window of opportunity: it is not too late to stop HIV from spreading to the population at large. This will require a much greater focus on meeting the special prevention needs of marginalized and impoverished populations.

As limited as the region's epidemic has been thus far, AIDS has already had a major impact. In Mexico, AIDS was the third leading cause of death in men between 25 and 34 years of age in 1995 with increasing trends. In the state of São Paulo, Brazil, AIDS became the leading cause of death in 20 to 34-year-old women in 1992. In Latin America and the Caribbean as a whole, AIDS has already overtaken traffic accidents as a cause of death. However, a recent drop in AIDS mortality – similar to that seen in Western Europe and North America (see below) – has been recorded in São Paulo and is attributed to the increasing use of antiretroviral therapy.

□ Drug use drives HIV in Eastern Europe

Drug injection is behind the dramatic surge in HIV infection in several Eastern European nations, accounting for the majority of the 100 000 new infections estimated to have occurred in 1997. In Ukraine, where around 70% of infections have been in drug users over the last three years, some 25 000 cases of HIV infection have been reported so far, half of them in 1997. It is possible that a similar pattern will be seen elsewhere in the region. Russian officials estimate there are about 350 000 regular drug users in the country, many of them sharing injecting equipment.

The potential for sexual spread also exists. In Russia, Belarus and Moldova, new cases of syphilis rocketed from very low levels in the late 1980s to well above 2 per 1000 population by 1996, with continuously increasing trends. An untreated sexually transmitted disease not only makes HIV (when present) spread much more easily from one partner to the other but is important as a marker of potential HIV spread because it has the same transmission route – unprotected sex (intercourse without a condom).

□ AIDS is falling in the industrialized world

The growing gap between the developed and the developing world concerns not only the scale of HIV spread but mortality from AIDS. In North America, Western Europe, Australia and New Zealand, newly-available antiretroviral drugs are reducing the speed at which HIV-infected people develop AIDS.

In Western Europe evidence suggests that new AIDS cases will drop by around 30% in 1997 compared with 1995, before antiretroviral treatment became available. The fall is greatest in countries in which infection has been concentrated in homosexual men, in whom HIV rates began dropping 5-10 years earlier. This shows that the decline in AIDS cases is often the combined result of better prevention and better treatment. Only in Portugal and Greece, where unsafe drug injecting is the main mode of transmission, are new AIDS cases still showing substantial rises compared with a year ago.

In the United States, newly-published figures indicate that the first-ever annual decrease in new AIDS cases – 6% – occurred in 1996, and an even bigger decrease is expected in 1997. Again, the largest fall – a drop of 11% – was in homosexual men, the very group which sought and benefited from the most open exchange of information about the risks of unprotected sex in the early years of the epidemic. In some disadvantaged sections of society, however, AIDS continues to rise. Among African-Americans, new AIDS cases rose by 19% among heterosexual men and 12% among heterosexual women in the USA in 1996. In the Hispanic community, there were 13% more cases among men and 5% more among women than a year earlier. This is partly because these communities may find it hard to access the expensive new drugs that could stave off the onset of AIDS. It is partly, too, because prevention efforts in minority communities, where transmission is often through heterosexual intercourse and drug injecting, have been less successful than in the predominantly well-educated and well-organized white gay community.

It is estimated that 30 000 Western Europeans were newly infected with HIV in 1997. Antiretroviral treatment given to women during pregnancy and the availability of safe alternatives to breastfeeding kept mother-to-child infection low – it is estimated that fewer than 500 children under the age of 15 were infected with HIV in 1997. North America estimated it had around 44 000 new HIV infections in 1997. As in Western Europe, transmission from mother to child was low, with fewer than 500 new cases.

AIDS wipes out gains in life expectancy and child survival

AIDS is systematically cutting down life expectancy in the countries where the disease is most common. The gains achieved over the last few decades in much of the developing world will in some places be cancelled out by HIV. Life expectancy in Botswana rose from under 43 years in 1955 to 61 years in 1990. Now, with between 25% and 30% of the adult population infected

with HIV, life expectancy is expected to drop back to levels last seen in the late 1960s. By the end of the decade, Zimbabwe will see 10 years wiped off the life expectancy of a child born in 1990. In Uganda, one study in a rural area measured the lifespan of the population as a whole and compared it with that of the people who were not HIV-infected. It concluded that where some 8% of the population was HIV-positive, the presence of AIDS in the community cut overall life expectancy by 16 years.

In many countries AIDS is the leading cause of death in adults. In the United States, after combination therapy to slow down the progression of HIV disease was introduced in 1996, AIDS dropped into second place among leading causes of death in people aged 25-44 for the first time since 1992. Accidental injury took over in first place. In rural Uganda, AIDS accounted for 41% of adult deaths in one study. For men between 25 and 44, and for women between 20 and 44, AIDS caused 7 out of every 10 deaths. In trading centres which are home to large numbers of younger adults, a third of whom are HIV-infected, nearly 9 out of 10 adult deaths are HIV-related. In Namibia, HIV causes nearly twice as many deaths across all ages as malaria, the next most common killer.

The high mortality due to HIV/AIDS also has major impacts on families. It is estimated that since the beginning of the epidemic more than 8 million children have lost their mothers to AIDS when they were less than 15 years old – and many of these also lost their fathers. It is estimated that this figure will almost double by the year 2000.

The worst is still to come. Since the beginning of the epidemic, it is estimated that 11.7 million people around the world have died of AIDS and HIV-related causes. That is just a third of the number currently infected. Indeed, half as many people were infected this year alone as have died in the whole epidemic to date. Because the vast majority of people living with HIV are in the developing world, access to antiretrovirals is often difficult or impossible. And these drugs do not constitute a cure: they are not effective in everyone, and at this point it is impossible to say how long their effects will last. Thus, many if not most of the 30 million people currently infected may well die in the relatively near future, perhaps within the next decade.

Developing nations have made great strides in increasing infant and child survival in recent decades. These gains, too, are threatened by HIV. Already, a quarter more babies under 12 months old in Zimbabwe and Zambia are dying than would be the case if there were no HIV. By 2010, Zimbabwe's infant mortality rate is expected to rise by 138% because of AIDS, and its under-five mortality rate by 109%. In Côte d'Ivoire, child mortality will rise by over two-thirds.

Young people at risk

In some parts of the world, the proportion of the total adult population living with HIV/AIDS has stabilized or begun to fall. While this is good news, it can hide an unpleasant truth: new infections in the younger age groups can continue unabated or even go on rising as the overall proportion of people living with HIV/AIDS falls.

❑ High infection rates and risk behaviour among some young people

In most parts of the world, the majority of new infections are in young people between the ages of 15 and 24, sometimes younger. In one study in Zambia, over 12% of the 15 and 16-year-olds seen at antenatal clinics were already infected with HIV.

Girls appear to be especially vulnerable to infection, but Uganda has recently shown encouraging evidence that in some city sites infection rates have halved among teenage girls since 1990. Even there, however, the rates remain unacceptably high, with up to 1 pregnant teenager in 10 testing HIV-positive. That rate is six times higher than in boys of the same age.

In South Africa, the proportion of pregnant 15-19-year-olds infected with HIV rose to 13% in 1996 from around half that level just two years earlier. In Botswana the infection rate stood at 28% for the same group in 1997. In Maharashtra state in India, where the epidemic is in its early years, some 3.5% of pregnant teenagers tested HIV-positive in a recent study.

What is abundantly clear is that some young people all over the world engage in risky sexual behaviour. In Mongolia, there has been a recent jump in sexually transmitted diseases in children under 15, indicating that they are exposed to unprotected intercourse. One study shows that since 1994, STDs in those under 15 have shot up more than ten-fold. In Namibia, 37% of 12-18-year-olds reported that they had had sex, nearly half of them with more than one partner. Most said that they believed their own partners had had other partners, too. In Tanzania, 12% of teenage males and 37% of 20-24-year-olds reported that they had multiple sex partners in the last year. In Mali, 2 out of 5 sexually active boys in their teens said they last had sex with a prostitute or casual partner. In the United States, some studies indicate that genital herpes has jumped more than four-fold among white teenagers since the 1970s, with close to 1 in 20 now infected. Among white Americans in their 20s, the rate is 1 in 7.

Sometimes, young people know of the risks of unprotected sex but feel AIDS could not possibly happen to them. In Malawi, most young men and women know how HIV is transmitted and how it can be prevented. When asked, however, many said they felt invulnerable to the virus. Some 90% of teenage boys said they were at no risk or at minimal risk of infection, even though nearly half of them reported at least one casual sex partner over the last year, and condom use was low.

Even in countries such as Thailand – which has been among the most successful in encouraging young people to adopt safer sexual behaviour and has been rewarded by seeing a marked fall in both HIV infection and other STDs – there are groups of young people that fall through the net, such as those living on the street.

❑ More education translates into lower risk

In many countries, young people are denied access to education about HIV including safe behaviour skills, or are unable to buy condoms or attend STD clinics. This is usually because older adults believe such education and services will actually encourage young people to increase their sexual activity.

In fact, the reverse is true according to a newly-published UNAIDS review of data from four continents. Good-quality sex education helps delay first intercourse and leads to lower levels of teenage pregnancy and STDs. In the years after Switzerland launched an active and very open

campaign aimed at informing young people about healthy sexual behaviour, the proportion of 17-year-old girls and boys who never had sex – a proportion that had been dropping for many years – began to show a marked rise. The same trend toward postponement of first sexual intercourse is now being observed in the USA and in Uganda.

Educational efforts are also resulting in greater condom use among those who have become sexually active. Thailand and Uganda have already been mentioned. In Tanzania, 16% of sexually active teenage women had used a condom in 1996. While this may seem woefully low, it is certainly a vast improvement on the 5% recorded in 1990. The proportion of teenage boys who had ever used a condom rose from 14% to 38% in the same period. In Zambia, too, condom use has risen from very low levels in the 1980s. In 1996 about one-third of sexually active teenage girls nationwide reported having used a condom – a level previously reported only from the capital Lusaka, where condom use has always been highest. In Switzerland, levels of casual sex among young people have remained more or less constant since the late 1980s, but consistent use of condoms with those partners has risen four-fold – a more impressive increase than seen in older people.

Over 27 million do not know they are infected

UNAIDS estimates that of the some 30 million people currently living with HIV, the vast majority have no idea they are infected. As with so many other features of the epidemic, when it comes to knowledge of HIV status there is a gaping divide between the developing and industrialized world.

In the United States, the Centers for Disease Control and Prevention (CDC) estimate that two-thirds of people living with HIV know about their infection. In Germany, the proportion of AIDS patients who knew their HIV status at least six months before an AIDS diagnosis remained steady at close to three-quarters in 1994 and 1995. Since 1995, when drugs that can delay the onset of AIDS came onto the market, the proportion has actually dropped to two-thirds. This is because people who knew their status early have already been treated and have been able to delay the onset of AIDS. People who do not know their status are more likely to go on and develop AIDS. The availability of treatment is a powerful incentive to get tested early.

In the developing world, where the epidemic is increasingly concentrated, the picture is very different. HIV testing is done mostly for purposes of surveillance, which involves very small population samples and is done “anonymously” (with no identification by name of those tested). Few people have any hope of treatment, so they feel little incentive to get tested. But even those who would want to know may not be able to find out. In many countries, there simply are no voluntary testing and counselling facilities; people have no acceptable way of learning if they are HIV-infected. An ongoing study at a rural hospital in South Africa suggests that only 2% of people who are HIV-positive know their status. The situation in urban Kenya seems to be as bad. Of 63 randomly chosen women who tested HIV-positive in one study, just one was already aware that she was infected.

The fact that current testing procedures usually require at least two visits to a test site further complicates access to testing. This can be difficult or expensive for people living in isolated areas. In rural South Africa, just 17% of the people who asked to be tested came back for the

result and the advice and support that goes with it. When an on-the-spot test was tried, nearly everyone (96%) chose to know the result.

Since the epidemic is concentrated in the developing world, a conservative estimate might suggest that 9 out of 10 infected people in the world do not know their HIV status. At current estimates, that would suggest there are over 27 million people in the world today who have no idea they are infected.

There are many reasons why HIV testing and counselling for those who want to know their infection status should become part of the broad package of interventions used for AIDS prevention, care and support. Increasingly, ways are being found to delay symptomatic HIV disease including the late stage called AIDS, and to prevent or treat the infections which afflict people whose immune systems have been damaged by the virus. Not all of these treatments are prohibitively expensive. The earlier people know they are infected, the greater the opportunity for them to access treatment – or put pressure on their communities and countries for improved access, where this is inadequate. Another benefit would flow to individuals and their families. The earlier individuals are aware of their infection, the better they can make informed and responsible decisions about childbearing, transmission to spouses or partners, and plans for their family's welfare after they fall ill or die.

Perhaps the most important benefit of self-knowledge is that it helps unmask the invisible epidemic and permits a genuine community response. The experience of the past decade shows that as long as HIV spreads silently and unnoticed, it remains at best a theoretical threat to people and does not get taken seriously. If individuals become aware of their infection early on, while they are still relatively healthy, this would give them the time and energy to support one another as well as alert their community to the epidemic, helping others avoid the disease or cope with its consequences.

However, these benefits to individuals, families and communities are realistically achievable only where people feel safe enough to find out whether they are infected. Efforts by governments and civil society to combat rejection and discrimination directed at people with HIV are vital.

Improved estimation techniques reveal epidemic is worse than previously thought

These newly-released figures reveal that there are about one-third more people living with HIV than was estimated in December 1996. There are two reasons for this increase. First, new infections are occurring at an alarming rate - some 16 000 infections a day have added 5.8 million HIV infections to the total in 1997 alone. Secondly, it now appears that previous calculations grossly underestimated the rate of transmission, particularly in sub-Saharan Africa where the bulk of infections are concentrated.

□ Why do estimates change?

Estimates are based on certain assumptions about the start of the epidemic, the rate of new infections in urban and rural areas, the time between infection and death, and the maximum level of infection in the population. Until a few years ago these data were available for only a handful of countries. It was assumed that the pattern of infection in other countries in the same region would follow that seen in countries where data was available. It seemed reasonable, then, to construct models to estimate the epidemic region by region.

This was first done for 1995. Information about levels of infection dating from 1994 or earlier was collected from as many countries as possible. From the proportion of people currently infected in various sentinel groups in each region and other available data, models were constructed to estimate the rate of growth of the epidemic and the total number of people currently infected, region by region. Extrapolations from this model were used to calculate the magnitude of the epidemic in 1996. This yielded an estimate of 3.1 million new infections over the year and brought to 22.6 million the number of people thought to be living with HIV.

By 1997, far more data were available and it became clear that there were huge differences in the way the epidemic was developing in different countries and communities within the same region. So this year, UNAIDS improved its estimation techniques. The regional models were replaced by separate models constructed for each country, which were based on better measures of levels of infection and took into account the variations in patterns of infection, in survival time, and so on. New estimates were made country by country, and then added together to yield new regional totals. The resulting estimates, given in this report, showed that global levels of infection in 1996 had been underestimated by over a third.

New infections in 1996 were in fact closer to 5.3 million than to the 3.1 million reported last year. The total number of people living with HIV in 1996 was in the range of 27 million, rather than 22.6 million as previously believed. That means that although this year's estimates are still shockingly high, there has been nothing like the doubling of new cases that might be suggested by looking at last year's published figures. Accounting for previous underestimates, there have been around 9% more new infections this year than last, and the number of people living with HIV has grown by 13%.

□ Where did the differences appear?

To see how much of the new total was due to a rise in new infections and how much due to underestimates of previous levels, UNAIDS recalculated the totals for 1996 using the new estimation methods. The results showed that previous estimates were correct for most of the world.

The difference was found largely in sub-Saharan Africa. While the number of people living with HIV/AIDS there was originally estimated at 14 million in 1996, new information shows that the regional total at that time was probably closer to 18.6 million, as against 20.8 million in 1997. New infections in 1996 would, on the basis of current information, have been estimated at 3.8 million in Africa alone.

□ Why was infection in Africa underestimated by so much?

At the time the regional model for sub-Saharan Africa was constructed, few countries had much reliable data and some, notably Nigeria and South Africa with their large populations, had virtually none. The country with the best surveillance system was Uganda, and that showed that infection rates were beginning to level off, with new infections dropping in younger age groups. This was taken as a model for the whole region.

Unfortunately, the epidemic in other countries has not followed the pattern seen in Uganda. In many, infection rates have continued to climb beyond the levels thought possible in 1994, when data for the regional models used for previous estimates were collected.

□ Are the new estimates definitive?

The figures given in this report each represent a best estimate out of a range, rather than a precise number. UNAIDS and WHO believe that these new estimates are as accurate as is possible to generate with available data. But there is much that is still not known about HIV. More information about the course of infection, its impact on fertility and mortality, and the transmissibility of different strains of the virus will change some of the assumptions made in the current models. A clearer picture of current levels of infection, particularly for countries with large populations and inadequate data such as India, will improve future estimates. And the efforts governments and communities put into changing the course of the epidemic in their countries should have an impact on the rate of new infections and so on estimates and projections.

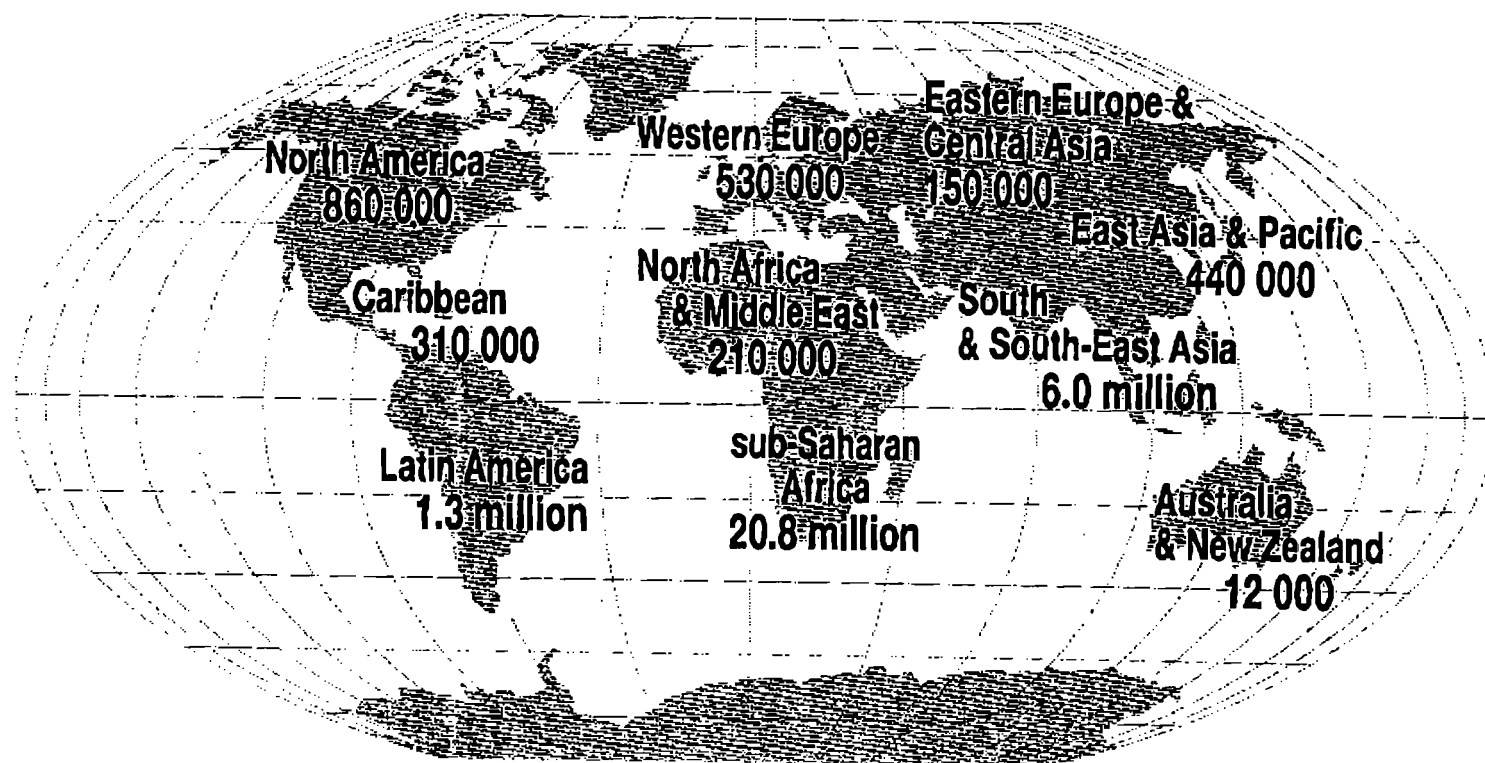
UNAIDS and WHO will continue to improve estimation methods as new information becomes available.

End-1997 global estimates

Children and adults

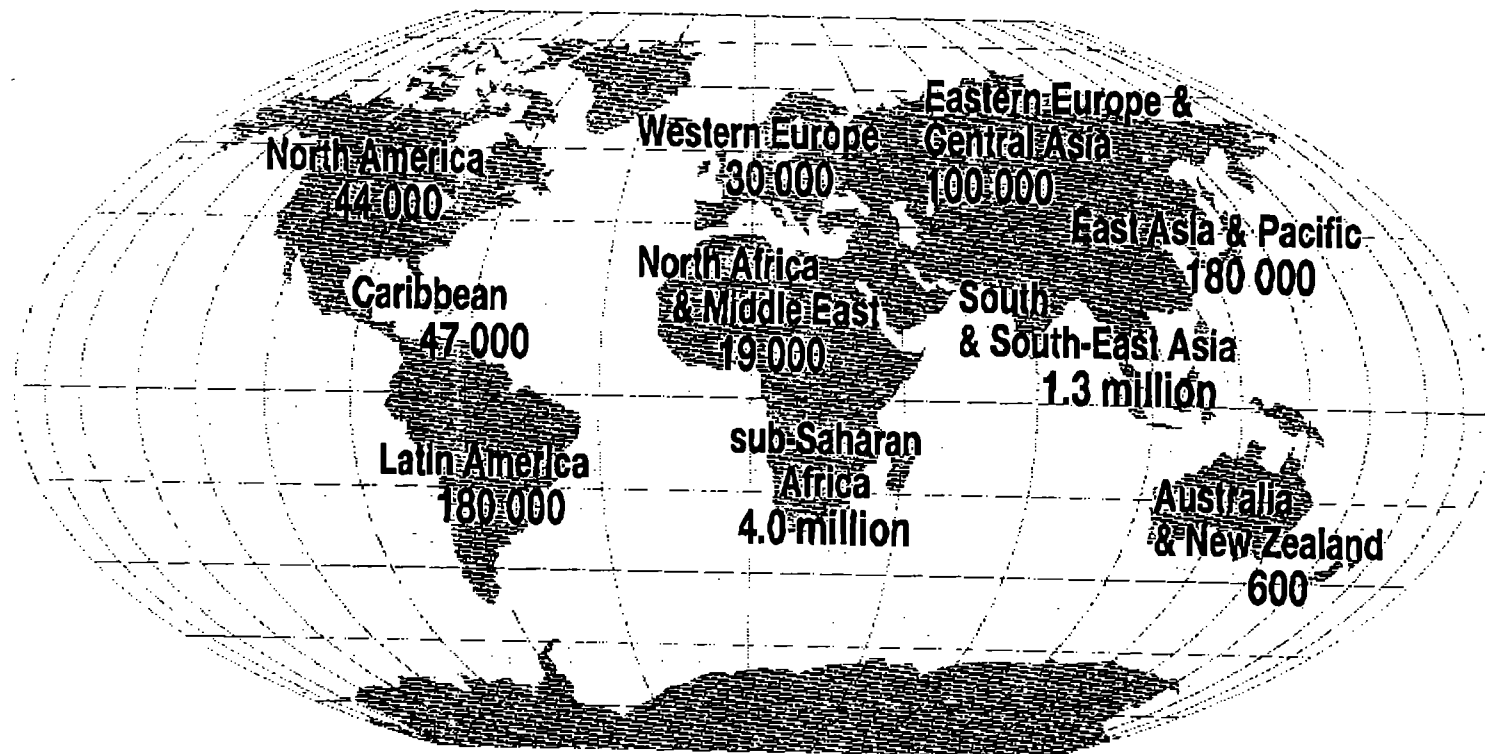
- People living with HIV/AIDS 30.6 million
- New HIV infections in 1997 5.8 million
- Deaths due to HIV/AIDS in 1997 2.3 million
- Cumulative number of deaths due to HIV/AIDS 11.7 million

Adults and children estimated to be living with HIV/AIDS as of end 1997



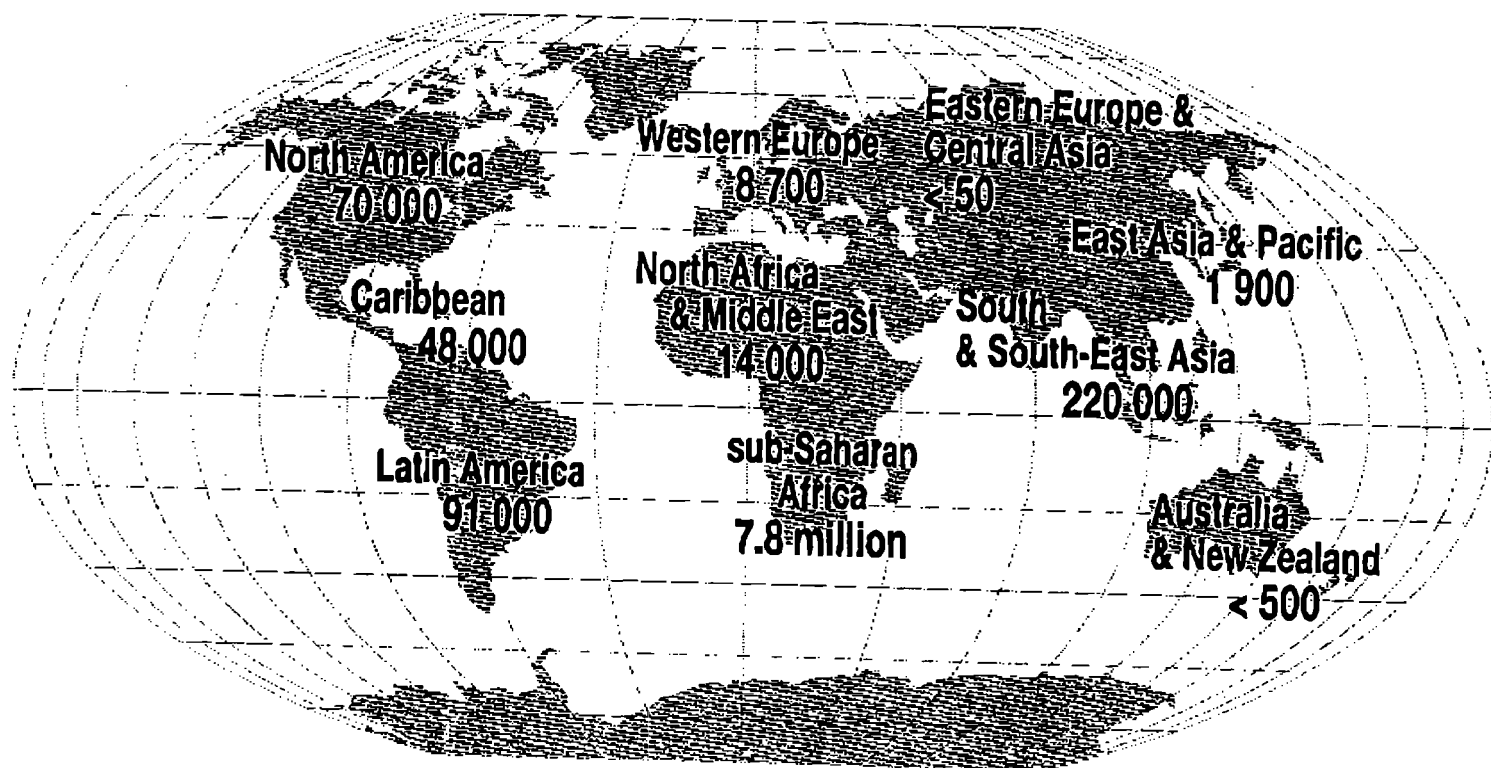
Total: 30.6 million

Estimated number of adults and children newly infected with HIV during 1997



Total: 5.8 million

Cumulative number of children estimated to have been orphaned* by AIDS at age 14 or younger



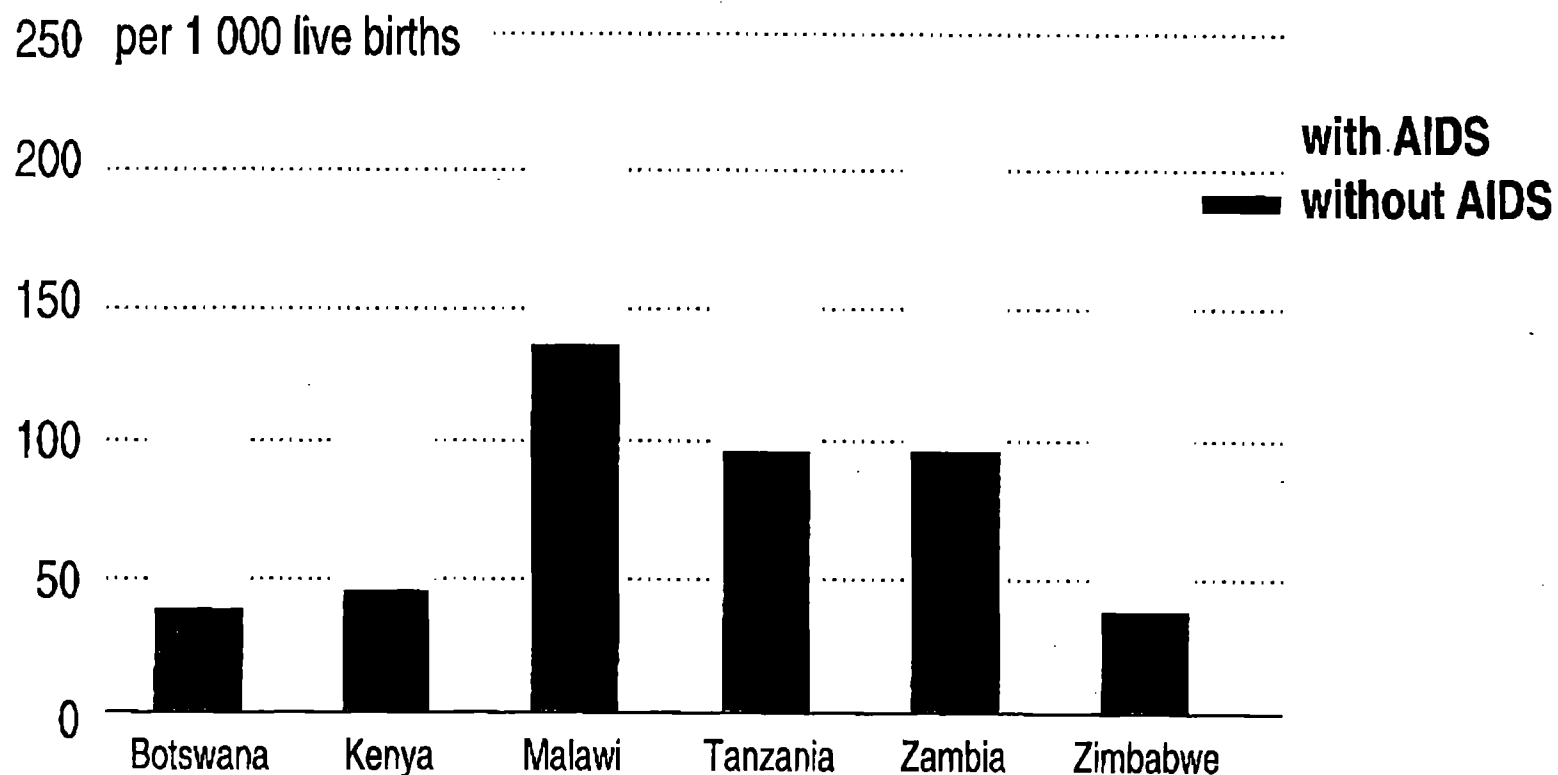
Total: 8.2 million

FSE/3 - 1 December 1997

* Orphans are defined as HIV-negative children having lost their mother or both parents due to AIDS

UNAIDS Global
HIV/AIDS and STD
Surveillance **WHO**

Estimated impact of AIDS on under-5 child mortality rates – *Selected African countries, 2010*



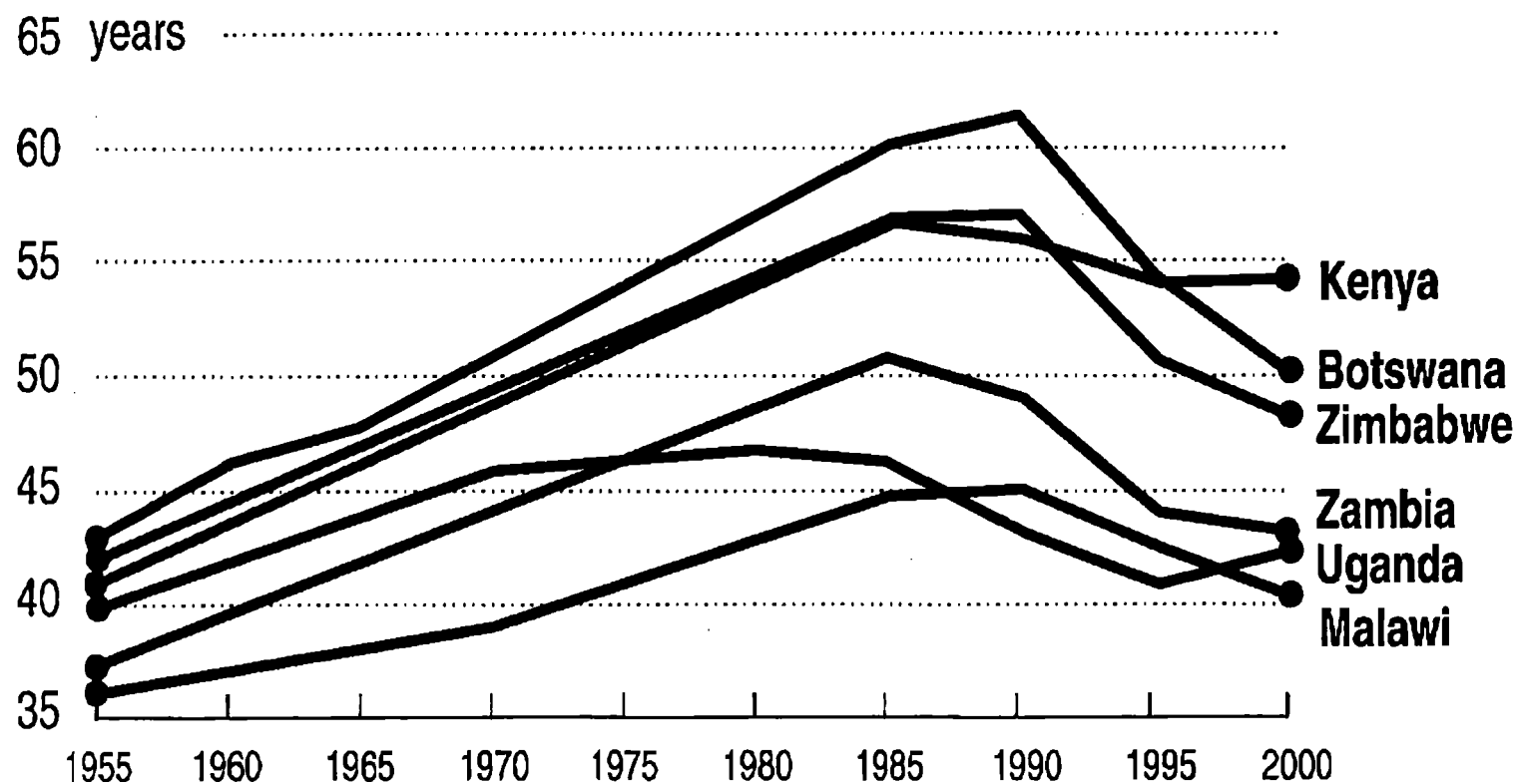
Source: US Bureau of the Census

FSE/6 – 1 December 1997

UNAIDS Global
HIV AIDS and STD
Surveillance **WHO**

Projected life expectancy at birth

Selected sub-Saharan countries

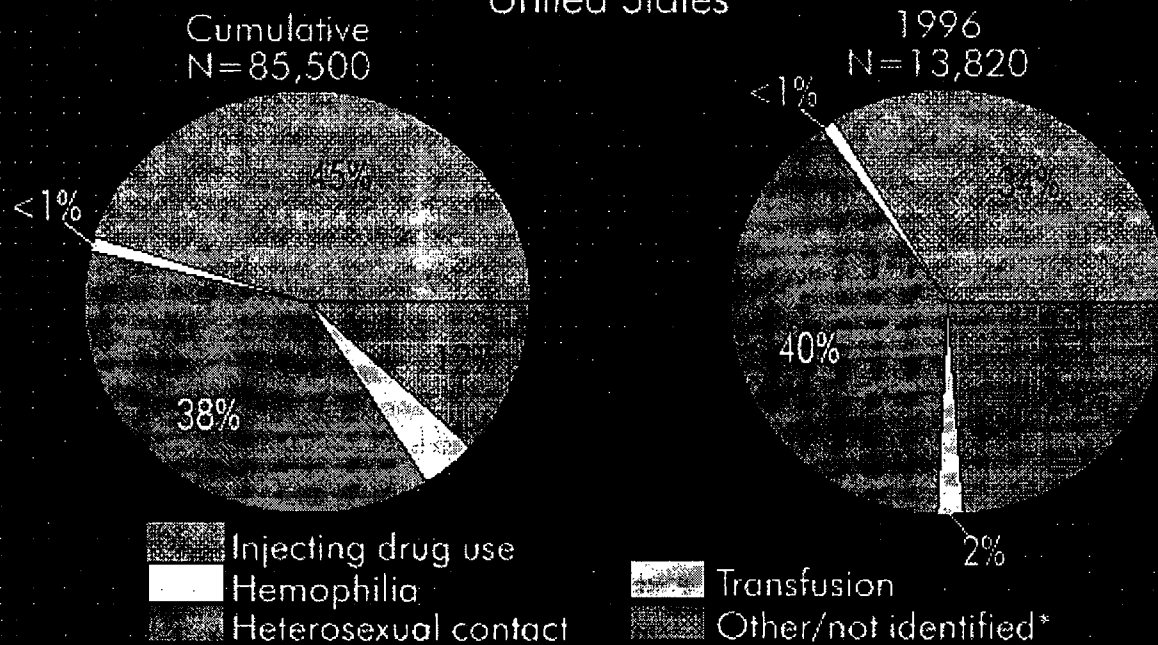


Source: World Population Prospects: The 1996 revision, United Nations Population Division, 1996

FSE/4 - 1 December 1997

UNAIDS Global
HIV AIDS and STD
Surveillance **WHO**

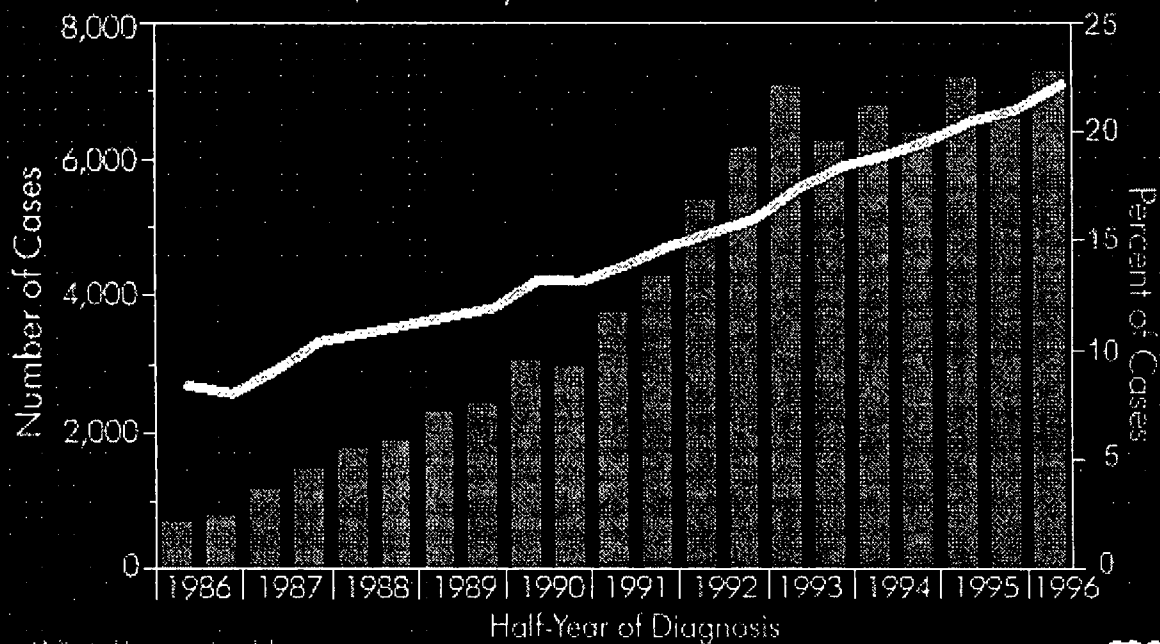
AIDS Cases in Women by Exposure Category, 1981-1996 United States



*Includes patients pending medical record review; patients who died, were lost to follow-up, or declined interview; and patients with undetermined exposure.

CDC

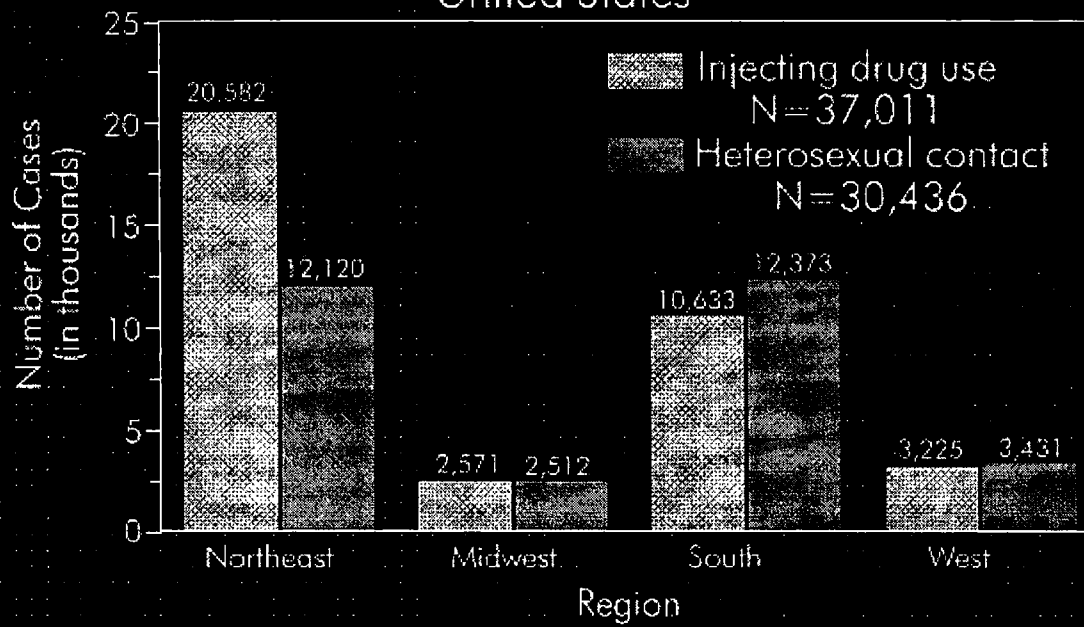
AIDS Incidence* for Women and Percentage of Adult AIDS Cases, January 1986 - June 1996, United States



*Adjusted for reporting delay



Women with AIDS Attributed to Injecting Drug Use and Heterosexual Contact, by Region, through 1996 United States



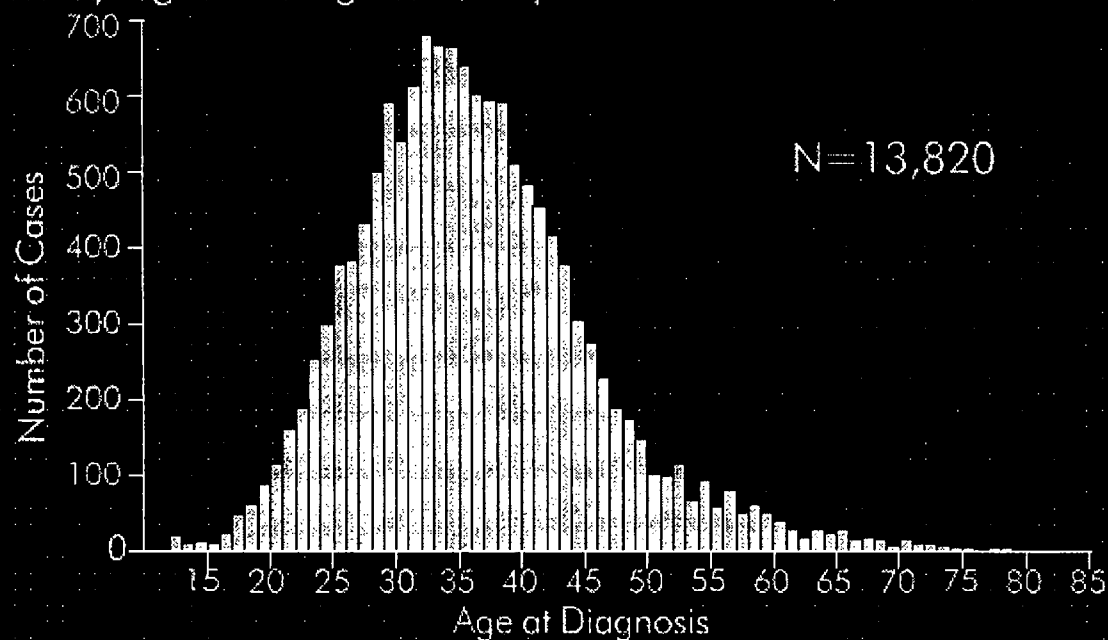
AIDS Cases in Women by Race/Ethnicity and Rates per 100,000 Women, Reported in 1996, United States

<u>Race/Ethnicity</u>	<u>Number</u>	<u>Percent</u>	<u>Rate</u>
White, non-Hispanic	2,888	21	4
Black, non-Hispanic	8,147	59	63
Hispanic	2,629	19	23
Asian/Pacific Islander	81	1	2
American Indian/ Alaska Native	41	<1	6
Total*	13,820	100	12

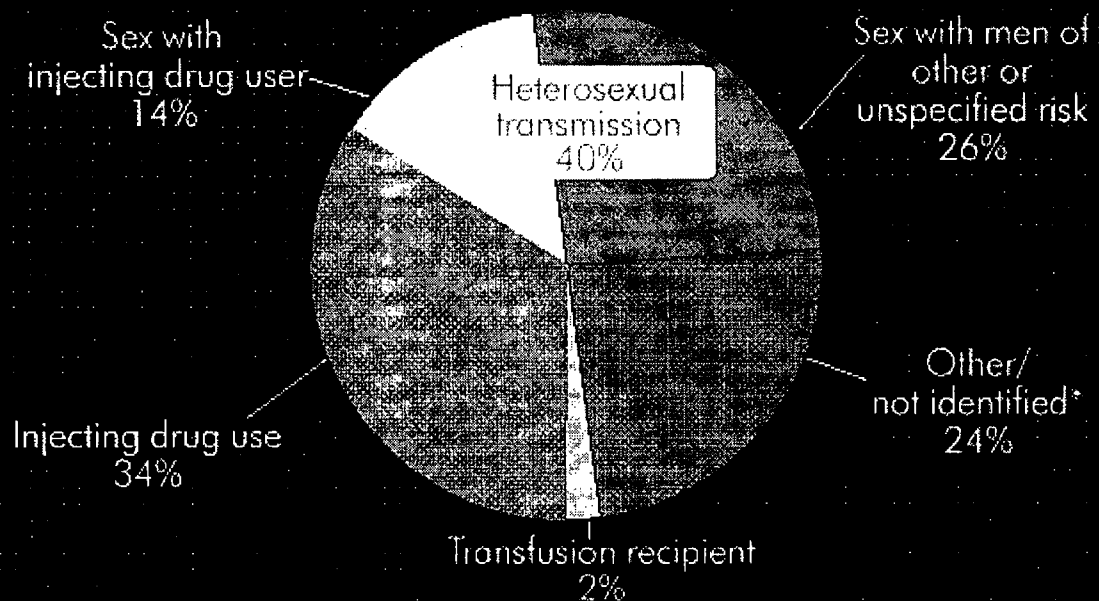
*includes 34 women of unknown race/ethnicity



AIDS Cases in Women ≥ 13 Years of Age by Age at Diagnosis, Reported in 1996, United States



AIDS in Women by Exposure Category Reported in 1996, United States



*Includes patients pending medical record review; patients who died, were lost to follow-up, or declined interview; and patients with an undetermined exposure.

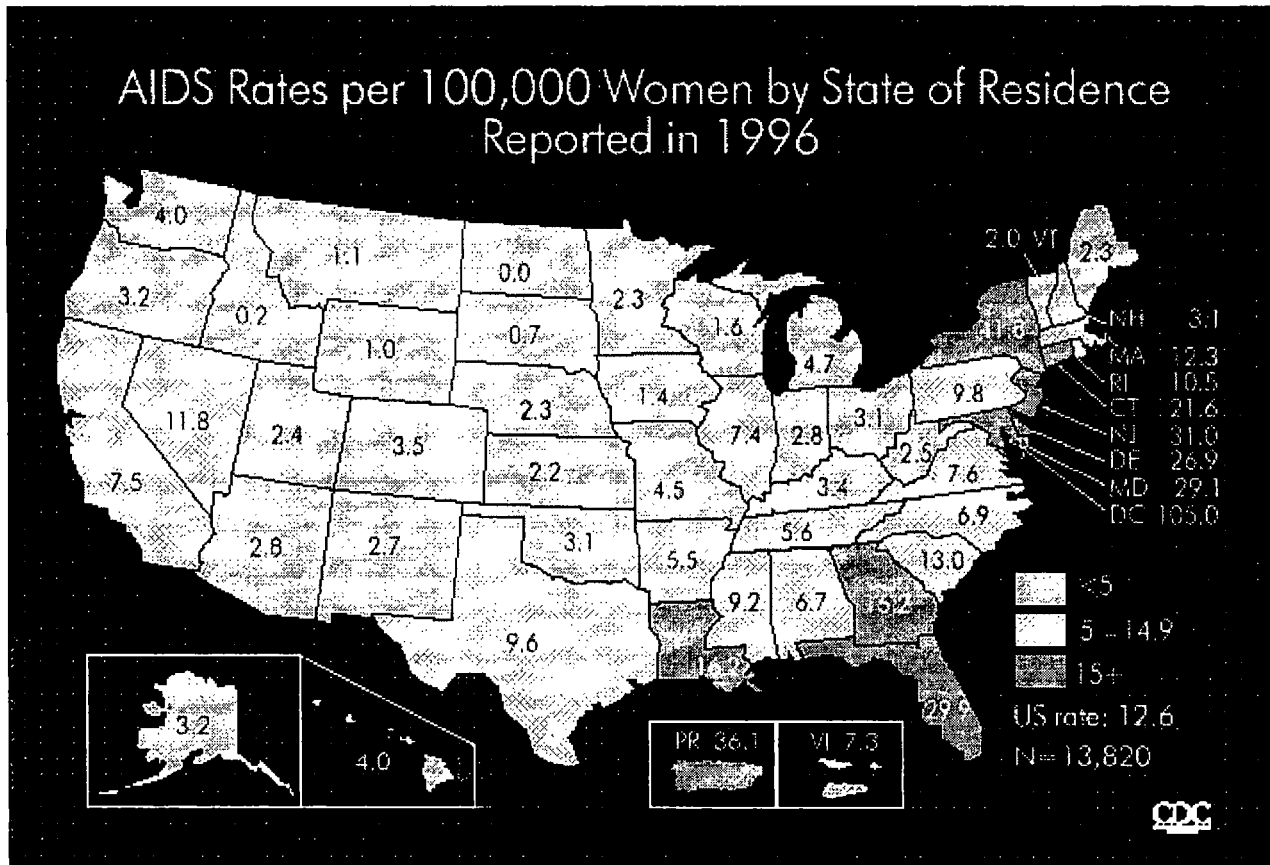


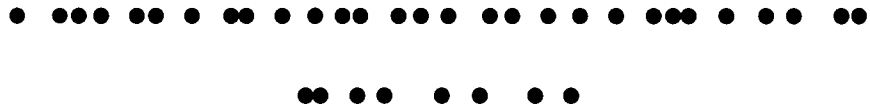
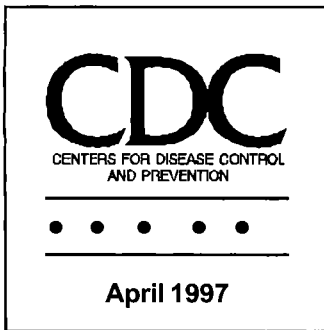
AIDS in Women by Exposure Category, by Age at Diagnosis, Reported in 1996, United States

Exposure Category	Age at Diagnosis (in years)			
	13-19	20-29	30-49	50+
	N=186 %	N=2,803 %	N=9,609 %	N=1,222 %
Injecting drug use	8	23	40	20
Heterosexual contact	46	51	36	42
Transfusion recipient	8	1	2	6
Other/not identified*	39	25	22	32

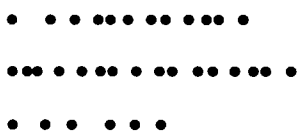
*Includes patients pending medical record review; patients who died, were lost to follow-up, or declined interview; and patients with an undetermined exposure.

CDC





In the United States, between 120,000 and 160,000 adult and adolescent females are estimated to be infected with human immunodeficiency virus (HIV), the virus that causes AIDS (Karon et al., 1996). In just over a decade, the proportion of female adult and adolescent AIDS cases has nearly tripled, from 7 percent of the annual total in 1985 to 20 percent in 1996 (CDC, NCHSTP, 1996). In particular, women with heterosexually acquired HIV comprise one of the fastest growing populations with AIDS.

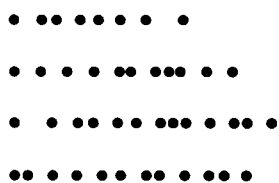


Heterosexual transmission is the most rapidly increasing transmission category among women with HIV, especially young women. Among women reported with AIDS in 1996, 40 percent acquired HIV through heterosexual contact with at-risk partners (CDC, NCHSTP, 1996).

Other sexually transmitted diseases (STDs) facilitate HIV transmission. Epidemiological studies from four continents (including North America) have repeatedly linked STDs with a three- to five-fold increased risk for HIV transmission (Wasserheit, 1992). This is true for both STDs that cause genital ulcers (e.g., syphilis, herpes, or chancroid) and non-ulcerative STDs (e.g., chlamydia, gonorrhea, or trichomoniasis). Infection with another STD can significantly increase a woman's risk for acquiring HIV infection if exposed to the virus through sexual contact. Co-infection with other STDs also increases the infectiousness of HIV-infected individuals: these individuals are more likely to shed HIV in genital secretions, and they are also more likely to shed HIV in greater amounts.

The second leading cause of HIV infection among women is injection drug use. Among women reported with AIDS in 1996, 34 percent acquired HIV through injection drug use (CDC, NCHSTP, 1996). But IDU is not the only way that drug use is fueling the AIDS epidemic among women. Data from a CDC study of young adults, ages 18 to 29, showed a high prevalence of HIV among women who had recently had unprotected sex in exchange for crack cocaine or for money. In fact, these women were as likely to be HIV-infected as men who had had sex with men (Edlin et al., 1994).

Female-to-female transmission of HIV is relatively rare; the majority of cases of HIV infection among women who have sex with women have been ascribed to heterosexual intercourse or injection drug use (IDU) (Bevier et al., 1995; Chu et al., 1990, 1994; Cohen et al., 1993).



Young women and women of color are disproportionately affected by HIV and AIDS. Female adolescents (ages 10-19) and young adult women (ages 20-24) are at higher risk of HIV/STD infection for several reasons: they may be more likely to have multiple partners, they may be more likely to engage in risky behavior, they may be more likely to have partners at higher risk of infection, and they may be more biologically susceptible to cervical infections (CDC, DSTDP, 1996; CDC, NCHSTP, 1996). Although African American and Hispanic women comprise less than one-fourth of all U.S. women, they account for more than three-fourths of AIDS cases among women (CDC, NCHSTP, 1996). Race and ethnicity in the United States are risk markers that correlate with other more fundamental determinants of health status such as poverty, access to quality health care, health care-seeking behavior, illicit drug use, and living in communities with high prevalence of HIV and other STDs.

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Women can practice behaviors to protect themselves against HIV/STD infection, including:

- *Practice sexual abstinence, or limit sexual contact to one uninfected partner.* Sexual abstinence or sexual contact only with a partner known to be uninfected are the best methods of protection against the sexual transmission of HIV and other STDs.
- *Use a male latex condom.* For individuals who choose to engage in sexual behaviors that may place them at risk of HIV/STD infection, CDC recommends the correct and consistent use of male latex condoms. This recommendation is based on compelling clinical evidence that the consistent and correct use of male latex condoms provides an extremely high degree of protection against HIV and several other STDs for both users and their partners.
- *Use a female condom.* Clinical data on the effectiveness of female condoms in preventing transmission of HIV and other STDs is limited; however, CDC recommends that persons who do not use male condoms for HIV/STD prevention use female condoms for HIV/STD prevention. This recommendation is based on the female condom's impenetrability to HIV and other STD pathogen in the absence of rupture or slippage, its ability to cover a substantial portion of the female genitalia, and its effectiveness in preventing pregnancy when used correctly and consistently.
- *Seek treatment early if infected with an STD.* There is substantial biological evidence demonstrating that the presence of other STDs increases the likelihood of both transmitting and acquiring HIV. All sexually active young women should be tested regularly for STDs, and should complete treatment if they are infected.
- *Do not share injection drug use equipment.* CDC strongly urges all individuals who use drugs to seek treatment to help them stop. Individuals who continue to inject drugs should avoid sharing needles or syringes.

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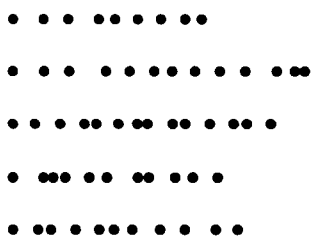
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Female-controlled methods are those that are designed for use by a woman to protect herself against sexual transmission of HIV or other STDs. The only female-controlled method that is currently marketed in the United States for this purpose is the female condom.

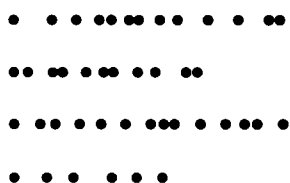
It remains unknown whether the female condom provides the same degree of protection against HIV/STD infection as the male latex condom. However, the female condom does provide an alternative method of protection for couples who do not use a male latex condom.

CDC and the National Institutes of Health are working with scientists worldwide to develop and evaluate the effectiveness and safety of female-controlled prevention methods. To date, the effectiveness and safety of products that might act as topical microbicides in providing protection against HIV/STD infection have not been proven. Some studies have shown that spermicides containing nonoxynol-9 (N-9) can reduce the risk of some STDs (gonorrhea and chlamydia) in women, and that N-9 spermicides inactivate HIV in test tubes (Cates and Stone, 1992). A recent study in Cameroon, however, demonstrated no effect of N-9 spermicide in STD prevention (National Institutes of Health, unpublished). Data on the effectiveness of N-9 spermicides for HIV prevention is inconclusive and inconsistent.



A woman can learn her serostatus by being tested for HIV. Most tests in the United States are antibody tests, which can detect antibody to HIV in a person's blood or through other body fluids, including saliva. The CDC National AIDS Hotline (1-800-342-AIDS) provides information about test sites throughout the United States.

A woman should ask her health care provider about testing for other STDs. The most common STDs have no symptoms in most women. Even when symptoms are present, many STDs have nonspecific signs and symptoms, making them difficult to diagnose without laboratory tests.



CDC works with states and communities to provide the information and tools needed to design and implement effective local prevention programs. Each community faces unique prevention challenges, and programs must be locally relevant and workable. HIV prevention works best if designed and implemented by those closest to the problem, with input from the individual and groups for whom programs are designed.

In December 1993, CDC initiated a new process to put more of the decisions about prevention programs in the hands of the communities affected. The process, HIV Prevention Community Planning, represents a significant step forward in planning culturally competent and scientifically sound HIV prevention services that specifically address unique community needs.

CDC is committed to providing the best available science to guide prevention. To fulfill this role, CDC has several responsibilities, including tracking the HIV/AIDS epidemic, conducting and disseminating research, and evaluating what works in HIV prevention. For example, CDC is evaluating the safety, effectiveness, and acceptability of female-controlled prevention methods, such as the female condom and products that might act as topical microbicides.

In addition, CDC conducts extensive behavioral research to increase our understanding of the many factors that make women vulnerable to HIV infection. For example, a recent study conducted among young women who are sexually active found that those whose first sex partner was an older man were less likely to use condoms and possibly at higher risk for HIV infection than young women whose first partner was about the same age. Such social and behavioral research is critically important to researchers who develop interventions designed to prevent HIV infection and pregnancy among young women.

CDC has conducted and supported research on the epidemiology of women who have sex with women, and continues to investigate HIV risk factors for this population.



For more information. . .

CDC National AIDS
Clearinghouse
PO Box 6003
Rockville, MD 20849-6003
1-800-458-5231

CDC National AIDS Hotline
1-800-342-AIDS

CDC National STD Hotline
1-800-227-8922

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Cates W Jr, Stone KM. 1992. "Family planning, sexually transmitted diseases, and contraceptive choice: a literature update." *Family Planning Perspectives* 24:75-84.

CDC, Division of STD Prevention (DSTDP). September 1996. *Sexually Transmitted Disease Surveillance, 1995*. U.S. Department of Health and Human Services, Public Health Service. Atlanta: Centers for Disease Control and Prevention

continued

HIV/AIDS and Women in the United States:

Excerpts from the HIV/AIDS Surveillance Report

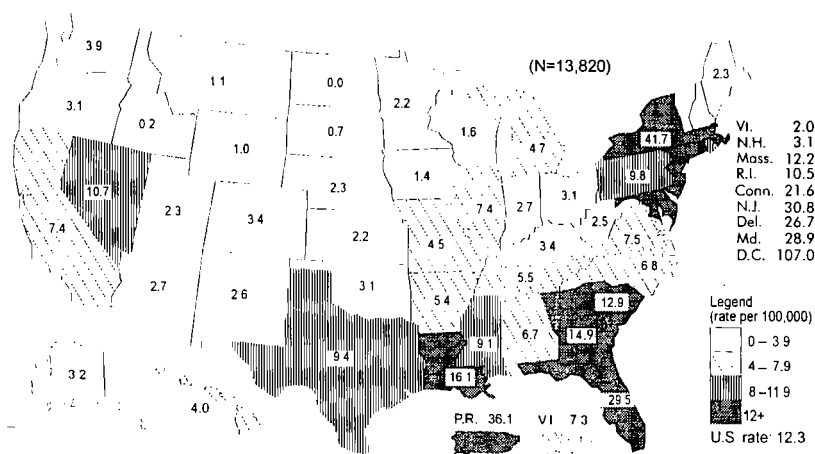
The proportion of total AIDS cases attributable to women is increasing. From 1985 through 1996, the proportion of adolescent/adult women reported to the Centers for Disease Control and Prevention (CDC) with AIDS increased steadily each year, from 7% to 20% of reported cases. Of the total cases reported among women, the proportion attributable to heterosexual contact is also increasing. In 1994, AIDS cases in women attributable to transmission via heterosexual contact surpassed the number attributable to transmission via injecting drug use; however, sexual contact with a man who injects drugs accounts for the majority of heterosexually acquired AIDS cases. HIV infection is the third leading cause of death among women ages 25-44; the leading cause of death among Black women in this same age group. This fact sheet presents data from the 1996 year-end edition of the CDC *HIV/AIDS Surveillance Report*.

Magnitude of the Problem

From June 1982 through December 1996, CDC had received reports of 581,429 cases of AIDS among persons of all ages and racial/ethnic groups in the United States, including 85,500 cases (15%) among women.

In 1996, 69,151 AIDS cases were reported to CDC and of these cases, 13,820 (20%) were reported among women. Over 80% of these cases were reported from Metropolitan Statistical Areas with populations greater than 500,000. Black and Hispanic women have been disproportionately affected, accounting for 59% and 19% of women reported in 1996. AIDS rates for Black and Hispanic women are 17 and 6 times higher than for white women (61.7 and 22.7 and 3.5 per 100,000, respectively).

Figure 1. Female adult/adolescent AIDS annual rates per 100,000 population, for cases reported in 1996, United States



Women under 30 accounted for 22% of reported cases in 1996. Because the time from initial infection with HIV to the development of AIDS can be long and variable, many of these young women acquired their infections in their teens and early twenties. The states with the highest AIDS rates in 1996 were New York, New Jersey, Florida, Maryland, and Delaware. The states with the highest number reported were New York (3249), Florida (1825), New Jersey (1050), California (940), and Texas



Women and HIV/AIDS

The global pandemic of HIV/AIDS has emerged as a highly complex and constantly evolving social, economic and biological phenomenon that poses a grave threat to individuals, families, societies and economies worldwide. Nowhere is this more true than in developing nations, where 90 percent of all people infected by HIV live.

Women are increasingly hard-hit by the pandemic. Heterosexual transmission of HIV accounts for more than 70 percent of global adult HIV infections to date. Of the estimated 26.8 million adults who have contracted HIV since the beginning of the pandemic, 11.3 million have been women. By end-1996, of the 21.8 million adults presently living with HIV/AIDS, 9.2 million are women. The majority of the 2.7 million newly infected adults are under 25 years old, and nearly 50% of new infection now occur in women. The proportion of infected women is growing due to their particular biological and social vulnerability to infection.

The specific costs, in personal and social terms, posed by the rapid spread of HIV among women will be profound given the critical roles women fulfill in every society as food producers and processors, traders, and income earners, and mothers. In the context of HIV/AIDS, women usually become infected during their childbearing and productive years and are often seriously disadvantaged by their own infection and morbidity or by that of the infection, morbidity and death of their partners and spouses. They also run the risk of transmitting the virus to the children born to them. Since the beginning of the pandemic, some 2.6 million children have become infected. The advances that have been made over the past two decades in the area of child survival may well be negated by increases in infant mortality due to HIV/AIDS.

Research has demonstrated that in many societies around the world, the economic and sociocultural determinants of women's lives is more responsible for their vulnerability to HIV infection than is any high-risk sexual behavior. HIV/AIDS prevention programs that seek to promote safer sexual practices are often inappropriate for women insofar as many do not have the power or autonomy to control their own sexual and reproductive lives.

RECOMMENDATION:

As the leader in bilateral and multilateral HIV/AIDS assistance in the world, the United States must ensure that the needs of women are addressed through the development process. This not only includes HIV/AIDS prevention, care and treatment initiatives that target so-called low-risk women, but ensuring women's full participation in and ability to benefit from the broader economic and social development programs that can reduce women's vulnerability to HIV infection by improving their socio-economic, political, and legal status.

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Global Status / Overview

Divider Title: _____

THE GLOBAL STATUS OF WOMEN AND HIV/AIDS

The vulnerability of women to HIV is only magnified in the international context. Throughout much of the world, particularly Africa and South & Southeast Asia --- where the virus is spreading at alarming and unacceptable rates (there may be as many as 40 million people with HIV in India alone by the year 2000) --- women are subject to dramatic social and economic inequalities. These inequalities dictate the nature of their sexual practices and leave women largely unprotected from the AIDS epidemic.

Examples of how economic inequalities subject women to unsafe sex include:

- Women in Zaire seek sexual partners known as “spare tires” in order to meet immediate economic needs and access to resources .
- In Uganda, girls from low income families are particularly vulnerable to the enticements of older men, or “sugar daddies”, who offer money or gifts in exchange for sex. A similar phenomenon has been reported in Zimbabwe.

Just as economic desperation and dependence compromise the ability of women to negotiate sexual encounters, so too do sociocultural factors.

- In Rio de Janeiro women in low income communities believe that if they were to ask their partners to use a condom, they would implicate themselves as unfaithful and have to bear the repercussions of anger and violence.
- Research projects conducted in nations as diverse as South Africa, Brazil, India, Guatemala, and Papua New Guinea reveal that many women who are aware of their partners’ infidelity feel helpless in changing that behavior since even raising the issue can disrupt the marriage and even jeopardize the women’s physical safety.

Legal standards abroad only reinforce these horrifying realities. In India, millions of men drive trucks through the country, commonly sleeping with prostitutes. When they come home, their wives are expected to submit to intercourse despite their husbands’ infidelity and unsafety. And the Indian Supreme Court ruled in favor of that expectation by guaranteeing conjugal rights to the husband.

Add to this equation pervasive lack of education and lack of access to preventive measures such as condoms, and the women of the world, particularly the developing world where AIDS is striking hardest, are left with little hope.

Efforts to relieve these conditions must rely on empowering women at a global level, allowing them equal access to education, equal rights socially, and equal opportunity economically.

OVERVIEW OF CURRENT STATISTICAL DATA REGARDING WOMEN AND HIV

GENERAL INFORMATION

AIDS PREVALENCE: Women now account for 20% of all adults with AIDS in the United States, compared to 42% globally (AP). As of January 1996, 70,000 American women have been diagnosed as having AIDS; as many as three times that number are HIV+ (Journal of the American Medical Association (JAMA)).

AIDS INCIDENCE: After rising an average of 2% per year between 1992 and 1995, AIDS incidence among all persons dropped by 6% from 1995 to 1996 (AP). While among men the decrease was even more substantial at 8%, *among women AIDS incidence actually increased by 2%*. This follows a 68% increase between 1991 and 1995 --- *this increase is more than any other group of persons reported as having AIDS, regardless of race or mode of exposure to HIV*, leaving women the fastest growing group with AIDS in the United States (CDC).

AIDS-RELATED DEATHS: Between 1995 and 1996 there was a 23% decrease in the number of AIDS related deaths among all persons; among women there was a 10% decrease (CDC). The decrease in the morbidity rate among AIDS patients is attributed primarily to effective drug therapy combining protease inhibitors, such as Crixivan and Norvir, with reverse transcriptase inhibitors, such as AZT.

STATISTICAL BREAKDOWNS

RACE/ETHNICITY: The distribution of cases of AIDS reported among women in 1996 is as follows: 57% Black, 22% White, 20% Hispanic (JAMA).

MODE OF TRANSMISSION (JAMA):

- Through the 1980's, AIDS spread among women primarily through the sharing of needles. IDU (Injection Drug Use)-related cases have slowed since 1992, leaving heterosexual contact the major source of infection among women.
- 52% of cases reported in 1996 were due to heterosexual contact; 43% stemmed from IDU.
- Among IDU women, AIDS incidence decreased by 4% between 1995 and 1996. Among women who were infected by heterosexual contact, incidence increased by 7% over the same period.
- Heterosexual transmission was attributed mostly to sex with an HIV infected partner of unreported risk (53%) and sex with an IDU (38%).

REGION: The Southern and Northeastern regions of the country account for the far majority of female AIDS cases. In 1996, the Northeast retained the greatest portion of newly reported cases, 44%, while the South provided 38% (JAMA). *Increase in incidence rates among women in the South, however, is the highest in the nation.*

ENVIRONMENT: 74% of AIDS cases reported among women in 1996 were in metropolitan areas consisting of more than 1 million people; 20% were in areas in which the population ranged from 50,000 to 1 million (JAMA).

BIRTH COHORT (JAMA):

- Injection drug users: 48% of IDU-related cases in 1996 were among women born between 1950 and 1959. 35% were among women born between 1960 and 1969.
- Heterosexual contacts: 40% of the 1996 case distribution were among women born between 1960 and 1969, 33% among women born between 1950 and 1959. *Since 1991, however, there has been a sharp increase in heterosexually infected women born between 1970 and 1971.*

PRENATAL TRANSMISSION (AP):

- Approximately 2000 HIV+ babies are born in the United States each year (5 each day).
- There are 40% more AIDS cases solely among children under 5 (HIV incurred at birth) than among all people ages 5 to 19.
- There is a 25% probability that an HIV+ woman will transmit the virus to her unborn child. *Treatment with AZT can reduce that likelihood to 5%.*

WOMEN WITH AIDS/HIV: INTERNATIONAL STATISTICS

INTERNATIONAL TRENDS

- According to the Joint United Nations Programme on HIV/AIDS, there is an increase in women with the HIV virus.
- Approximately 42% of the 21 million adults living with AIDS are women.
- Globally women account for 50% of all new cases of HIV infection.
- By the year 2000, of the 30-40 million of people expected to be infected by the HIV/AIDS virus, 13% will be women.
- By the mid-1990s the rate of women contracting the HIV virus was increasing faster than men.

CAUSES FOR HIGH RATE OF INFECTION IN WOMEN

- Heterosexual transmission.
- Young women have greater vulnerability due to the fragile tissue lining of their vaginal and anal tract which can be easily torn during intercourse.
- Young women are more apt to receive blood transfusions prenatally and during childbirth due to severe bleeding and anemia.
- Religious laws and/or cultural customs may prevent the use of condoms during intercourse.
- Condoms are not readily available in many parts of the world and/or men may reject using them.
- A study done in the United States indicated that women may delay access to medical care, which might suggest that the death rate of AIDS infected women is faster than that of infected men.

BREAKDOWN BY COUNTRIES

Africa

- Over 90% of all cases of HIV infection are found in developing countries.
 - 70% of these cases are in **Sub-Saharan Africa**.
 - Higher % of women than men are infected (See table).
 - Majority of these cases are through heterosexual transmission.

- **Uganda** is one of the hardest hit countries.
 - The ratio of infected girls to boys between the ages of 15-19 is six to one.
 - In **Malawi** and **Zambia**, the ratio is five to one.
- More than 20% of pregnant women in **Rwanda** and **Burundi** are carrying the virus and subsequently they are unwittingly passing it on to their unborn children.
- Traditional beliefs about sex result in obstacles to preventing the transmission of the virus. This particularly evident in rural areas of Africa.
 - Some **Zambian** teenagers believe their sexual organs will shrivel up if they don't have intercourse.
 - Some African cultures prohibit a woman from reusing sex to her husband, even if he is HIV-positive.
 - Some infected men believe having sex with a virgin will cure them.

Argentina

- Second highest incident of AIDS in South America.
- In 1994, approximately 65,000 people were infected with HIV of which 25% were women.
- Major method of transmission is homosexual contact while heterosexual contact is attributed to 25% of cases.
- Major impediment to the prevention of sexual transmission of the virus in the Catholic [sic] church's prohibition of the use of condoms.

Brazil

- Brazil has one of the highest number of recorded AIDS cases.
- More than 48,000 cases have been recorded, but it is believed that this number only accounts for approximately half of the actual cases.
- Another 700,000 people are believed to be HIV positive.
- In 1994, women accounted for @ 20% of all AIDS cases.
- Among women the most likely method of transmission is (1) heterosexual relations, followed by (2) intravenous drug use.
- The scarcity and high cost of condoms along with the reluctance of many men to use them accounts for the difficulty in reducing the spread of the disease.

Cambodia

- Cambodia has one of the highest and fastest growing AIDS epidemics in Asia according to the World Health Organization.
- Prostitution is rampant as women sell themselves for as little as 6 cents.
- As many as 60% of these women are HIV-positive, yet most know nothing about the virus.
- Transmission of HIV has been almost exclusively through heterosexual means with

prostitution as the predominate mode of infection.

- A common pattern for transmission are prostitutes infecting men who then go on to infect their wives and /or girlfriends.
- In a population of 10 million, 120,000 Cambodians carry the HIV virus.
- The international community and the Cambodian government must do more to reverse the epidemic.

India

- By 1996 India had the world's largest number of people infected with the AIDS virus.
- Of the 1.75 million who were infected, 23% of this group constituted women.
- Heterosexual relations are the primary mode of HIV transmission.
- Infection through IV drug use is becoming more common.
- Contaminated blood products account for @12% of infections.
- Homosexual relations account for less than 1% of infections.
- There is a trend, in some health clinics, for matchmaking HIV-positive women and men due to the importance of marriage within Indian society.
- There is a 30% to 40% chance that children of these couples would be infected with the virus.

POSITIVE DECREASE SIGNS

- In 1996, scientific studies indicated initial signs that the spread of AIDS in **Africa** was slowing.
- Studies indicated that the rate of infection had dropped in some parts of **Uganda** among teenagers.
 - This has been attributed to the use of condoms and other safe sex practices.
 - There was a decrease in the number of women who tested HIV-positive at prenatal clinics.
- Indications in urban areas, (**Sub-Saharan Africa**), cited a decrease in the percentage of infected women from 30% to between 15% and 20%.

CNN “Dangerously Flawed AIDS Research Criticized” April 22, 1997

- A consumer group claimed the unethical AIDS research by the United States has caused the deaths of about 1,000 children overseas.
 - The consumer group, Public Citizen, is affiliated with Ralph Nader.
 - It made accusations against the government of deliberately denying AIDS-infected patients access to AZT based on federal documents the group obtained on the research.
 - Dr. Phillip Nieburg, an AIDS researcher for the CDC, stated that it is not feasible or scientifically proper to give AZT to all patients involved with the research.
 - AZT is unavailable and unaffordable for use in developing countries.
 - The cost of treating a single pregnant woman at delivery is \$800.
 - Nieburg stressed the importance from a scientific point of view of comparing new treatments with the existing “standard of care” in a particular country. In developing countries, AZT is not the standard of care.
 - Public Citizen claims that the research is unethical because some of the women in the AIDS research trials are being denied access to AZT; instead, they were given placebos. The experiments focus on the transmission of the AIDS virus from pregnant women to their unborn babies.
 - The government insists that a placebo comparison is the only way to prove potential new therapies are better than no treatment.
 - Dr. Peter Lurie of Public Citizen’s stated: “It is a clear-cut double standard, and for these babies it will be lethal. We are demanding today that the federal government provide AZT or similar drugs to all of the women in these studies.”
 - At issue are nine studies being conducted in African, Asian and Caribbean nations and underwritten by the National Institutes of Health or the Centers for Disease Control and Prevention. About 9,000 women are involved in the research.
 - Studies conducted in the United States have clearly demonstrated AZT reduces the transmission rate of HIV from mother to unborn child by two-thirds.
 - Public Citizen also noted six European studies of anti-HIV drugs were ethically flawed and could result in the deaths of 500 more infants whose mothers were involved in the research.

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GMHC / WOMEN & Children Report

Divider Title: _____

HIV Infection in Women: Still Untreated, Still Deadly

by Risa Denenberg, R.N., F.N.P., M.S.N.

**This is our
summer double
issue on women
and children,
including reports
from the National
Conference on
Women and HIV.
See page 2 for
table of contents.**

HIV infection is now the leading cause of death for women 25 to 44 years old in New York City. The same is true for 25- to 44-year-old African-American women across the United States. At the same time, deaths among all persons with AIDS substantially decreased last year, both in New York City and nationally. (According to the Centers for Disease Control and Prevention [CDC], the overall national decrease was 19% for the first nine months of 1996 compared to the same period in 1995.) This decline in AIDS deaths is believed to reflect the introduction of more powerful HIV therapies and better management and prevention of opportunistic infections.

Despite the unprecedented improvement in the overall death rate, the number of AIDS deaths did not decrease substantially for women.

AIDS is growing fastest among women, but throughout the epidemic, women with HIV/AIDS have had shorter survival times than men (Lemp, 1992; Rothenberg, 1991). This imbalance is likely due to complex psychosocial determinants related to women's role as caretaker of the family, their relative poverty, and the paternalism, if not downright hostility, with which the medical system approaches women's problems—the inadequate investigation and diagnosis of HIV/AIDS in women being typical of the uncomfortable relationship medicine has with women. These factors lead to poor access to satisfactory care and the fruits of medical progress. Burdensome lifestyle factors furthermore make it difficult to adhere to treatment instructions when women do obtain adequate medical management.

The National Conference on Women and HIV (May 4–7, 1997; Pasadena, California), explored both women's use of current HIV therapies and their utilization of health services in general. Angela Powell, from the U.S. Health Resources and Services Administration, reported on national data regarding the experiences of women with HIV/AIDS who receive services under the Ryan White Care Act. She concluded that "women with HIV/AIDS have special needs and face unique barriers to services. They have primary care and support services needs different from those of men."

**The inadequate
investigation and
diagnosis of HIV/AIDS
in women is typical of
the uncomfortable
relationship medicine
has with women.**

A Medical Gender Gap

As reported at the conference, the records of the Seattle Spectrum of HIV-Related Diseases Study show that fewer women than men (46% vs. 61%) had quantitative HIV viral load data in their medical records but nearly 98% of both groups had CD4 data. Among those prescribed antiretroviral therapy, 29% of the men and 18% of the women were taking protease inhibitors, although similar numbers (54% vs. 57%) were on some type of HIV therapy. In Los Angeles County, an analysis of prescribing practices revealed that fewer than 44% of

AIDS Mortality Rates Biased by Gender

Psychosocial factors contribute to women reaping less benefit from recent treatment advances than other segments of the population

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Women's Natural History Studies

Highlights of what we've learned so far from two large ongoing studies

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Office on Women's Health

July meeting examines issues affecting women living with HIV, but the office's authority and will to implement recommendations are doubtful

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Wasting in Women

Conflicting data on how gender-based differences in body composition affect the course of wasting in the sexes

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The Vaginal Ecology

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How protease inhibitors affect oral contraceptive levels

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HIV testing of women and their newborns for "their own good," whether they want it or not

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The guest editor of this issue was Risa Denenberg. Risa is a Family Nurse Practitioner, colposcopist and medical writer, with an extensive background in women's health. She is currently a Senior Trainer at Cicatelli Associates, Inc.

women with AIDS are receiving protease inhibitors, compared to 57% of men with AIDS.

Evidence of gender-based differences in medical treatment for women was brought to light in 1994 in data from NIH-sponsored research conducted through the Community Program for Clinical Research on AIDS (CPCRA). The observational database showed that for female and male patients at the same hospital-based AIDS clinics (located in the South Bronx and Harlem), fewer women than men were using antiretroviral medications, and fewer women were using prophylactic medications to prevent opportunistic infections such as PCP (Melnick et al, 1994). Data presented in Pasadena suggested that anti-PCP medications are not fully utilized by women with HIV infection in several other U.S. cities either.

The Social Basis for Differences in Care

Reasons cited by various speakers at the conference for gender differences in use of HIV treatments include lack of access, attitudes of patients as well as providers, adherence concerns, adverse effects, proper dosing in relation to body mass, and stopping therapies. Data were also presented at the conference on the use of protease inhibitors in particular. Investigators in Rhode Island found that among their patients, women and men do not appear to differ in their knowledge and awareness of protease inhibitors, but appear to differ in their level of interest in taking them and in their patterns of use when they do.

A federally funded investigation at Memorial Sloan Kettering Cancer Center in New York conducted focused interviews with HIV-positive women. It found that the major reasons for delay in seeking HIV-related care were connected to cognitive and emotional responses to learning their HIV status. Limited knowledge of HIV treatments and problems with medical personnel were commonly cited, and the investigators recommended expanding educational intervention and support services (Siegel et al, 1997).

Other researchers also emphasized quality peer education programs for women (Jimenez, 1997; Gallagher and Page, 1997; DiDonato, 1997). Consumer education, provided by well-trained and sympathetic peers, in a variety of community-based settings, has the potential to reach HIV-positive women with the information and skills needed to make treatment decisions earlier, thus having an impact on overall mortality, morbidity, and quality of life.

The few gender-based subanalyses of efficacy and tolerance to combination therapies and pro-

tease inhibitors reported at the conference suggest that the barriers to successful treatment were essentially social, not biological. Nelfinavir (Viracept) was reported to be equally efficacious and well tolerated in males and females (Agouron Pharmaceuticals, 1997). Data from a subanalysis of combination 3TC and d4T revealed similar efficacy in males and females (AmFAR, 1997). And data were presented from an Abbott Laboratories' trial (protocol 247) that did not indicate any gender differences in adverse events from ritonavir.

There are indications that easier access to care does increase the number of women with HIV who benefit from treatment. In New York State, women's survival differs by location. New York City has registered a significantly higher decline in AIDS-related deaths among women than in upstate New York, where 27% of the women who died with HIV infection had never received an AIDS diagnosis (Gallagher, 1997).

Personal Observations

To further elaborate on treatment trends in women, *Treatment Issues* interviewed clinicians, researchers, and HIV-positive women on the extent to which women are using the newer treatment regimens and how those treatments affect their survival.

Treatment Issues: What do you believe is the significance of women not having experienced the same survival improvements as men?

Dawn Smith, M.D. (Centers for Disease Control and Prevention): I would say that we have very short periods of data for this and it may be an artifact.

Janet Mitchell, M.D. (OB/GYN, Interfaith Hospital, Queens, NY): It's difficult to comment on national data. There were significant improvements in New York City. But, you can't compare women and men head-to-head. The women come from lower economic strata, their health status is poorer and therefore their outcomes are never going to be equal to that of men. For women with AIDS, it's never just AIDS that they are dealing with.

Alexandra Levine, M.D. (University of Southern California, Kenneth Norris Cancer Hospital): The epidemic in women has not yet peaked, so women now constitute the fastest growing HIV/AIDS group in the U.S. I think, with these increased numbers, we would still expect to see an increase in AIDS deaths, since the percentage increase in AIDS is greater for women than for men.

TI: Do you believe that women are as enthusiastic as men are about advances in HIV treatments?

"For women with AIDS, it's never just AIDS that they are dealing with."

Mary Jo Hoyt, N.P. (*Infectious Diseases Clinic, St. Vincent's Hospital, New York City*): My patients have so many day-to-day problems, especially if they have young children. They have difficulty committing to something that's difficult.

Carolla Marte, M.D. (*Yale AIDS Program, New Haven, CT*): Women consider all of the information, but often decide that they just can't do it. The demands of compliance to the schedule are such that they predict failure for themselves. They just can't devote the time that it takes to take care of themselves.

Janet Mitchell: African-American women are reluctant to embrace Western medicine. Women tend to want to find alternative therapies and not deal with combination therapies at this point. They view the AIDS medications as very toxic, and most of them interfere with the GI tract. That is counter to a deep cultural belief that to be healthy you need to be able to eat. So anything that interferes with the intake of food is suspect.

TI: Is this different than for the men that you see?

Mary Jo Hoyt: In my experience, it's easier for men to commit. They have access to a lot more information about HIV. Their problems with day-to-day living are not always as prominent.

TI: Is access to the newer treatments an issue for women? Do providers offer the same treatment options to both men and women?

Alexandra Levine: Access is still an issue. I think that fewer women than men are actually receiving optimal treatment. Health care providers in general are not yet knowledgeable about the early manifestations of HIV in women and may neglect to suggest HIV testing. They lose the chance to diagnose earlier and begin to treat earlier. Late diagnoses impact on the survival of women in a negative way.

Janet Mitchell: Once you get outside of New York/New Jersey, diagnosis is probably delayed in women, and appropriateness of care is questionable. Most ID [infectious disease] clinics are still very male-focused. Women do not always feel comfortable. I have talked to women who have known about their HIV status for two or more years and have not been in care yet.

Mary Jo Hoyt: We have a large female patient population, but they mostly live far from our hospital, and it's a big deal to get here once a month. There is no way that I can provide adequate treatment education in the clinic setting. Of the women I see, the ones who do the best have additional involvement in a CBO [commu-

nity based organization] that is in their own neighborhood.

TI: What are some other reasons that women are not taking combination therapies and protease inhibitors?

Dawn Averett (*Project Inform, San Francisco*): The new drugs are an improvement, but they don't work for everyone. We need to keep looking for solutions to problems such as toxicity, dosing schedules, side effects. If we were trying to jump the Grand Canyon, would we quit because we're only three-quarters of the way there? No! We still need to get over to the other side. I'm hopeful. I get up every day because I believe I can survive this thing. But, let's face it, we're not there yet.

Dawn Smith: In our research, the primary reason that women were not on the drugs was because their physicians had not suggested it. But some of the women felt that they were doing well without the drugs and therefore were not taking them even though their doctors had suggested them. Some women had seen other people take the drugs and feel worse, so they didn't want to take them.

Mary Jo Hoyt: It's not what I tell them, or what they read; it's if a friend of theirs is using them and doing well.

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Women's Natural History Studies

by Risa Denenberg, R.N., F.N.P., M.S.N.

Much of what is known today about HIV/AIDS was learned from long-term natural history studies of gay men, such as the Multi-center AIDS Cohort Study (MAC) and the San Francisco Gay Men's Health Study. Current understanding of modes of transmission, biologic cofactors, behavioral cofactors, acute HIV infection, progression of HIV disease and case definitions of AIDS were derived from these studies. Until recently, no comparable long-term cohort studies had been conducted in women.

Globally, HIV is a disease acquired primarily via heterosexual intercourse. Although the male cohort studies advanced the overall understanding of HIV's behavior, they inevitably were unable to frame or answer basic questions regarding gynecologic manifestations of HIV infection, hormonal considerations in women, or the mechanics and epidemiology of heterosexual, female-to-female and perinatal transmission.

Critical to our current knowledge of the prevalence of HIV infection in women are data obtained from population-based studies of newborns that began in 1986. These studies, funded by the CDC, used anonymous samplings of newborns as a surrogate for uncovering the underlying HIV seroprevalence in women of childbearing age (see pages 33-34 of this issue). These studies established that women living in economically depressed, urban centers throughout the U.S. had substantial seroprevalence of HIV infection (from 2% to 6% of women). Reports by various authors have tracked the epidemiologic status of women, an early example being a publication (*JAMA*, 1987) authored by Mary Guinan of the CDC, *Epidemiology of AIDS in Women in the United States*. Early, small cohort studies in women have also contributed to our knowledge base, particularly in the area of gynecologic disease. Carpenter published data in 1991 regarding 200 HIV-positive women followed in Rhode Island. Substantial data regarding abnormal Pap smear findings and risk for dysplasia and cervical cancer in women have been published, although treatment recommendations are lacking (see pages 10-18 of this issue). Investigation into the mechanics of maternal-infant HIV transmission led to the intervention study of use of zidovudine to reduce perinatal transmission (ACTG 076).

At the present time, there are various ongoing, longitudinal, natural history or heterosex-

ual transmission studies of HIV in women; for example, EVE, HATS, HERS, WIHS. Women enrolled in these studies receive transportation, up to \$80 payment per visit, and other incentives. Still they often complain about the long visits (four to five hours), the blood draws (9 to 10 tubes of blood), and the in-depth initial two-hour interviews asking about everything from anal intercourse, sexual abuse, and domestic violence to menstrual calendar data. What knowledge do we expect to gain over the next five years, and how will that knowledge be used to help women? At this interim point, the following data is emerging from two large cohort studies, WIHS and HERS. It is of enduring importance for consumers, advocates and clinicians to continue to monitor and provide critical input into these studies.

Women's Interagency HIV Study (WIHS)

WIHS is a longitudinal study of 2,080 HIV-positive women and 575 HIV-negative high-risk women enrolled between October 1994 and November 1995. There are WIHS collaborative sites in: the Bronx/Manhattan; Brooklyn; Washington, D.C.; Chicago; San Francisco/Bay Area; and Los Angeles/Southern California/Hawaii. WIHS's objective is to investigate the spectrum of AIDS-defining and other HIV-related conditions in women, the predictors of genital infections and cervical disease, the immunological and clinical correlates of disease progression, risk behaviors, health care utilization, depression, domestic violence and quality of life. To date, WIHS has published substantial abstracted data from the entire cohort and from subcohorts. Some highlights include:

- High prevalence of domestic violence and childhood sexual abuse in the cohort.
- High prevalence of coinfection with Hepatitis C (40% of 269 women tested), with use of injection drugs the strongest predictive behavior for this coinfection.
- 25% of the cohort reported ever having sex with a female partner.
- HIV-positive women in the cohort have more comorbidity (diabetes, high blood pressure, etc.) than the HIV-negative women (25% vs. 18%).

What knowledge do we expect to gain over the next five years, and how will that knowledge be used to help women?

Office on Women's Health Finally Gets Around to HIV

by Sandra Johnson

On July 8, 1997, the U.S. Public Health Service's Office on Women's Health finally developed a formal interest in women and HIV disease. Approximately 60 women attended the July meeting either in person or via the telephone. The goal of the gathering was to address issues that contributed to the 3% increase in the women's AIDS-related death rate observed in the first half of 1996 while the death rate in other AIDS populations decreased. To its credit, the Office on Women's Health admitted its tardiness on the subject of HIV/AIDS. But the absence of a representative from the NIH's Division of AIDS was strikingly noticeable and did nothing to improve the Office's credibility.

Since the issues affecting women living with HIV are many and varied, the group decided to divide the issues into six general categories—prevention, care, research, partnership, policy and “interfaith issues”—with the understanding that there would be some overlap. In addition, the group was asked to consider policy, partnerships and interfaith issues within each of the first three categories.

Under prevention, female-controlled microbicides and integration of prevention into institutions already used by women were major issues. The care category included access to care within the realm of Medicaid managed care. Separate analyses by gender, a central database for the Women's Inter-agency HIV Study (WIHS) and HIV Epidemiology Research Study (HERS) were just two issues in the research category. Cross-category issues included social conditioning of women as a deterrent to self-care and advocacy and vaccine trials.

Instead of attempting to prioritize issues within the categories in the short time remaining, a suggestion was made that the Office on Women's Health produce a document that will look at past prevention, care, research and policy agendas and list where there has been improvement and where there has not. The checklist approach will better allow the group to see where the gaps still exist and to prioritize future efforts.

Still, the question on the minds of most of the community women present was, “just how much authority, if any, does the Office on Women's Health have to support any recommendations that are eventually put forth?” Many felt that too often, women have sat through many meetings like this, volunteered for work groups and drafted numerous recommendations only to have their hard work and the issues concerning women living with HIV ignored.

A draft of the document should be ready in time for discussion at the next meeting, which is scheduled for September 12, 1997. For information regarding participation, contact Frances Page in the Office on Women's Health at 202/690-7650.

- More acute genital tract infections in the HIV-negative women; positive women had more chronic genital tract infections.
- High prevalence of lower genital tract symptoms in the positive women (itch, discharge, ulceration and vulvar pain) even in the absence of identified infection.
- Amenorrhea linked to severe immune deficiency (13% of women with CD4 counts below 50).
- Variability of HIV viral load in the genital tract.
- Close correlation between viral load in cervicovaginal secretions and in plasma.
- 10% of the 533 HIV-positive women coinfectd with another retrovirus, HTLV-II, with injection drug use again being the strongest predictor.

HIV Epidemiology Research Study (HERS)

HERS is a multicenter study of women with or at high risk for HIV infection. Study sites are in Baltimore, the Bronx, Detroit, and Providence, RI. HERS has conducted observational and demographic research in the entire cohort (863 HIV-positive and 430 HIV-negative women) as well as selected subcohort studies. Some significant data thus far, include:

- Underutilization of anti-HIV therapy and opportunistic infection prophylaxis.
- 28% of positive women reported having at least one family member with HIV infection.
- 40% of women with or at high risk for HIV experienced childhood sexual abuse.
- Longer persistence of human papillomavirus (HPV) in the positive women, compared to the at-risk women.
- Oral and vaginal colonization of candidiasis associated with low CD4 counts.
- Rare fluconazole resistance among oral and vaginal candida isolates.
- High prevalence of bacterial vaginosis (BV) in women with or at risk for HIV.
- Women with female sex partners were 3 times more likely, and women with male partners were 1.7 times more likely to have BV than women without partners.

HIV's Impact on Women's Physique

by Dave Gilden

Women and men obviously differ in many ways besides sex organs. Differences in the effects of sex hormones result in men being on average more muscular compared to women of the same height and exercise patterns. This contrast in body composition is of particular interest for AIDS and HIV infection. Response to disease involves the whole body, even for infections that are more localized in the organism than is HIV. Energy and protein stores must be mobilized to support the vigorous inflammatory and lymphocyte-based immune responses.

For transient infections, there might be no evident difference between men and women in changes in body composition. But HIV lasts for years, causing a progressively greater disease burden in terms of both HIV levels and opportunistic infections. Wasting, or weight loss accompanied by decline in muscle mass, has long been noted in men with AIDS or advanced HIV infection. Only lately have researchers begun to look at women with HIV to see how their metabolic response to the virus differs from that of men.

A spate of reports on the subject appeared last year, at the Eleventh International Conference on AIDS. Their conclusions were widely divergent. Donald Kotler, M.D., of Columbia-St. Luke's Hospital, New York, co-authored a series of presentations (see abstracts Mo.B.421, Mo.B.1390, Tu.B.2382 and Th.B.4251). The first of these studies compared 279 men and women with AIDS to 1136 HIV-negative controls. Fat-free mass accounted for 51% of the difference in weight between the HIV-positive and the control men compared to only 18% of the difference between HIV-positive and -negative women.

Two much smaller studies conducted by Kathleen Mulligan, M.D., of San Francisco General Hospital reached the opposite conclusion (see abstracts Mo.B.1389 and We.B.181, also *Journal of Acquired Immune Deficiency Syndromes*, May 1, 1997; 15(1):43-8). Women and men seemed to have equal increases in metabolism, which were accompanied by losses in both fat and protein, without evidence that fat deposits were perversely spared at the expense of protein. Commenting in an interview on her group's observations, Dr. Mulligan said, "Women have more fat, and we thought they would spare lean body mass more. But in the people we studied, men didn't seem to be disproportionately losing lean body mass. 'The men with more fat lose more fat, too.' Weight loss in AIDS or HIV then would be simi-

lar to simple malnutrition, during which the composition of the weight lost depends on the person's initial body composition.

Dr. Kotler countered in another interview, "It may well be that men lose lean and fat, but my own work suggests that women lose mostly fat and not so much lean."

This dispute was further played out at the NIH Conference on AIDS Wasting Syndrome, held this year on May 20 and 21. A large amount of the difference in conclusions could be related to the types of patients studied. Dr. Kotler has suggested that his patients were leaner to begin with than the San Francisco cohort. At first glance, it seems unlikely that San Franciscans are fatter than New Yorkers, except that the proportion of people with HIV who are from drug using and impoverished backgrounds is much higher in New York. (One of the New York studies presented at the Eleventh International Conference, abstract 1390, was specifically in "substance abusers.")

More importantly, the San Francisco investigators did not look at people with acute opportunistic infections, who experience rapid weight loss accompanied by restricted energy intake. Greater lean body masses might well occur in such situations—they have been noted in non-HIV studies of acute infection. But no one has focused on women experiencing rapid weight loss to see how they might differ from men.

The NIH Conference reached a tacit compromise that wasting syndrome in AIDS is distinguished by a failure to restore lean mass in periods when weight rebounds. As in other instances of cyclic weight loss, eating more may bring one's body back to its normal weight, but the protein stores in lean tissue will remain depleted. Some women, and men, too, who are taking protease inhibitors are now complaining of shrinkage in limb and hip size while new fat bulges appear on their torsos. At the same time, they are gaining or maintaining total weight.

Men have a variety of anabolic agents, including testosterone and synthetic steroids that they can use to reorient their body toward rebuilding lean tissue. Women, who probably also have reduced testosterone levels during HIV infection, could use these compounds too, usually at lower dosages. Knowledge is limited in this area, but at least studies for women are now taking place. Another possibility is embarking on a resistance

Only lately have researchers begun to look at women with HIV to see how their metabolic response to the virus differs from that of men.

exercise program, such as weight lifting. This exercise will make your body more sensitive to your natural anabolic hormones, another subject that has been poorly studied in women. At the NIH conference, Tufts University researchers reporting on a small ongoing study of resistance training described weight gains in women and men averaging 3.8%, with 79% of this gain being lean body mass.

Finally, there is the hugely expensive recombinant growth hormone available from Serono Laboratories. It is purportedly sex-neutral, although women may clear the compound more slowly than men. No gender analysis of growth hormone's effects is available: Of the 205 volunteers receiving growth hormone in trials, only five were women.

HIV and the Vaginal Ecosystem

by Risa Denenberg, R.N., F.N.P., M.S.N.

The healthy vagina has a number of natural protective factors against STD/HIV infection and related diseases.

The vagina, as a potentially healthy structure that can defend against invasion by HIV and other pathogens, received appropriate recognition at the May 1997 National Conference on Women and HIV. Penelope Hitchcock, D.V.M., of the National Institutes of Health gave a state-of-the-art lecture, "The Vaginal Ecosystem: Nature's Gate-Keeper for Reproductive Health of Women." Throughout the conference, researchers offered accolades for the healthy vagina, although many mentioned that such a thing was not easy to find in today's world. The importance of vaginal health was related to risk for acquiring and transmitting HIV and other STDs. Factors related to vaginal health are believed to include: pH (acid/base balance), local immune factors, female hormones, the menstrual cycle, sexual maturity and development, use of contraceptives, douching, sexual practices, and the types of organisms present.

The healthy vagina has a number of natural protective factors against STD/HIV infection and related diseases. At puberty, with the onset of menstruation, the female genital tract undergoes changes due to the influence of the female sex hormone, estrogen. The previously thin and fragile vaginal mucosa grows plump and resilient, and becomes rich in glycogen (a form of glucose). Now, healthy organisms, the lactobacilli, begin to thrive. Lactobacillus uses glycogen as an energy source, breaking it down into glucose and lactic acid. Under the influence of lactic acid, the vagina maintains a low (acidic) pH of approximately 4.0. This acidic condition

does two important things: (1) it kills germs, and (2) it causes squamous epithelial cells (mucous membrane) to cover over the exposed, fragile columnar cells of the cervical canal. Lactobacillus also produces hydrogen peroxide, which kills pathogens. Protective immune factors in the vagina include defensins, antibodies, nonspecific cytokines and inflammatory responses.

Factors Increasing Susceptibility to STDs/HIV

Inflammatory responses (including increased blood vessel permeability, tissue swelling and irritation accompanied by local invasion by lymphocytes and macrophages) also can contribute to increased susceptibility to HIV. Inflammation is triggered by various germs (especially yeast, bacteria and trichomonas) or mechanical trauma (including penetration, douching, tampon use, pelvic examinations and vaginal treatments). When the vagina is inflamed, it is characterized by microabrasions (tiny breaks in the mucosa), presence of white blood cells, red blood cells, infection-causing bacteria and an elevated pH of 5.5-7.0.

Test-tube research showed that there is a synergistic enhancement of HIV replication by both chlamydia and the accompanying presence of inflammatory white blood cells (Landers, 1997). And Sharon Hillier, M.D., reported at the National Conference that data now show an association between bacterial vaginosis (a common vaginal infection) and risk for acquiring HIV infection. Chlamydia infection is also a risk factor for HIV acquisition. Clinicians have logically assumed that STDs that cause genital ulcers (herpes, syphilis, chancroid, granuloma

Drug-Drug Interactions between Protease Inhibitors and Oral Contraceptives

Indinavir
modest increase
in OC levels, no
recommended
dose change

Nelfinavir
estrogen and progesterone
levels decreased;
alternative method of birth
control recommended

Ritonavir
estrogen levels
decreased;
alternative method of birth
control recommended

Saquinavir
no data

inguinale) in addition to inflammation are associated with further increased risk for acquiring HIV in both males and females.

Hormone levels during menstrual cycling also affect susceptibility to infection. A recent report (Howell, 1997) postulated that there is a waxing and waning of protection against HIV during the menstrual cycle. In the second half of the cycle, the immune system is suppressed so that sperm won't be destroyed, and there is an increased risk of infection. Low estrogen levels directly affect the vaginal mucosa, making it thin and friable. Other factors known to lower estrogen levels include breast-feeding, menopause and malnutrition.

Sexual transmission of HIV is thought to occur by infection of host CD4 lymphocytes, macrophages and dendritic cells, the last of these being especially abundant in the cervical canal, where the columnar epithelium is found. Exposed columnar epithelium cells (referred to as *cervical ectopy*) are associated with an increased risk of transmission of numerous pathogens, including gonorrhea, chlamydia and HIV. Cervical ectopy is present in adolescents, during pregnancy and after childbirth.

Ectopy also occurs with some hormonal contraceptives. Counter to previously held theories that they offered some protection against STDs, these methods do not protect against gonorrhea and chlamydia and may even contribute to greater susceptibility. Oral contraceptives (OC) contribute to cervical ectopy and the progesterone-based methods (depo-provera, Norplant™ and the mini-pill) can cause irregular bleeding. Both conditions are currently believed to increase transmission of STDs.

In a review of 25 studies regarding risk of HIV acquisition in OC users, Ward Cates, M.D., of the Emory University and University of North Carolina Schools of Public Health, found that there were no case-controlled, prospective studies, and that the range of associations were from slightly protective to clearly harmful. When summing up four studies concerning use of progesterone-based methods at the National Conference on Women and HIV, Cates observed that these methods nearly double a woman's risk for acquiring HIV.

HIV in the Female Genital Tract

Though HIV can be detected in a majority of genital secretions from HIV-positive women, high HIV levels in genital secretions are often associated with high plasma blood HIV levels and/or genital tract infections or inflammation (Cu-Uvin, 1997; Hart, 1997; Kovacs, 1997). HIV viral load in genital tract secretions is determined by cervicovaginal lavage (CVL), a technique

in which saline solution is sprayed into the vaginal vault and then recovered for testing. The cervicovaginal secretions (CVS) can then be tested for HIV by either quantitative culture or PCR testing. The cellular fraction of the sample can be separated from the cell-free fraction for separate quantitative testing. Infectivity is assumed to be possible when either fraction tests positive, but HIV viral shedding is strongly associated with high concentrations of cell-free virus.

Investigation of HIV viral loads in vaginal secretions has been conducted in the natural history studies over the past three years (WIHS, WITS, and HERS, see pages 5-6 of this issue), as well as in other cohorts of HIV-positive women. WIHS (Women's Interagency HIV Study) data indicate that 63% of women with HIV have HIV-positive cervicovaginal secretions, with good correlation between the CVS viral load and blood plasma viral load. WIHS found that CVS HIV positivity decreased with increasing CD4 count, but was significantly associated with history of genital tract warts. WIHS data also suggest that HIV-negative women have more acute genital infections, but positive women have more lower genital tract symptoms suggestive of chronic inflammation (discharge, itch, vulvar pain, ulcerations) without a finding of STD on clinical examination.

A substudy within WIHS is examining the role of local immune factors in the lower female genital tract. Twenty-five percent of HIV-positive women had antibody dependent cell-mediated cytotoxicity (ADCC) against HIV gp120. High serum ADCC antibody titers are considered to be associated with better immune function.

In the Emory Vaginal Ecology Study (EVE), cell-free and cell-associated fractions of the CVS were present in about 65% of subjects. There was

Sexual transmission of HIV is thought to occur by infection of host CD4 lymphocytes macrophages and dendritic cells, the last of these being especially abundant in the cervical canal.

Comfort Measures for Vaginal Conditions

Sitz baths (for inflammation, swelling and pain): ocean salts, Epsom salts, goldenseal powder

Poultices (for infections): comfrey, goldenseal, myrrh

Balms (for itching, burning and pain): calendula cream, Vaseline™, A&D ointment, Desitin™, xylocaine jelly (Rx)

Emollients (for dry, itchy rashes): Vitamin E oil, wheat germ oil, zinc oxide

Drying agents (for herpes): calamine, facial clays, aloe vera gel

Anti-itch (for itching and irritation): calamine lotion, oatmeal baths, Aveeno™ (soap or bath powders), Benedryl™ (lotion or tablets)

a good correlation between plasma HIV and CVS HIV. A substudy in EVE measured the effect of antiretroviral therapy on viral load in CVS. For all nine women studied, any new HIV therapy correlated with a decrease in CVS viral load (median decrease of 1.4 logs or 95%), compared to a nonsignificant 33% decrease in CVS viral load in the control group on no treatment.

A similar study of CVS conducted at Harvard Medical School could detect cell-free HIV in 59% of samples. The existence of appreciable free virus was associated with visible blood in the CVS specimen, vaginal candidiasis, and low CD4 counts. Free virus did not correlate with the acidity of the CVS, presence of non-visible red blood cells, use of hormonal contraceptives, other genital tract infections or current use of HIV therapies.

Impact of HIV Infection on Local Vaginal Ecology

Women with HIV have several important concerns regarding vaginal ecology beyond worries about the risk of mucosal transmission of HIV to sexual partners and children. But basic scientific inquiry into how the presence of HIV affects women's lower genital tract remains unanswered. There is clinical and biological evidence that HIV interacts there with other viral infections, notably CMV, HSV (herpes simplex virus) and HPV. HIV's presence in particular may up-regulate local factors that favor growth of HPV.

If vaginal HIV leads to chronic, nonspecific inflammation, are positive women then more vulnerable to additional genital tract infections? Positive women often complain of increased vaginal discharge and irritation. Does chronic inflammation discourage or welcome new pathogens? Are systemic or local immune factors more significant in the increased preva-

lence of vaginitis, pelvic inflammatory disease and genital warts? Local factors may be responsible for vulvovaginal candidiasis preceding oral/pharyngeal candidiasis in positive women. How does the presence of HIV in cervicovaginal secretions affect vaginal pH and the presence of lactobacillus? In the presence of inflammatory cells, the pH is often increased. Altered pH generally does not favor a healthy vaginal ecology or growth of lactobacilli. Does HIV infection *per se*, affect female hormonal levels? If so, does this happen due to local factors or systemic factors? Vaginal health can be enhanced by self-inspection, frequent gynecological evaluations, prompt diagnosis and treatment for any genital tract infections, refraining from douching, and using comfort measures for any symptoms (see box on page 9 of this issue). Are there specific interventions that apply to improving the vaginal health of women with HIV? It is critical that research efforts do not ignore these crucial questions in favor of exclusively studying vaginal HIV viral shedding and the mechanics of mucosal HIV transmission.

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Cervical Cancer and Women with HIV

by Risa Denenberg, R.N., F.N.P., M.S.N.

Cervical cancer is a preventable condition, and when diagnosed early, it can be cured. Deaths from cervical cancer have gone down by 70% in the U.S. since 1943, when routine Pap smears were introduced for sexually active women. Pap smears consist of a sample of cells scraped from the cervix and examined under a microscope for precancerous abnormalities. Abnormal cells may be referred to as dysplasia, cervical intraepithelial neoplasia (CIN) or squamous intraepithelial lesions (SIL). *In this article these three terms are used*

interchangeably. Only high-grade dysplasia is considered to be a true cancer precursor. The significance of mild dysplasia is presently uncertain.

Cervical cancer has long been known to be a disease of sexually active women. Though a causal connection has not been completely established, malignancy in the cervix is now firmly associated with infection by specific subtypes of human papillomavirus (or HPV, the accepted cause of genital and anal warts). Malignancy in the cervix is believed to begin to develop in ado-

lescents or young adults and progress slowly over the decades. It is also strongly linked to tobacco use (Winkelstein, 1990; Feldman, 1997).

The Centers for Disease Control and Prevention (CDC) added invasive cervical cancer to its list of AIDS-defining conditions in 1993. Still, much remains unknown about the incidence and natural history of this disease in HIV-positive women. Pap smear screening of HIV-positive women has demonstrated a four- to tenfold elevation in abnormal results compared to HIV-negative women. It is hoped that such screening appreciably decreases the potential for cervical cancer in identified HIV-positive women. The proportion of women diagnosed with dysplasia and cervical cancer who are also HIV-infected is unknown, though, since many women with these conditions may not be aware that they also have HIV. They may have never been tested for the virus, or their cervical pathology may have preceded other signs and symptoms of AIDS. Just as rigorous surveillance for cervical cancer and its precursors must continue in women diagnosed with HIV, aggressive surveillance of women with cervical abnormalities must pursue the connection with HIV infection.

Over the past ten years, a great deal of research has amassed regarding Pap smear findings and their management in HIV-positive women. There continue to be a number of controversies, divergent findings and a range of clinical recommendations for the prevention, diagnosis and treatment of lower genital tract dysplasia in HIV-positive women. (It should be noted that research on HPV-related cancers and their precursors has not been adequately conducted in HIV-positive men, in whom anal cancer is associated with the presence of HPV—as is also true for women. Prevention and treatment recommendations are lacking for men as a result of this paucity of research.)

Incidence of HPV and Dysplasia in HIV

In an early description of the common occurrence of HPV and dysplasia in HIV-positive women, Byrne (1989) reported that 7 of 19 (37%) HIV-positive, asymptomatic women had abnormal Pap smears. Other findings in these women included vaginal and vulvar abnormalities including both warts and dysplasia. Feingold (1990), compared HIV-negative and HIV-positive women and reported that positive women have higher rates of cervical HPV infection.

Current research is attempting to evaluate the subtypes of HPV present in HIV-positive women, and examine the value of testing for HPV with PCR viral detection technologies. Cervicovaginal lavage samples used for PCR testing

confirm that HIV-positive women are more likely to have HPV than are negative women. Investigators also have found that women with HIV have more subtypes of HPV and a greater prevalence of high-risk HPV subtypes (Sun, 1995).

Women on immune suppressive therapies have long been known to experience increased HPV-related events, including warts, dysplasia and cancer (Vermund, 1990). In 1987, Bradbeer published an early inquiry into the relationship between HIV and cervical dysplasia. This was followed by numerous reports including anecdotal reports, descriptive studies, cross-sectional studies, longitudinal studies and case-controlled studies (Provencher, 1988; Feingold, 1990; Maiman, 1990; Vermund, 1991; Mandelblatt, 1992; Maggwa, 1993 and others). All of these reports verified that HIV-positive women are at a greater than normal risk for acquisition, persistence and progression of HPV-related genital tract dysplasia.

Studies have observed, too, that the incidence of HPV-related dysplasia increases as immune function declines in HIV-positive women. Cross-sectional and longitudinal samples of HIV-positive women demonstrate that both rates of HPV infection and disease and of high-grade dysplasia increase as CD4 counts lower (Schafer, 1991; Vermund, 1991; Anastos, 1992; Wright, 1994).

HPV "Field Effect"

Early reports on HPV disease in HIV-infected women described that warts, and other, more serious HPV-related growths, frequently showed a "field effect" in the genital tract. They commonly occurred in two, three or even more locations including the cervix, vagina, vulva, periurethra, perineum, and the perianal and rectal areas (Sillman, 1987). In 1990, Maiman compared cases of HIV-positive and -negative women with preinvasive cervical disease. Fifty percent of the positive women had perianal disease, "field effect" and/or extensive cervical disease. None of the negative women had any of these conditions. Further, anal HPV infection is found as commonly as cervical HPV infection in HIV-positive women (Williams, 1994).

A cross-sectional study of 396 HIV-positive and 395 negative women further confirmed these findings (Chiasson, 1997). All of the women were evaluated by Pap smear, colposcopy and cervicovaginal lavage (CVL) for HPV typing. In these women, prevalence of lower genital tract condyloma (warts) was higher in HIV-positive (5.6%) than HIV-negative women (0.8%). High-grade vulvar dysplasia (VIN) was present in two positive women, but

The incidence of HPV-related dysplasia increases as immune function declines in HIV-positive women.

none of the negative women, and HPV growths were far more likely to demonstrate the "field effect" in the women with HIV.

Cervical Cancer in HIV

Does all this mean that more HIV-positive women will develop cervical cancer? At present, there is only speculation that these trends will lead to increasing incidence of cervical cancer and related deaths. Some researchers have looked aggressively for answers. In 1990, Maiman and colleagues evaluated 37 women diagnosed with invasive cervical cancer. Nineteen percent of the cancer patients under age 50 were HIV-positive. Positive patients had more advanced invasive disease than negative ones, and disease persisted or recurred in all positive patients compared to 37% of negative patients.

Other researchers (Relliman, 1990; Schwartz, 1991; Maiman, 1993) have published case reports of rapidly progressive invasive cervical cancer in women with HIV. There have also been case reports of invasive vulvar cancer in HIV-positive women (Giorda, 1992; Wright, 1996).

Maiman and his colleagues have continued to study the relationship between HIV and cervical cancer in a large cohort of women in Brooklyn, where there is a high female HIV rate. In this cohort, women with HIV infection and cervical cancer have a higher recurrence rate than HIV-negative women diagnosed at comparable stages of cancer (Maiman, 1993). The investigators also reported on their findings from a colposcopy clinic at a Brooklyn hospital, where patients were routinely offered HIV counseling and testing. The positive women had increased rates of severe dysplasia, larger lesions, and greater "field effect" than the women testing negative (Fruchter, 1997). The authors point out that since HIV-positive women are four to ten times more likely than similar HIV-negative women to have an abnormal Pap smear, colposcopy clinics tend to have a concentration of HIV-positive women, and thus should represent an important site for HIV information, counseling and testing.

But do the Brooklyn findings apply to all women with HIV infection? When the CDC in 1993 added invasive cervical cancer to the list of AIDS-defining conditions in women with HIV infection, researchers began to undertake surveillance investigations of women with AIDS and invasive cancer (Klevens, 1995) and to review invasive cancer cases for AIDS surveillance purposes (Reardon, 1994; Kelley, 1995). In a retrospective review of data on cervical cancer

and AIDS in women registered through the New York City Department of Health and Institutional Tumor Registries from 1987 to 1995, Maiman (1997) found a strong correlation between cervical cancer and HIV disease throughout New York City.

Between 1980–1992, 377 women living in Contra Costa County, near San Francisco, were diagnosed with invasive cervical cancer. A surveillance review of 79 charts identified only two additional cases of AIDS. However, HIV test results were available for fewer than 15% of cases. The investigators did not recommend aggressive HIV surveillance of cervical cancer cases, but strongly recommended establishment of protocols by which clinicians diagnosing cervical dysplasia provide HIV counseling and testing for clients.

The Gynecologic Oncology Group has recently begun a nationwide study (GOG 154) examining the issue of HIV testing and follow-up for women younger than 50 with invasive cervical cancer. It is hoped that this will provide some insight concerning various clinical, pathologic, epidemiologic and demographic factors. Without an organized HIV screening program for women with invasive cervical cancer, it is not possible to gauge the magnitude of the disease in those with HIV infection.

Pap Smear Screening vs. Colposcopy in HIV

Another important question to consider is, does Pap smear screening adequately identify HIV-positive women who are at high risk for cervical cancer? We have known for quite a while that HIV-positive women have high rates of abnormal Pap smears. What we are not certain about is what these abnormal results reveal about risk for cervical cancer in women with HIV. Conversely, we also do not know if the Pap smear is sensitive enough to identify abnormalities in HIV-positive women in time to prevent cervical cancer. Should all HIV-positive women be screened for dysplasia with more sensitive methods, such as colposcopy and biopsy? So-called "screening colposcopy," which involves directly examining a woman's cervix with a special microscope, has several critical disadvantages. It requires management by a specialist and the procedure can be painful. Further, the biopsies that frequently accompany the colposcopic exam are invasive and entail a risk of bleeding or infection. All in all, this is not a cost-effective way to identify cervical cancer in the general population. It is difficult to say whether colposcopy screening should be advised for a specific HIV-positive subgroup.

"Screening colposcopy," which involves directly examining a women's cervix with a special microscope has several critical disadvantages.

Women's successive Pap smear reports were evaluated by investigators at Jackson Memorial Hospital in Miami (Provencher, 1988). The overall incidence of abnormal Pap smears for the HIV-negative group was 5%, while the overall incidence of abnormal Pap smears for the positive women was 63%. Certainly the number of abnormal Pap smears identified *over time* in groups of positive women is impressive. But when Maiman and colleagues (1991) compared routine Pap smears to routine colposcopy in HIV-positive women they found the Pap smears to be less than adequate. Thirteen of 32 patients (41%) had CIN by colposcopy and biopsy, yet only one of these women had CIN on Pap smears taken at the same time. The authors felt that cytologic screening may not be adequately predictive of CIN in HIV-positive women. Some clinicians began to recommend that colposcopy be part of the routine management of HIV-positive women. When other researchers (Adachi, 1993; Korn, 1994) looked at Pap smear adequacy, though, Pap smears were found to be as sensitive in HIV-positive women as in other women.

Recurrent Dysplasia with HIV

Longitudinal reports also find that dysplasia frequently recurs after treatment in HIV-positive women. Treatment for dysplasia involves various modes of removing or destroying the abnormal tissue (e.g. cryotherapy, electrocautery, laser and surgical excision). In the Brooklyn cohort (Maiman, 1993), 39% of HIV-positive women, compared to 9% of negative women had recurrences of dysplasia after standard treatments. The same authors later reported that 62% of the positive cohort had developed recurrent dysplasia by 36 months. And recurrence rates reached 87% in women with CD4 counts below 200. After a second treatment, dysplasia recurred in 42%, and three of six women had a third recurrence (Fruchter, 1996). The authors note that the risk of recurrence is related to degree of immune compromise and that innovative therapies are needed for controlling CIN in women with HIV.

Interpretation of Mild Atypical Cell Patterns

A further controversy among clinicians is appropriate management for "atypical" Pap smear results that are not conclusive for dysplasia and for results that indicate "inflammation" without an apparent cause. Atypical squamous cells are those cells that show minimally abnormal findings including the characteristic findings associated with HPV-infected cells (called koilocytes). Inflammation involves the presence of white blood cells, pathogens,

and/or clumping of cells that make the specimen more difficult to evaluate, but do not by themselves indicate dysplasia. HIV-positive women have a high incidence of atypical cells and inflammation, which in the general population are often managed by treating any infection that is present and repeating the Pap smear in three months (treat and repeat). It is known that a small percentage of women with these types of Pap results actually do have high-grade lesions or cancer, thus any woman with repeated atypical cells on Pap smear results should be evaluated by colposcopy and biopsy.

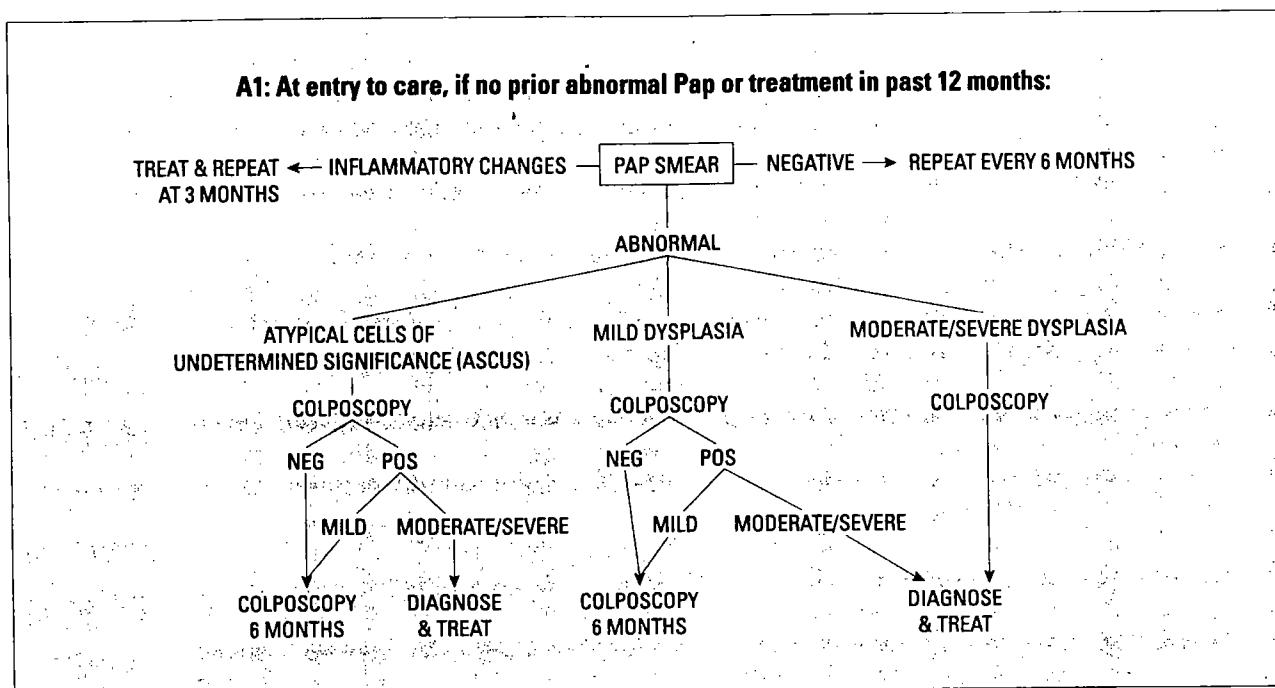
It is unknown to what degree HIV infection in the genital tract contributes to Pap smear findings of "atypia" or inflammation, or if there are other variables that may account for an increased incidence of these findings. A large prospective study of Pap smear and colposcopic findings from 453 HIV-positive and 401 HIV-negative women was begun in 1990, and continued at six-month intervals (Wright, 1996). In this cohort, Pap smears from HIV-positive women were far more likely to be diagnosed with mild cytologic atypia than were smears from negative women. The HIV-positive women with mild atypia on Pap smear findings were 2.7 times more likely to have mild dysplasia on colposcopy/biopsy than the negative women, and 12% of such smears were associated with high-grade dysplasia on colposcopy/biopsy. The authors conclude that mild cytologic atypia, a frequent diagnosis on Pap smears from HIV-positive women, is strongly associated with CIN. They recommend that all HIV-infected women with mild cytologic atypia be referred for colposcopy. For inflammatory changes they recommend the same management as for other women; either to treat and repeat the Pap smear in three to four months or to refer for immediate colposcopy.

Update from the National Conference on Women and HIV

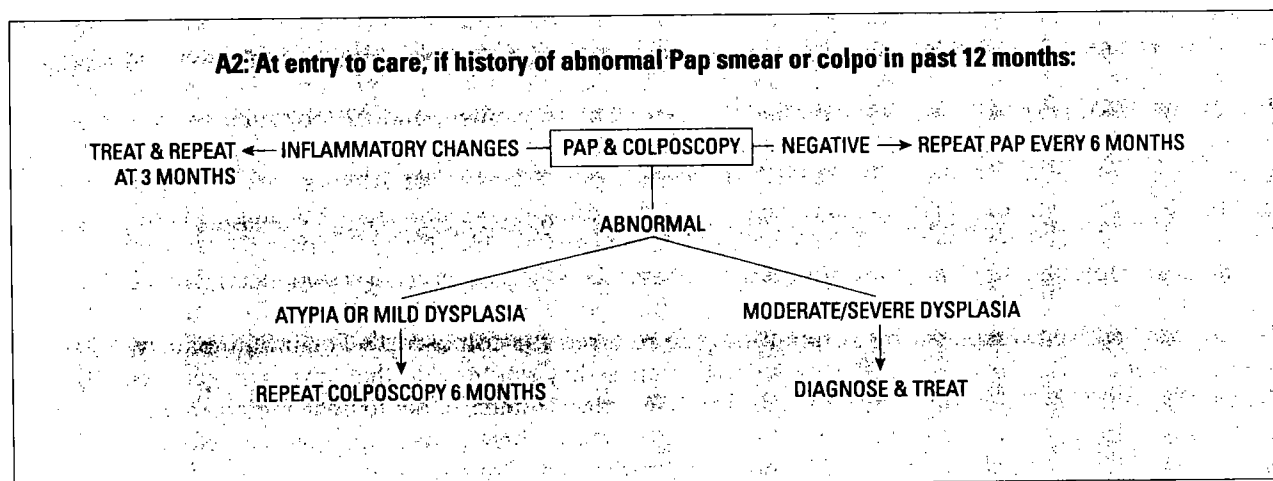
Some interesting areas of inquiry into Pap smear management and the natural history of HPV infection in HIV-positive women were reported at the National Conference on Women and HIV. Several researchers discussed the use of HPV DNA assays for detecting high-risk HPV subtypes in HIV-positive women. Clinicians have been eager to have an adjunctive test, besides the Pap smear, to use in screening women to determine whom to refer for colposcopy. It is disappointing that HPV DNA typing tests appear to improve the sensitivity of Pap smear screening only slightly.

There are several possible pathways by which HIV in the genital tract may enhance the growth potential for HPV in infected cells.

Algorithm for PAP Smear Management in HIV-Positive Women



A1: HIV-positive women with no recent history of abnormal Pap smear or recent treatment for dysplasia should have a thorough lower genital tract inspection and Pap smear. This should be repeated every six months as long as there are no abnormalities.



A2: HIV-positive women who have an abnormal Pap smear or colposcopic evaluation in the past 12 months should be evaluated by Pap smear and colposcopy within six-eight weeks.

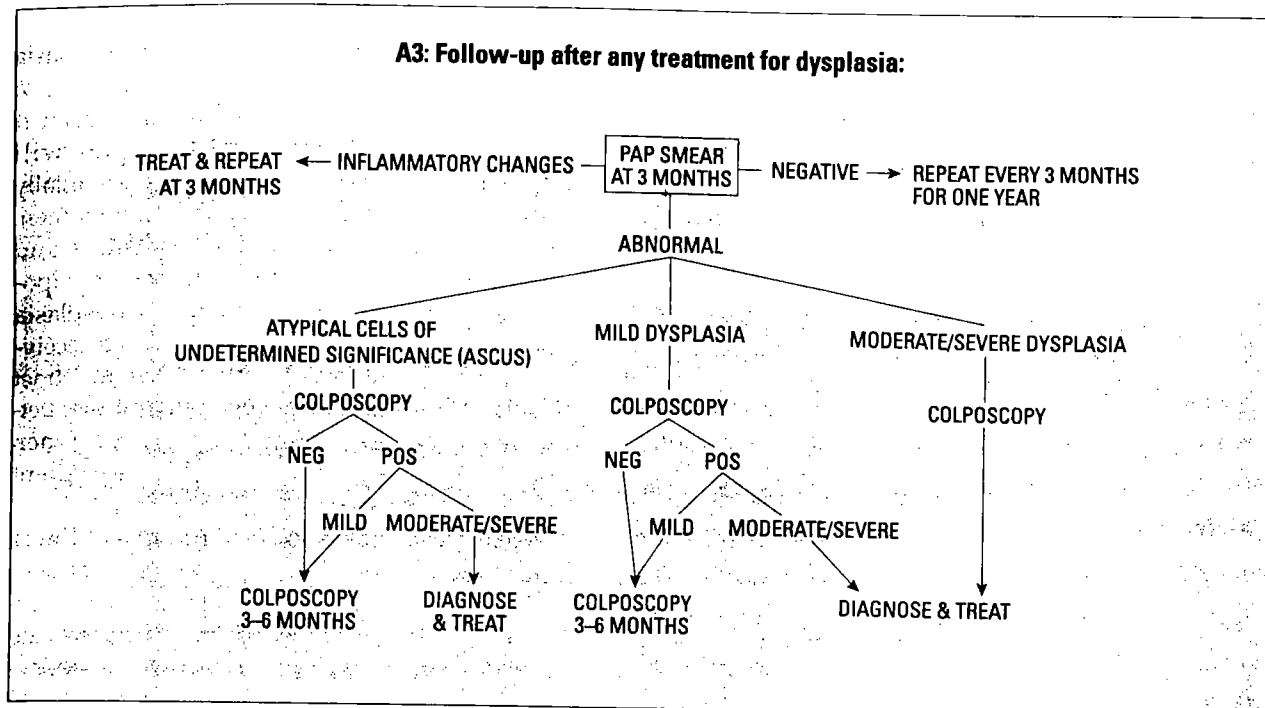
Biomedical research into the interaction between HIV and HPV in laboratory cell lines also was described (Cage, 1997). In the lab, HPV-infected cells display an increased growth response when exposed to interleukin-6 (IL-6), tumor necrosis factor (TNF- α), and the HIV-produced tat protein. Since HIV can up-regulate the production of IL-6 and TNF- α , there are several possible pathways by which HIV in the genital tract may enhance the growth potential for HPV in infected cells, conceivably leading to an increased risk of cervical cancer.

Current Guidelines for Women with HIV

For many years now, clinicians who care for large numbers of HIV-positive women have recommended increasing the frequency of their Pap smear screening. Many experts in HIV primary care for women recommend that all HIV-positive women receive gynecologic evaluations including Pap smear screening in their usual primary care setting every six months (Marte, 1989; Allen, 1990; Minkoff, 1991; Denenberg, 1993 and others).

Unfortunately, there is not yet a consensus regarding frequency of Pap smears or the man-

A3: Follow-up after any treatment for dysplasia:



A3: HIV-positive women who have undergone any treatment for dysplasia in the past year should have a Pap smear three months after treatment and every three months after that for one year. After four negative Pap smears, they can resume a schedule of every six months.

agement of abnormal findings. In 1990, the CDC published recommendations for annual Pap smears for HIV-positive women unless the results were abnormal. In 1991, Minkoff and DeHovitz published a counterpoint argument, raising concerns about the conservative nature of the CDC recommendations. They suggested that since HIV-positive clients are seen more than once a year, semi-annual Pap tests would seem a reasonable approach in the primary care setting, with liberal referral for colposcopy. They further recommended that treatment of dysplasia should be aggressive.

In 1994, the federal government's Agency for Health Care Policy and Research (AHCPR) published "Clinical Practice Guideline: Evaluation and Management of Early HIV Infection," which included a Pap smear algorithm for women with early HIV infection (p. 174). Among the document's recommendations were the following:

1. Annual Pap smears for women with normal results, with Pap smears every 6 months for women with a history of HPV or dysplasia.
2. Repeat smear immediately in cases reported as "no endocervical cells seen."
3. Treat and repeat for "inflammation."
4. Refer all women with abnormal Pap results for colposcopy.

Recommendation number 2 was particularly confusing clinically. Pap smears should not be repeated any sooner than in six to ten weeks in any event (repeating sooner significantly

decreases their sensitivity), and there is no supporting data for repeating smears due to absence of endocervical cells in HIV-positive women.

In 1995, the CDC published "USPHS/IDSA Guidelines for the Prevention of Opportunistic Infections in Persons Infected with HIV: A Summary," which included recommendations for prevention and management of HPV disease. These recommendations (pp. 22-23) included:

1. Two Pap smears in first year after HIV diagnosis, then annually if negative.
2. Pap smears every six months optional for high-risk women.
3. Treat and repeat for inflammation.
4. Annual follow-up for "atypical cells of undetermined significance (ASCUS)."
5. Mild dysplasia to be followed either by repeat Pap or colposcopy.
6. High-grade dysplasia referred for colposcopy.

These recommendations were at variance from the AHCPR clinical algorithm, and the recommendation for ASCUS was particularly troubling, since clinicians never advise waiting 12 months to repeat a Pap smear after observing atypia of unknown significance (Kurman, 1992).

In the recently published revision (CDC, 1997), annual Pap smears are recommended for women with two consecutive negative Pap reports, and management of all abnormal Pap

Treatment failure and recurrence of dysplasia in positive women is a discouraging finding of the present research.

smears should follow the management strategies described by the National Cancer Institute Consensus Panel as appropriate for all women. These recommendations are an improvement over the 1995 version, but they are still at variance with the AHCPR algorithm, and they do not provide recommendations for treatment and long-term follow-up.

Management of Abnormal Pap Smear Results

The goal of Pap smear screening is to prevent cervical and/or lower genital tract cancer. The Pap smear is a screening test with an average sensitivity of about 70% to 80% (it may miss 20% to 30% of true abnormalities) and an average specificity of about 70% (about 30% of abnormal reports may be from women without a true abnormality). Thus, Pap smears may miss true abnormalities or identify abnormal cells for which no true abnormal growth is present. The best management strategy is one that will not fail to detect a true precursor to cancer, but also does not require that large numbers of women undergo unneeded invasive biopsies.

It is evident that the sensitivity and specificity of the Pap smear does not differ significantly among HIV-positive and HIV-negative women. Yet the proportion of HIV-positive women who receive abnormal Pap smear results is much higher than for HIV-negative women, therefore a greater number of HIV-infected women who have abnormalities will go undetected. Coupled with this lack of detection, there is the risk that an undetected abnormality may progress to cancer more rapidly in immune-compromised women. The need to create a strategy to identify these women early is readily apparent.

Management of Pap smear findings should rightly be a part of primary care for all women. Unfortunately, all too often, primary care providers are not adequately trained in general management strategies for abnormal Pap results in the general population of women, and there is still more confusion about managing Pap smears for women with HIV. The desire to refer all such women to expert colposcopists is tempting, but not reasonable, nor does it represent quality primary care. On the other hand, improper management of abnormal smears can cost lives. The three algorithms proposed on pages 14 and 15 are based on a thorough review of the available research and clinical recommendations, and a belief that Pap smear management is not outside the scope of primary care for HIV-positive women. They are provided as a guide for primary care providers and their HIV-positive female patients.

Managing True Cancer Precursors

Treatment failure and recurrence of dysplasia in positive women is a discouraging finding of the present research. It remains to be seen if highly active antiretroviral therapies will improve local immune function, thus potentially improving treatment success for some women. Hundreds of women, both HIV-positive and -negative have undergone thousands of colposcopies, biopsies and treatments for dysplasia both as research subjects and as women receiving standard care to prevent lower genital tract dysplasia. Several researchers point out that better treatments are needed for positive women with HPV-related disease, but little treatment research is in progress.

Again, the goal is to prevent or treat lower genital tract cancer. Thus, until better treatment regimens are available, some clinicians are offering to provide an observational approach (see algorithms) to management of warts and biopsy-proven mild dysplasia, since the recurrence rate after treatment is so high. Women can be examined every three to six months to search for any indication of true cancer precursors. Treatment for warts can be at the option of the client (see box on page 17 for treatment options for warts). When there are signs of higher grades of dysplasia, aggressive treatment should be offered. Recurrent local treatment or more extensive surgical treatment should be determined by discussion between clinician and patient.

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Treatment for Warts				
Treatment	What is it?	Where is it done?	Side effects	Effectiveness in HIV
Cryotherapy	tissue destruction by freezing	clinic or doctor's office	bleeding, discomfort	recurrence common
Electro-cautery	tissue destruction by electric current	clinic or doctor's office	bleeding, discomfort	recurrence common
Trichloro-acetic or Bichloroacetic Acid	strong acid solutions	clinic or doctor's office	burning, discomfort	fair/good response with multiple treatments
Podophyllin Resin	liquid chemical dessicator	clinic or doctor's office	burning, systemic toxicity	poor response
Condylox™	liquid chemical dessicator	for use at home	burning	fair/good response with multiple treatments
Laser excision	tissue destruction by laser	surgical setting	pain, scarring, infection	recurrence common
Surgical excision	tissue removal	surgical setting	pain, scarring, infection	recurrence uncommon
Efudex™	tissue destruction by chemicals	office or home	inflammation, erosion	poor/fair response
Aldara™ (imiquimod)	immune response modifier	for use at home	burning, rash, flu-like symptoms	fair/good response
Forvade™ (cidofovir gel)	acyclic nucleotide antiviral agent	currently in trials	local site reactions reported	unknown

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Candidiasis in Immune-Compromised Women

by Jill Cadman

Esophageal candidiasis is the most common AIDS-defining condition and is associated with poorly recognized morbidity.

Candidiasis refers to any infection caused by a group of yeast-like fungi called *Candida*. *Candida albicans* is the most common type and is normally found in the mouth, digestive tract, vagina and skin of a healthy person. The presence of *Candida* does not always lead to a flare-up, but in some people can cause recurrent, difficult-to-treat infections. Candidiasis is a frequent complication for HIV-positive individuals. *Candida* can infect the lining of the mucous membranes in the esophagus, intestines, vagina, throat and lungs. Oral candidiasis (thrush) or recurrent vaginal candidiasis (vaginitis, yeast infection) is an early sign of weakening of the immune system. The prevalence of vaginitis increases as CD4 cell counts decline, especially below 200 (Duerr A et al. *Obstetrics and Gynecology*. August 1997; 90(2) 253-56). The symptoms of oral and vaginal candidiasis include pain, itching, redness and white patches at the sites of infection.

Esophageal candidiasis is the most common AIDS-defining condition and is associated with poorly recognized morbidity. It is more common in women than in men. At the National Conference on Women and HIV held this Spring, Paula Schuman, M.D., of Wayne State University in Detroit, presented data from CPCRA study 010, which tested 200 mg of fluconazole per week as prophylaxis for mucosal candidiasis in 323 HIV-positive women (abstract 103.2). Use of fluconazole cut in half the incidence of oral/throat and vaginal yeast infections (see also *Treatment Issues*, June/July 1996, page 16). The effect of fluconazole on esophageal candidiasis could not be determined because of its low incidence in the study.

After a median follow-up of 29 months, *Candida albicans* did not usually develop resistance to fluconazole. However, women on fluconazole

were more likely to become colonized with less pathogenic non-*albicans* strains of *Candida* that were prone to fluconazole resistance.

Other studies have shown that low CD4 count is a risk factor in the emergence of fluconazole resistance by *C. albicans*. Women with fewer than 50 CD4 cells and a treatment history with azole drugs are more likely to develop resistant strains. A Johns Hopkins University study observed that women with the lowest CD4 counts (a median of 11 in this case) and a history of extensive prior fluconazole use tended to harbor fluconazole-resistant yeast (Maenza JR et al. *Journal of Infectious Diseases*. January 1996; 173(1):219-25). The Johns Hopkins study concluded that for women at risk for fluconazole resistance, topical treatments might be used as a first choice, with fluconazole reserved as a back-up.

A second presentation at the National Conference on Women and HIV, by Wafaa El-Sadr, M.D., of New York's Harlem Hospital, looked at predictors of new and recurrent candidiasis in a cohort of women drawn from the CPCRA 010 study (abstract 103.3). Dr. El-Sadr stated that the main risk factor for recurrence was a prior history of candidiasis at the same site. PCP prophylaxis was associated with a higher incidence of oral and a lower incidence of vaginal candida. Baseline CD4 cell count was not an independent predictor of mucosal candidiasis in this study.

The Grace Study at the Yale School of Nursing was presented as a poster (number 38). The study found that self-reporting on the part of the 184 participants did not adequately identify disease, confirming the importance of comprehensive gynecological exams. Since vaginitis can be misdiagnosed, it is important that health care providers perform the necessary examinations and tests to make an accurate diagnosis of the cause of the symptoms.

Pelvic Inflammatory Disease in HIV Infection

by Risa Denenberg, R.N., F.N.P., M.S.N.

At the National Conference for Women and HIV (May 4-7, Pasadena, CA) there were two presentations on pelvic inflammatory disease (PID) in HIV infection. Ann Duerr (of the CDC) presented a "state-of-the-art" lecture on gynecologic infections at 8:30 on Tuesday morning. The audience, especially women living with HIV, was rapt. Clinicians and patients continue to feel that pelvic infections are the overlooked stepchild of the AIDS epidemic. Unlike other bacterial infections in HIV/AIDS (e.g. chronic sinus infections or recurrent bacterial pneumonias) the literature has barely a handful of articles (Safrin, 1990; Sperling, 1991; Korn, 1993) describing the epidemiology, disease course, prophylaxis and/or response to therapy. PID takes its toll on women's health and quality of life, but does not have infectious disease (ID) specialists or OB/GYN specialists competing to be "recognized experts."

Duerr recently coauthored a study comparing PID in positive and negative women (Barbosa, 1997). In this study, conducted at Kings County Hospital in Brooklyn, HIV testing was conducted on blinded blood samples of 423 women admitted for PID, and outcomes were evaluated by blinded review of medical records. The HIV seroprevalence of the women was 8%, far exceeding the seroprevalence rates (2.3%) observed for obstetrical admissions during this period, at the hospital. The HIV-positive women had higher temperatures at admission and lower white blood counts. They were more likely to continue to have fever two to four days after beginning antibiotic therapy. In addition, HIV-positive women were almost five times more likely to require a change of antibiotics and have longer hospital stays. In this study, positive women did not undergo more surgery, or have a higher incidence of tubo-ovarian abscesses. Positive women did have higher rates of surgery in a PID outcome study conducted in Abidjan, Ivory Coast (Kmenga, 1995). The CDC study concluded that PID has a more complicated course in HIV infection; it recommended further studies with larger cohorts and longer follow-up to assess long-term outcomes. The findings support current CDC recommendations that women with PID be offered HIV counseling and testing, and that known HIV-positive women with PID should be hospitalized for treatment.

In the second presentation on PID at the Conference, Anne Moorman reported results from a study in which positive and negative women with PID were compared for the types of pathogens that were present in the uterus at the time of the PID diagnosis. Transcervical and endometrial biopsies were performed to collect samples for testing. Positive women were significantly more likely than negative women to harbor mycoplasma, streptococci species and cytomegalovirus; but not gonorrhea, chlamydia, gardnerella vaginalis, herpes simplex virus or human papillomavirus. The negative women were more likely to show signs of acute infection, while the positive women were more likely to show signs of chronic infection.

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Still Lost among the Chemokines?

Do all the technical terms in *Treatment Issues* leave you feeling confused and defeated? Do you sometimes think you need a Ph.D. to keep track of AIDS medical news?

Don't despair. *Treatment Issues* has revised and expanded its "AIDS Medical Glossary." The Glossary now contains 36 pages of terms commonly found in these pages. It was mailed to all subscribers in June.

Extra copies are available for \$3.00 from GMHC, Publications Department, 119 West 24th Street, New York, NY 10011. (Please make check out to GMHC.)

Current CDC recommendations state that women with PID should be offered HIV testing and counseling.

Woman-Initiated Methods for HIV Prevention

by Zena Stein, M.A., Columbia University HIV Center

Women rarely learn how to initiate use of condoms, and must generally rely on partner cooperation.

Avoiding sexually transmitted diseases (STDs), including HIV, can be more complicated for women than for men. The circumstances under which women have sexual encounters with partners vary both with their own demographic background (age, culture, religion, socioeconomic status, sexual preference, etc.) and also with the particular partnership. Characteristics such as male or female partner(s); casual or long-term relationships; exchange of sex for money, drugs or shelter; dominant, submissive or egalitarian roles; desire to have children; and use of contraceptive methods all affect decisions about protections against STDs. Condoms provide good protection from HIV and other STDs when used properly and consistently during vaginal and anal intercourse. But women rarely learn how to initiate use of condoms, and must generally rely upon partner cooperation. Abstinence is not always an option, as nonconsensual or unplanned sexual intercourse is a common reality.

The focus in research at present is to develop woman-initiated methods. Educators teach communication and dialogue skills, rather than assuming that argument and conflict with a sexual partner is inevitable. Teaching a universal message ("condoms are the only safe option") is replaced with a hierarchical model of choosing what is best among several options.

Technical products for safer sex are referred to as "barriers." Women need to know the nature of each type of barrier, its relative effectiveness and availability, and how to acquire experience in its use. Mechanical barriers (male and female condom, diaphragm, cervical cap) and chemical barriers (bacteria- and virus-killing microbicides) can be used alone or in combination.

Physical Barriers

Condoms: The *male condom*, usually made of latex, protects the penis completely, if correctly and consistently used. But it is usually (though not always) applied by the man, and he does so after achieving an erection, which is sometimes preceded by the escape of potentially pathogen-bearing semen. Condoms also slip and break. Protection cannot be 100% effective against infections, nor has it proven so against conception. Nevertheless, condoms have been shown in many careful studies to greatly reduce the chances for men and for women of acquiring sexually transmitted diseases, including HIV.

Male condoms are cheap and widely available. Their chief drawback for women is the uncertainty as to whether their partner will agree to use them. A woman may buy a man's condom (although not without possible embarrassment), but she will still have to negotiate with a male partner over its use. And, of course, there's the rub. Commercial sex workers working in licensed brothels in Nevada, for example, extract almost complete "compliance" from their clients. The record is far poorer in almost all other surveyed partnerships in the U.S. and elsewhere.

The *female condom*, although far less familiar and much less tested both against infections and conception, provides a physical barrier to the vulva as well as to the vagina and cervix, and to the penis. It is made of a durable material, polyurethane, that is probably less likely to slip or break than the latex male condom. Because it may be applied well before intercourse, there is no question of infection from pre-erection discharge. The woman's condom definitely assigns the initiative to the woman, and in almost all cases, women report a feeling of empowerment in being permitted this initiative. Nevertheless, in using this device, the man must give at least passive assent. For both women and men, comfort increases with experience.

The woman's condom is more expensive than the man's condom, and is not always available. Recent (still unpublished) reports suggest that it is as effective against unwanted conception as is the male condom; preliminary findings also report favorable results against infections.

Attempts to compare the protection conferred by the male and female condoms have to consider both method efficacy (how well the method protects when used correctly) and overall effectiveness (the reduction in infections that occur when the method is made available to the population). Although almost impossible to test scientifically, it is likely that both condoms would score equally high on method efficacy. Overall effectiveness depends on usage, which depends in turn on concerted efforts to promote a given method. With the woman's condom, studies have shown reasonable uptake on short follow-ups, but there is a dearth of long follow-ups.

A major limitation to wider use of the female condom is its price (\$8.49 for three). A topic under active study is whether the female condom could be safely reused. If procedures to do

so were established and permitted by the FDA, the cost to a woman or public agency could be greatly reduced.

Diaphragm, Cervical Cap: These are the best established devices that provide some protection to the cervix, especially when used with chemical barriers, which are discussed below.

The *diaphragm* has a long history as a contraceptive, with effectiveness for that purpose similar to the male condom. Its great appeal for women is that it can be used clandestinely; that is, a male sexual partner does not have to know it is being used. The diaphragm has to be fitted by a physician or qualified health worker, but a woman can keep using the same one for years, although it is advisable to be refitted after giving birth. There is some ongoing research to make a "one size fits all" diaphragm so as to obviate the fitting visit, but at this time the device remains essentially as it was 70 years ago. With the advent of the contraceptive pill, its use declined markedly.

The *cervical cap* also covers the cervix. It has certain advantages over the diaphragm, for example it can be left in place for longer periods of time and for several sexual encounters. But cervical caps also must be fitted and there are fewer providers who have experience doing so.

The main disadvantage of these devices, and why they must be ranked below the condoms, is that they are very likely less effective against HIV. This is because they cover only the cervix and according to a recently published study there is a potential for HIV infection to take place at any level of the reproductive tract, including the uterus and vagina (Howell AL et al. *Journal of Virology*. May 1997; 71(5):3498-506).

Microbicides

Basic and clinical research into topical microbicides is in progress. The National Institutes of Allergy and Infectious Diseases (NIAID) is funding topical microbicide research globally through its HIV/STD research program. Basic science investigation is underway to improve understanding of the vaginal and lower genital tract ecosystem (see pages 8-10 of this issue) in order to understand how sexual/mucosal infection occurs in women.

Clinical science must evaluate candidate microbicides and their delivery systems; establish safety and effectiveness profiles in both women and men; and develop successful behavioral interventions to ensure the acceptance and use of new products. Ideally, microbicides should be safe, effective, nonirritating to men or women, nonodorous, not too sticky, inexpensive, lethal to HIV and a broad range of STDs, have a

long shelf life, and be safe for use at least twice daily. They should be able to be used without a partner's knowledge if necessary, and they should be formulated with and without contraceptive properties, so that women who wish to conceive can have anti-STD/HIV protection alone. Ethical issues in conducting microbicide trials include consideration of the potential toxicity of the products to the participants' partners and the difficulty of assessing independent efficacy without compromising current recommendations to include condoms in every trial.

The only product currently in use as a microbicide is the spermicide nonoxynol-9 (N-9). N-9 has been used since the mid-1980s as a spermicide alone and in combination with condoms, diaphragms and cervical caps. It comes in various delivery systems; foam, jelly, cream, film and gel. In the laboratory, N-9 has been shown to have microbicidal properties against HIV, gonorrhea and chlamydia. In clinical research, N-9 reduces transmission of gonorrhea and chlamydia by about 50%. Reducing these STDs may itself reduce risk for HIV transmission because infections in the vagina and cervix increase the number of circulating immune system cells, which are targets for HIV (for example, CD4 cells). A NIAID-sponsored phase III, randomized, placebo-controlled study of a film containing 75 mg of N-9, was recently conducted with women sex workers in Cameroon. Data from this study showed that using the film containing N-9 (vs. film placebo) had no independent effect on acquisition of HIV, gonorrhea or chlamydia when provided as part of an overall HIV/STD prevention campaign (which included providing condoms).

For nonapproved products, testing begins with in-vitro efficacy. Next is animal toxicity testing in which mucosal irritation and systemic absorption of the product is evaluated. Animal models have been developed at Pennsylvania State University in which human vaginal tissue has been grafted onto mice for toxicity testing. Formulation development of the product is also evaluated by animal efficacy and toxicity studies. Phase I clinical trials involve testing the product in small numbers of healthy women with "normal vaginas." These are women who are not having sexual contact and who will use the product in increasing doses and frequencies to observe for local and systemic responses.

New products are categorized as: (1) broad spectrum (i.e. detergents, antiseptics, spermicides, acid-buffers); (2) inhibitors of viral entry; (3) inhibitors of HIV replication (these are local

There is potential for HIV infection to take place at any level of the reproductive tract.

Microbicides should be usable without a partner's knowledge, if necessary, and they should be formulated with and without contraceptive properties.

formulations of anti-HIV drugs); and (4) combination products utilizing more than one mechanism of action. Except for the broad spectrum category (which includes N-9, octoxynol-9, benzalkonium chloride and chlorhexidine), none of the other products have yet been tested in phase II or phase III human studies. The following new products are under study at present:

Advantage-24 is currently the subject of NIAID-sponsored field testing in Kenya. The product is a new delivery system employing a gel that releases a low dose of N-9 over a 24-hour period, and is believed to "coat" the cervix. Advantage-24 is also in phase II rectal-use studies at the University of Washington, Seattle.

The **Protectate sponge** is a product containing both N-9 and benzalkonium chloride. It is undergoing testing in Canada.

Buffer gels are in NIAID-sponsored trials at Memorial Hospital in Providence, Rhode Island. These gels are microbicidal products designed to lower the vaginal pH, making the vagina more acidic. Since semen is quite alkaline, it raises the vaginal pH. The acid-buffer gel is being evaluated to see if it will keep the vagina acidic enough to kill pathogenic microbes, including HIV. Further testing is expected in sites in Asia and Africa.

Protegrin studies are being conducted at the University of California Los Angeles with NIAID funding. Protegrins are antibiotic protein fragments produced naturally by animals. Lab

studies are ongoing to determine the activity of various formulations of protegrins against HIV and other pathogens.

Lactobacillus studies (again, NIAID-sponsored) are being conducted at the University of Pittsburgh under the direction of Sharon Hillier. Dr. Hillier and colleagues have determined that women who have naturally occurring lactobacillus bacteria in their vaginas have only half the risk of acquiring HIV as women without the protective bacteria. Lactobacilli produce hydrogen peroxide and other microbe-killing compounds. They also bring the pH of vaginal mucosa down to about 4.5. Phase I trials are testing whether use of a lactobacillus vaginal suppository can reduce transmission of gonorrhea and bacterial vaginosis. It is expected that phase II studies shortly will start enrolling female adolescents at high risk for HIV and STDs.

Pro-2000 is a product that blocks binding of HIV to cells' CD4 receptor, thus preventing the infection of new cells. Its corporate sponsor, Procept, is investigating its use as a topical microbicide in Belgium.

There is no simple path to achieving more effective methods for woman-initiated STD/HIV risk reduction. To make informed choices, women, educators and clinicians need to know what acceptable products are available at any given time, including the ones that are not 100% effective. Women who desire both pregnancy and protection from HIV/STDs may not have a safe and effective microbicide available in the foreseeable future.

Childhood Sexual Abuse as an HIV Risk Factor in Women

by Risa Denenberg, R.N., F.N.P., M.S.N.

A history of sexual abuse, physical abuse or domestic abuse was highly correlated with engaging in risk behavior for HIV.

In doing HIV/AIDS work, it is critical to operate with the awareness that a large proportion of adolescents and adults were sexually abused as children and that abuse has had a profound and devastating effect on their consequent psychosocial development. Childhood sexual abuse has been strongly associated with numerous disturbing behavioral and psychological outcomes in adolescent and adult women. Among them are further domestic violence, adolescent pregnancy, child abuse, drug and alcohol abuse, bulimia, sexually transmitted infections, depression, prostitution, self-mutilation, running away from home and dropping out of school (Rosenfeld, 1993; Boyer, 1992). The emotional trauma of

childhood sexual abuse is compounded by the fact that the perpetrator of the violence is usually a close, male family member. In most cases, sexual abuse occurs in a family atmosphere of silence, secrecy, protection of the perpetrator and disbelief or blaming of the child victim.

The link between child sexual abuse and risk for HIV infection has been proposed by several authors (Caseese, 1993; Paone, 1993; Rosenfeld, 1993; Zierler, 1991), and recent research strongly confirms that association. Large, prospective, multisite studies of cohorts of women with and at high behavioral risk for HIV have uncovered striking data by conducting structured interviews with participants. Of 771 women enrolled in HIV Epidemiology Research Study (HERS)

sites in Baltimore, Detroit, and the Bronx, 43% had been sexually abused as children and 45% had been sexually abused as adults (Vlahov, 1996). In this cohort, 28.3% of the women reported having witnessed a murder.

In the Women's Interagency HIV Study (WIHS), data from 1560 women enrolled in New York City, Chicago, Washington, DC, and Los Angeles revealed that 40% reported a history of childhood sexual abuse (Cook, 1997). For these women, a history of sexual abuse, physical abuse or domestic abuse was highly correlated with engaging in risk behavior for HIV. In particular, childhood sexual abuse was significantly associated with: use of IV drugs; exchange of sex for drugs, money or shelter; higher number of sexual partners; and having had a sexual relationship with a person at high risk for HIV. Additionally, childhood sexual abuse was significantly related to adult domestic violence as well as adult sexual abuse.

HIV and Increased Domestic Violence

A review of the first 138 deaths at Chicago's Cook County Hospital program for HIV-positive women and children provided further evidence of the extent to which HIV and violence are interrelated. The review discovered that only 80% of the deaths were due to AIDS. Substance abuse, cardiac disease and other chronic illnesses accounted for most of the remaining 20%. Significantly, 3% of the deaths in this group were due to domestic homicide (Cohen, 1996). Childhood sexual abuse may be emerging as a primary risk factor for HIV infection, but violence is a major risk factor for mortality in HIV-positive women.

For HIV-positive women, there is increased risk of domestic violence related to HIV status. The decision to test for HIV, disclosure of HIV status to family and partner, partner notification and mandatory newborn HIV screening (as in New York State) are all situations that may increase the risk for violence. There is evidence that women have been beaten, abandoned, shot, and even murdered by domestic partners after revealing their HIV-positive status (North, 1993; Lester, 1995). It has been shown that when physical abuse has occurred in the past, it is even more likely to occur during a pregnancy (Amaro, 1990). Thus, HIV testing during pregnancy, and newborn screening for HIV may set women up for further violence.

Abuse Survivors and Their Care Providers

Childhood sexual abuse may also set the stage for unsatisfactory relationships with health care providers. In general, clinicians fail to screen for a history of childhood sexual

Commentary

Postexposure Antiretroviral Treatment for Rape Survivors?

by Risa Denenberg RN, FNP, MSN

The probability of HIV infection from a single needlestick exposure is considered to be 0.32%. A single sexual exposure to HIV through a mucosal surface (vagina or rectum) may pose a similar probability for HIV infection. In *The New England Journal of Medicine* (April 10, 1997), a "Sounding Board" editorial examined the question of offering postexposure treatment to people exposed to HIV via sexual contact or injection drug use. A concomitant issue is the question of offering postexposure prophylaxis to victims of rape and sexual assault. Several probable cases of HIV transmission resulting from rape have been reported, and the *NEJM* editorial recommended prophylaxis for rape victims.

The CDC currently recommends postexposure treatment of health care providers who are exposed to HIV infected blood or other fluids by needlestick injury, but recommendations regarding victims of sexual assault are under investigation. The New York State Department of Health is discussing recommending antiretroviral prophylaxis following sexual assault after a risk-benefit discussion between the rape crisis counselor or health care worker and the rape survivor. Important questions for clarification regarding such recommendations include: timing of initiation of treatment; which drugs to recommend for treatment; cost and drug reimbursement; criteria to define "significant risk" and recommendations for follow-up HIV testing and medical care.

A recently published case-control study found that treatment with AZT for post-occupational exposure decreased the risk of acquiring HIV by 79%. Current standard of care treatment for occupational exposure is AZT (200 mg three times a day), 3TC (150 mg twice a day), and indinavir (800 mg three times a day) for four weeks.

Interventions for survivors of sexual assault presently include some or all of the following: crisis intervention; referral for follow-up counseling; physical exam for evidence; testing and/or prophylaxis for syphilis, gonorrhea, chlamydia and hepatitis; pregnancy testing and emergency contraception; and treatment for any physical injuries. HIV testing as a part of these interventions is uncommon, yet rape survivors are increasingly concerned about the possibility of HIV transmission as a result of the assault, and some are requesting HIV prophylaxis. The rape survivor should be counseled regarding risk of HIV transmission via the assault. Pre-test counseling and HIV testing should take place within two weeks of the assault and again three months later. If prophylaxis is requested, it should begin as soon as possible, certainly within 24 hours of the attack.

The standard three-drug postexposure prophylaxis regimen is onerous to follow. It involves 17 pills taken in the course of the day and has a long list of potential side effects. This regimen also costs about \$900 to complete. Clearly there is a need for emergency departments to receive guidance and training in order to implement post-rape HIV counseling and prophylaxis. Further, issues related to access and payment mechanisms will need to be addressed in order that all women have the same ability to exercise the postexposure prophylaxis option after a rape, should they choose to do so.

Women who have histories of childhood sexual abuse often have numerous physical complaints for which physicians cannot find underlying medical causes.

abuse or current risk for domestic abuse. Symptoms of domestic abuse may be easily misread. Often an abused woman will miss appointments and be considered noncompliant. Or she may report injuries, falls, forgetfulness and clumsiness. Women who have histories of childhood sexual abuse often have numerous physical complaints, including: digestive upsets, headaches, joint and muscle pains and chest pains (AMA, 1992). When clinicians are unable to find underlying medical causes for these symptoms, they become frustrated and often label the patient a "malingerer."

Sexual trauma can also result in post-traumatic stress syndrome with symptoms such as anxiety, phobias, hypervigilance and isolation. Common coping behaviors in sexual abuse survivors are denial, dissociation and repetition compulsion (Caseese, 1993). Denial and repetition compulsion (repeating behaviors that lead to trauma) are major mechanisms operating when engaging in risk behaviors, or staying in an abusive situation. Dissociation (pushing painful experiences and emotions out of conscious recognition) often occurs when survivors are asked about the trauma. They may respond blankly or without any emotional affect. Care providers often interpret dissociative reactions as the patient being "not too bright," "spaced out" or "on drugs."

The available data on the incidence of sexual trauma and domestic abuse in the U.S. is staggering. It is estimated that more than 30% of all females and nearly 15% of all males in the U.S. have been victims of childhood sexual abuse. Seventy-five percent of sex workers (female and male) have experienced sexual abuse. One in four women have been raped, and one in five women have experienced domestic abuse. During pregnancy, it is estimated that one in six women is sexually or physically assaulted by her partner.

Investigation and data regarding the prevalence, consequences and relationship to risk for HIV of the sexual abuse of boys are nearly absent in the literature. There are currently no clinical recommendations regarding incorporating what is known about childhood sexual trauma into HIV prevention efforts or into principles for forming therapeutic alliances with HIV-positive clients who are trauma survivors.

In most cases in which a history of trauma is uncovered, the individual should be referred to a competent therapist, with the message that recovery, healing and relief of symptoms is possible. A woman who is currently in an abusive

situation needs a counselor who is trained in crisis intervention and domestic abuse. In addition, the following guidelines may be useful in approaching and working with individuals with a history of sexual or other trauma (adapted from Denenberg, 1993):

- Provide assurance that any abuse that has occurred was not the survivor's fault.
- Validate the experience of sexual abuse ("I believe you") and reassure the survivor that she is not alone ("This has happened to others").
- Offer the survivor support and the ability to be in control of her body during any medical examinations, especially during genital exams, rectal exams and other invasive procedures.
- Assess if the survivor is in a safe living situation at the present time.
- Assess if there are any children living with the survivor who are currently at risk for sexual abuse.
- Incorporate knowledge of the survivor's history into current and future interactions, including any teaching about risk reduction.
- Make appropriate referrals for counseling, crisis intervention, safe housing and other services.

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HIV Risks in Women Who Have Sex with Women

by Risa Denenberg, R.N., F.N.P., M.S.N.

In 1995, the Centers for Disease Control (CDC) called a meeting of lesbian HIV experts to request input on policy, prevention and outreach to women who have sex with women (WSW). An article written by CDC staff members (Meaghan Kennedy, Margaret Scarlett, Ann Duerr and Susan Chu) in the May/August 1995 issue of the *Journal of the American Medical Women's Association* concluded that data on HIV risk faced by WSW are scarce. The authors advised that while the biologic risk of female-to-female transmission is unknown, such transmission is biologically possible, but likely to be uncommon. The article focused attention on other risk behaviors of WSW, including unprotected sex with men, injection drug use and alternative insemination. Surveys continue to verify that some groups of WSW engage in multiple high-risk behaviors. Those that do have higher than expected seroprevalence of HIV and experience difficulties when trying to communicate with health care providers.

This group of CDC researchers has apparently continued to be concerned about issues related to WSW. The CDC recently (April, 1997) published a two-page fact sheet, entitled "HIV/AIDS And Women who Have Sex with Women (WSW) in the United States," that includes prevention recommendations for sexual contact between women. The CDC National AIDS Clearinghouse provides resources and literature on the subject of WSW.

At the National Conference on Women and HIV in May 1997, Kennedy reported on a recent survey of 700 HIV-positive women. The survey found that 22% reported a history of female sex-

ual contact and 5% reported such contact within the last eight months. By self-report, none of these latter women had receptive oral sexual contact while menstruating, 22% said they "always" use a barrier, 15% claimed to "sometimes" use a barrier, and 63% reported "never" using a barrier. Kennedy concluded that decision-making about use of barriers is strongly related to varied perceptions of the barriers' ability to decrease risk of HIV transmission.

Susan Chu presented behavioral and prevention aspects for WSW in a "state-of-the-art" lecture. The CDC AIDS Surveillance Report (April 1997), stated that the CDC prioritizes for investigation AIDS cases whose only reported risk of transmission is WSW. As of December 1996, the CDC had not identified any AIDS cases with the transmission category of WSW, but said that surveillance programs are instructed to ask about WSW behavior, and that female-to-female transmission of HIV could be masked by other risk behaviors. The report further stated that "in some convenience samples of WSW, the prevalence of multiple high-risk behaviors is very high," including anal sex, sex with high-risk male partners, injection drug use, needle use for piercing and tattooing, and use of unscreened semen from sources other than licensed sperm banks."

This information may not be new or surprising at this point, but there is now a paradigm for tracking risk behaviors and HIV seroprevalence in WSW. The job is to get that tracking implemented at the state and local levels, where WSW are often ignored.

Female-to-female transmission of HIV could be masked by other risk factors.

Rapid Advances in Preventing Vertical Transmission

by Jill Cadman

The decision to have a child can be a complicated one under any circumstances, but for an HIV-positive woman it may well be the most difficult decision she will ever face. Being HIV-positive does not automatically supplant the maternal instinct and the desire to have children. As new AIDS treatments are proving more suc-

cessful and women are beginning to experience reductions in mortality and are living longer, many are facing the dilemma of whether or not to have a child. Treatments are as numerous for pregnant women as for the general population, but choices are more complex. The Public Health Service has recently published recommendations

"Advances in the area of perinatal transmission give women the reproductive option if they wish to have a family."

for pregnant women and antiviral use (see pages 31-32 of this issue), but it is still not clear as to what is best for mother and fetus. There is still controversy over the use of AZT or other antivirals during pregnancy despite guidelines and recommendations from experts in the field. Access to emerging information is important and although more research is needed, some of the new data have proved encouraging.

Yvonne Bryson, M.D., of UCLA, stated at the May 1997 Pediatric HIV Symposium, a satellite meeting of the National Conference on Women and HIV, "I stand here today more optimistic than I've felt since I saw my first AIDS patient in 1981. Advances in the area of perinatal transmission give women the reproductive option if they wish to have a family." Progress in treatment and prevention can reduce the risk of vertical (mother-to-infant) transmission. AZT, which is the least effective of drugs, can decrease the risk by two-thirds, as demonstrated by ACTG 076. Dr. Bryson stated that there was potential for the rate of transmission to be reduced to below 2% with the use of improved strategies.

Some Factors That May Influence Transmission

The rate of vertical transmission has been shown by several investigators to be related to the status of the maternal immune system. According to an article Dr. Bryson published in the journal *AIDS*, "Women with advanced clinical disease and primary infection during pregnancy have a high risk of transmission" (*AIDS* 1996 (suppl 3):S33-42). Other predictive factors include lower CD4 counts, the mother's ability to produce neutralizing antibody, shedding of cervical virus and presence of p24 antigen.

Viral load is associated with transmission but it is not the only factor. Dr. Bryson stated that women she studied who did not transmit had a wide variation of viral load. There was also an overlap of viral load counts between some of the transmitters and the nontransmitters. Women with lower viral load had a lower risk of vertical transmission, though. There are studies that observed transmission at lower viral loads, but Dr. Bryson felt that many of those instances of transmission occurred at delivery. Viral load may be more useful in determining the mother's own treatment than in predicting if she will transmit the virus to her baby. The better the immune status of the woman, the better the chance that she will not transmit. For all of these reasons lowering maternal viral load is desirable.

Certain obstetrical factors may increase the risk of transmission by causing trauma to the newborn baby. These include some tests, instruments and procedures used during pregnancy. If possible, HIV-positive pregnant woman should avoid amniocentesis, chorionic villus sampling (CVs), fetal scalp sampling, cordocentesis, internal fetal and labor monitoring (external fetal monitoring is safe) and percutaneous umbilical blood sampling (PUBS). Procedures performed during delivery, such as episiotomy, urinary catheterization, shaving, forceps and vacuum extractors, should be utilized only if medically necessary for the safety of the mother and fetus.

It has been posited that Cesarean sections could have a protective effect. Numerous studies have examined this question and have come up with conflicting findings. A meta-analysis pooled the results of eleven studies and found that there was a higher risk of transmission for infants delivered vaginally versus infants delivered by C-section (Dunn, DT et al. *Journal of Acquired Immune Deficiency Syndrome*. October 1994; 7(10):1064-6). But it is difficult to control for covariants such as obstetrical emergencies, illness, condition of mother and type and amount of prenatal care. One study that was able to control for time of ruptured membranes (breaking of the "bag of waters") found no difference in transmission rate between C-sections and vaginal deliveries (Landesman S et al. *The New England Journal of Medicine*. June 20, 1996; 334(25):1617-23).

The increased risk of surgery for an immune-compromised woman must be balanced against the statistical difference in risk of transmission. A study in Italy found that HIV-positive mothers are at an increased risk of postoperative complications when delivered by C-section (Semprini A.E. et al. *AIDS*. August 1995, 8(9):913-7). Many obstetricians prefer antiviral drug treatment to C-sections.

Artificial rupturing of membranes should be avoided where possible. According to the Women and Infants Transmission Study (WITS), the risk of vertical transmission nearly doubles when the membranes rupture more than four hours before delivery (Landesman *op. cit.*). Women should be made aware of the symptoms of ruptured membranes so they can report them immediately to their health care provider. (However, having membranes ruptured for longer than four hours is not necessarily an indication for Cesarean section. Gina Brown, M.D., of Columbia Presbyterian, states that augmentation of labor may be helpful in such instances.)

Premature delivery (prior to 37 weeks) is also associated with a higher risk of vertical transmission (Greenberg BL. *XI International Conference on AIDS*. abstract Tu.C.2592). This finding was corroborated by a study conducted in France that found delivery prior to 34 weeks was independently associated with transmission and concluded that severe preterm labor should be prevented (L. Mandelbrot, *XI International Conference on AIDS*. abstract TuC.2603).

Another important consideration is whether any drug taken by the mother can cross the placenta (see page 32, table 2 of this issue) at sufficient levels to protect the baby. Marianne Garland, M.D., of Columbia University, presented her baboon studies on antiviral use and the fetus at the National Conference on Women and HIV held this May (abstract 204.2.). Neonatal drug levels will depend upon compartmentalization and metabolism of the drug in the fetus and placenta as well as elimination of the drug by the fetus. Dr. Garland stressed the importance of proper dosing of the mother so that the fetus would receive adequate levels of the drug.

It is thought that HIV can cross the placenta or a break in the placenta. In some cases HIV has infected the placenta but not the infant, or vice versa. For infection to take place, the viral genome needs to be replicated and inserted into the host genome of the fetus. This is where AZT and the reverse transcriptase agents are effective. They block the genome of the viral particle from being incorporated into the fetal cells. AZT has no effect on the release of the viral particles from the mother.

Time of Transmission and Rationale for ACTG 076

Although the exact mechanism of transmission is still unclear, it is known that it can be in utero (during pregnancy), intrapartum (at time of delivery) or postpartum (after delivery, by breast-feeding). The time when HIV is transmitted has a direct impact upon the types of interventions used.

HIV can infect human fetuses as early as eight weeks after conception. Interventions to prevent such transmissions are difficult. There appears to be an increased rate of spontaneous abortions when transmission occurs in the first trimester. Transmission occurring later in pregnancy is more responsive to interventions. The mother can be treated with antivirals that pass through the placenta to the fetus. Lynne Mofenson, M.D., of the NIH stated at the Women's Conference that the majority of transmission appears to occur during labor and delivery. Interventions that provide treatment directly to

the baby are necessary for preventing transmission at that time.

The rationale for the protocol of ACTG 076 was to interrupt transmission at each of these stages. AZT was taken orally five times a day between 14 and 34 weeks, given intravenously during labor, and administered for six weeks to the newborn. The oral AZT was administered during pregnancy to target transmission that occurred in utero. Treatment began after the first trimester (the period during gestation of maximum organ development) so as to avoid a higher risk of birth defects. The infusion during delivery was able to cross the placenta and rapidly produce AZT levels in the baby that were viricidal. This was important because of the intense exposure to infected blood and cervico-vaginal secretions when the baby is passing through the birth canal. Oral AZT syrup was then administered to the newborn because of the possibility of microtransfusions of infected maternal blood cells into the fetal bloodstream during labor and delivery. In this way the AZT possibly switches from pre-exposure prophylaxis to post-exposure prophylaxis for the baby.

The results of ACTG 076 demonstrated a 67% reduction in the risk of vertical transmission in the AZT-treated group at all levels of maternal viral load. Yet it is still unclear exactly how AZT reduced transmission (see *Treatment Issues*, April 1996, pages 5-6), or indeed which components of the regimen were critical. Global studies of short-course AZT treatment are underway to answer the latter question.

HIV Immunoglobulin

Enrollment in another study on vertical transmission was stopped in March of this year. ACTG 185 looked at therapy with HIVIG (an immunoglobulin containing high levels of antibodies to HIV) versus IVIG (a standard immunoglobulin that does not contain HIV antibodies) in addition to the 076 regimen. All participants had more advanced disease than the 076 cohort and required antiviral therapy for their own health.

Researchers expected the transmission rate to be higher in such a group. Median CD4 count was 306 and 21% of the cohort had CD4 cell counts below 200. Twenty-three percent had received prior antiviral therapy, some for a prolonged period of time. Twenty-seven percent had a viral load above 50,000. Enrollment was halted when the transmission rate was found to be the same in both treatment arms, 4.8%, which made comparison impossible. This unexpectedly low rate was less than the 8% rate found in 076.

The majority of transmissions appear to occur during labor and delivery.

Care of the Pregnant HIV-Positive Woman

A woman cannot receive appropriate care if she does not know her HIV status. It is important for all pregnant women to be offered counseling and voluntary testing. HIV-infected women require a knowledgeable medical team, including an HIV specialist and an obstetrician or midwife experienced with high-risk and/or HIV-positive pregnant women. Regular prenatal care is important, as is nutritional counseling. The use of drugs and alcohol during any pregnancy should be avoided, but this is especially true for HIV-positive women. In addition, smoking may increase the risk of vertical transmission (B. Turner et al. *J AIDS*. April 4, 1997; 14(4):327-37).

Lab tests should assess the possibility of infection, anemia (especially for women who are taking AZT) and thrombocytopenia (low platelets). Screening tests for sexually transmitted diseases (STDs) should be done at the beginning of the pregnancy and if symptoms develop. Women who test positive for STDs should be monitored to insure the treatment has been successful. Urinary tract infections can be troublesome in pregnancy and may be a possible cause of premature births. Urine cultures and urinalysis should be performed whenever symptoms occur.

If a woman requires PCP prophylaxis for her own health, it is advisable for her to continue treatment if she becomes pregnant. The use of TMP/SMX (Bactrim or Septra) may cause an elevation in the serum bilirubin level and jaundice in the newborn. This can lead to a more serious condition called kernicterus. Despite this risk, large studies have not demonstrated any adverse effects on the newborns (H. Minkoff. *JAMA*. November 20, 1987; 258(19):2714-17). As there have been various congenital malformations reported with the use of TMP/SMX in some animal models (R. Sperling et al. "Treatment Options for HIV-infected Pregnant Women," OB/GYN Working Group of the ACTG and NIAID, 1992), some clinicians prescribe dapsone in the first trimester. However, dapsone is less effective than TMP/SMX for PCP prophylaxis. In either case, the mother's need for PCP prophylaxis outweighs potential risks to the fetus.

Treatment and screening for opportunistic infections (OIs) is recommended. There are some OIs, such as toxoplasmosis, herpes and CMV, that can be transmitted to the fetus, causing serious repercussions. Maternal weight should be closely observed as losses of greater than 10% may indicate HIV wasting. Surveillance of the fetus is also important and can be done safely through external fetal monitoring (fetal nonstress tests) and serial ultrasound tests (S. MacGregor. *Clinics in Perinatology*. March 1991; 18(1):33-51).

-JC

Participants in ACTG 185 received AZT earlier in pregnancy by about two months, at 19.3 weeks as opposed to 11 weeks in ACTG 076.

Transmission was observed across all viral load levels including undetectable. Therefore, it did not appear that viral load was helpful in determining transmission in treated women. According to Dr. Mofenson, the 4.8% transmission rate found in this study is what is being reported now in the U.S. with the clinical implementation of the 076 regimen.

Concerns about AZT

AZT is a category C drug (see page 32, table 1 for explanation of FDA Pregnancy Categories). Concerns regarding its use during pregnancy include the potential risk for development of cancer and AZT resistance.

AZT is positive for carcinogenic risk when screened in the test tube. Benign vaginal tumors develop when high doses are given to mice. However, there is a difference in the manner in which AZT is broken down in humans and mice. In humans, AZT is metabolized in the liver and is excreted in an inactive state in the urine. In mice, AZT is not metabolized and is excreted in high concentrations in the urine, which refluxes into the vagina. Dr. Mofenson stated that the development of tumors in mice might be due to a topical effect of AZT on the vaginal mucosa.

Additionally, two studies have looked at the risk of transplacental carcinogenicity. A National Cancer Institute (NCI) study showed an increased rate of tumors in offspring of mice given very large quantities of AZT, just below the maximum tolerable dose. Although the mouse doses were 25 to 50 times greater than daily doses given to humans, the cumulative dose received was similar to the cumulative dose received by a pregnant woman after six months of AZT use. A Glaxo-Wellcome study demonstrated no increase in tumors in offspring of mice receiving doses whose range was more in line with the human dose, one-twelfth to one-fiftieth of the NCI dose.

Attempts to extrapolate results of mice studies to humans have been difficult. An NIH panel convened to evaluate the studies voted unanimously that the benefits of AZT use outweigh the risks. The panel also concluded that information regarding the carcinogenic risk should be discussed with all HIV-positive pregnant women during treatment counseling (see *Treatment Issues*, January 1997, pages 4-5).

Dr. Mofenson stated that examination of children from ACTG 076, ACTG 219 (long-term follow-up trial for children with previous enrollment in any ACTG trial) and ACTG 185 has not indicated any evidence of tumors in children followed to three years of age.

Celine Hanson, M.D., of Baylor College of Medicine in Texas, presented information at the National Conference on Women and HIV regarding the lack of tumors in 734 infants from ACTG 076, ACTG 219 and WITS (Abstract 304.3). Dr. Hanson analyzed infants with fetal or neonatal exposure to AZT. Median follow up was 37.8 months in infants from ACTG 076/219 and 11.4 months in infants from WITS. No tumors of any nature were reported in any of the

children. Limitations of this study included the fact that surveillance of tumors was passive (no diagnostic tests were performed unless there as a clinical indication that a tumor was present). Since the follow-up period was relatively short, six years at the longest, it is possible that tumors could appear in AZT-exposed children during adolescence or adulthood (regardless of whether child is HIV-positive or not). No increase in congenital abnormalities compared to the general population was seen in 076 or in the Antiretroviral Pregnancy Registry (see page 31 of this issue).

Neurodevelopment tests have determined no difference in infants exposed to AZT versus placebo. CD4 counts at 6, 12 and 18 months and growth, including weight, height and head circumference, have also shown no difference between the groups.

Many activists have expressed concern over the possible development of drug resistance in women who receive AZT monotherapy during pregnancy. Resistance can develop in some individuals in as little as six months on AZT monotherapy. According to the new Public Health Service treatment guidelines for HIV-infected (nonpregnant) adults, asymptomatic individuals with CD4 cell counts above 500 and viral load (by PCR) below 20,000 would have the option of delaying treatment. However, pregnant women in this category will be offered AZT monotherapy to begin as early as 14 weeks and to continue for an additional five to six months until the birth of the child. Development of AZT resistance during a pregnancy would have permanent ramifications on future treatment choices for the mother, and AZT might fail to protect the fetus from emerging AZT-resistant maternal virus.

In a study presented in January 1997 by Dr. Scott Eastman of Chiron Corporation at the Fourth Conference on Retroviruses and Opportunistic Infections, participants from ACTG 076 were evaluated to determine the prevalence of genotypic AZT resistance at entry and at delivery (abstract 516). AZT resistance was not found to be overwhelming. One of seven evaluable AZT-treated transmitters had evidence of AZT resistance. This woman had AZT-resistant virus at entry despite being AZT-naïve. One participant developed resistant virus during the pregnancy but did not transmit HIV to her baby. AZT resistance did not account for the majority of infants that became infected in 076. Data from ACTG 185 indicated that duration of AZT use in women with more advanced disease, many of whom received prolonged AZT prior to pregnancy, was not associated with increased risk of transmission.

Other Combinations

Clearly AZT monotherapy is substandard therapy for HIV infection; but, the Public Health Service guidelines still promote its use in pregnancy. The goals of treatment are twofold: the first is the use of drugs for improvement or maintenance of maternal health, and the second is the interruption of vertical transmission. Ideally these two intentions do not conflict. While AZT monotherapy is the only proven means of reducing the risk of transmission, combination therapy may be optimal for the mother's own treatment. Pregnancy should not prevent the administration of combination therapy for maternal health considerations. However, women need to know how other drugs will affect the fetus at each stage of development, whether the drug will cross the placenta and if the dose should change.

A pregnant woman on combination therapy will have to decide whether to continue using her medication during the first trimester. Stopping treatment is a hard choice and may depend on the woman's disease stage. If she is on highly active antiviral therapy (HAART) because of a high viral load, then terminating her medication risks a rapid return of her infection to its pre-treatment state, along with the further development of drug-resistant HIV. Each woman must weigh her own health concerns, the possible effects of drugs on the fetus and the risk of vertical transmission infection. Since there is not much data on the use of antivirals in pregnancy, this is a difficult decision.

The only drugs that have had pharmacokinetic studies in pregnancy are AZT, 3TC and nevirapine. Each of these is well tolerated by pregnant women, crosses the placenta and achieves neonatal blood concentrations equivalent to those in the mother. Most of the other approved antivirals are either being studied now or have studies planned.

Of the non-nucleoside reverse transcriptase inhibitors (NNRTIs), only nevirapine has been investigated during pregnancy and labor. It appears to be safe although drug levels in newborns are prolonged for a week because of immature liver function (a possibly helpful effect). The mutagenic and carcinogenic potential appears less than in nucleoside analogs, according to Dr. Mofenson, although the studies are not completed. Both nevirapine and delavirdine pose potential risk to the fetus. Delavirdine has been shown to be teratogenic (i.e., interfere with proper fetal development) when administered to rodents in high doses.

A pregnant woman on combination therapy will have to decide whether to continue using her medication during the first trimester.

NNRTIs' ability to prevent vertical transmission is as yet undetermined.

There is very little known regarding the protease inhibitors. Studies in test tubes looking for carcinogenesis and mutagenesis appear to be negative, although none of the drugs have been studied in animals or humans. Their ability to reduce vertical transmission is unknown.

Ongoing Trials of Vertical Transmission Prophylaxis in the U.S. and Developing Countries

Protocol/ Sponsor	Country	Target Enrollment	Study Design
ACTG 316	USA/Europe	800/400	(nevirapine or placebo) + standard of care
ACTG 353	USA	10	nelfinavir/3TC/ AZT, no placebo
ACTG 354	USA	10	ritonavir/3TC/ AZT, no placebo
ACTG 357	USA	10	1592/3TC/AZT, no placebo
ACTG 358	USA	10	indinavir/3TC/ AZT, no placebo
ACTG 332	USA	17	d4T + 3TC, no placebo
ACTG 324	USA	18	Abbreviated 076 regimen: AZT, no placebo
NIH	Thailand	1200	Abbreviated 076 regimen: AZT 4 arms; no placebo
CDC	Thailand	372	Abbreviated 076 regimen: AZT or placebo
WHO	Africa	1900	AZT/3TC or placebo
CDC	Ivory Coast	1534	Abbreviated 076 regimen: AZT or placebo
NIH	Uganda	1200	Abbreviated 076 regimen: AZT, nevirapine or placebo
NIH	Ethiopia	940	Abbreviated 076 regimen: AZT or placebo

Current Clinical Trials: Issues and Overview

There are numerous clinical trials underway in the U.S. and around the world. Dr. Mofenson presented an overview of the global trials at the Women's Conference (abstract 204.1). The current studies focus on interrupting transmission through lowering maternal viral load, enhancing maternal/fetal/infant immune response, fetal/infant prophylaxis, providing drugs to the fetus and reducing intrapartum and postpartum exposure to the infant.

Dr. Mofenson stated that an international panel was convened in June of 1994 by the World Health Organization (WHO) in Geneva shortly after ACTG 076 ended. The panel recommended that all industrialized countries implement the 076 protocol where feasible. The panel also advised that placebo-controlled trials were necessary to rapidly provide alternative methods adoptable in countries where the current protocol was unworkable due to the cost and avail-

ability of AZT. The WHO panel explained this conclusion by stating, "the choice of a placebo for the control group would be appropriate as there is currently no effective alternative for HIV-infected pregnant women (in the developing world)." Numerous international trials are underway using a shorter course of AZT later in pregnancy, replacing intravenous AZT with oral during labor and eliminating or reducing the AZT given to the infant in an attempt to identify simpler, less expensive protocols.

Activists have raised concerns about the ethics of these trials. Marion Banzhaf, former Executive Director of the New Jersey Women and AIDS Network (NJWAN), stated that these trials would not be permitted in this country and should not be funded overseas by the U.S. government through the National Institutes of Health (NIH) and Centers for Disease Control (CDC). Ms. Banzhaf dismissed the argument that pregnant women in the developing world would not be receiving any treatment. "It's exploiting people's desire for access to the drug to coercively entice them into joining a trial and then randomizing them into a placebo group. It wouldn't happen here."

Public Citizen, a Washington-based watchdog group, spearheaded a campaign to have the placebo-controlled trials redesigned as equivalency trials and require all participants be offered some regimen of AZT. Health and Human Services Secretary Donna Shalala and the CDC have both upheld the WHO panel recommendations. Ms. Shalala stated in a letter of response that it was not appropriate to use the original 076 protocol as a comparison arm since it is not the standard of care in developing countries and could not act as a control arm. Further, all countries involved had approved the trials, which will proceed as planned in order to find a feasible intervention as soon as possible.

In this country, combination therapies are being studied to determine safety and efficacy during pregnancy. There are several small open-label Phase I studies with protease inhibitors opening (ACTG trials 353, 354 and 358), plus one in development (ACTG 357) which uses abacavir, Glaxo's experimental nucleoside also known as 1592U89. All four trials involve combinations with AZT and 3TC. There is also a Phase I d4T/3TC study that just opened for women who cannot tolerate AZT, or have had disease progression (ACTG 332). A large Phase III trial (ACTG 316) is currently enrolling women to study nevirapine in delivery and labor in combination with standard of care. For information on these trials, call 800/TRIALS-A.

Other studies are looking at Vitamin A deficiency and vertical transmission. The incidence of severe Vitamin A deficiency is low in the U.S., so it is difficult to determine if this is a potential risk factor here. However, in the developing world, where Vitamin A deficiency is more common, a study by Richard D. Semba, M.D., and colleagues from Johns Hopkins University found that higher levels of deficiency were associated with higher rates of vertical transmission in Malawi (*Lancet*, June 25, 1994; 343(8913): page1593-7). Care needs to be exercised with Vitamin A because high doses can cause birth defects during the early stages of pregnancy. Prenatal vitamins contain 8000 IUs of Vitamin A, which is the maximum amount recommended for any pregnant woman in the U.S.

In an attempt to determine if Cesarean sections can reduce vertical transmission, a study in Italy is comparing vaginal births to C-sections. This is a controversial trial because a C-section is a major operation for an immune-compromised woman. In addition, the study will be hard to complete, as a quarter of the women randomized to have vaginal deliveries will wind up needing C-sections.

Other studies are looking at vaginal viricides to prevent the infant from coming into contact with infectious secretions. One large study in Malawi involving over 7,000 volunteers failed to interrupt transmission when

using vaginal swabbing with chlorhexidine (a detergent), except when membranes were ruptured more than four hours before delivery (Biggar R, et al. *Lancet*. June 15, 1996; 347(9016):1647-50). Dr. Mofenson stated that it might be more effective to employ a chlorhexidine lavage that utilizes a catheter to wash out the whole vagina. A study is underway to examine the efficacy of this method as well as one using another viricide as a suppository beginning about two weeks before delivery.

Other studies are looking at the mode of infant feeding. It is generally agreed that breast-feeding increases the risk of transmission. In the U.S. breast-feeding is not recommended. However, in many countries in the developing world, it is the only option due to the lack of clean water to make formula.

The Antiretroviral Pregnancy Registry has been established to collect observational data on antiviral exposure during pregnancy in order to assess the potential teratogenicity. Registry data is used to supplement studies and is provided to clinicians to assist patients in making informed treatment decisions. Data are being compiled on most of the currently approved antiretrovirals and more will probably be added in the future. Health care providers can request information and report data on patients by calling 800/722-9292, ext. 38465.

Care needs to be exercised with Vitamin A because high doses can cause birth defects during the early stages of pregnancy.

HIV Pregnancy Guidelines Had Little Data to Go On

by Carlos H. Arboleda

More than a year after the introduction of protease inhibitors for the treatment of HIV infection, the federal government has released a series of documents that attempt to provide principles and guidelines for the use of antiretroviral therapies. In general the documents cover the issues of when to start, when to change and what therapies to use. The underlying premise is that HIV infection should almost always be treated with a combination of at least three drugs that include a protease inhibitor and two nucleoside analogs. The recommendations for the treatment of pregnant women appear in both the guidelines for the treatment of adults and in a separate document focused solely on pregnant women. Unfortunately, both documents dance around the issues of when HIV-positive women should begin treatment and what they should use during pregnancy.

Principle number 8 from the "Report of the NIH Panel to Define Principles of Therapy of HIV Infection" says that "women should receive optimal antiretroviral therapy regardless of pregnancy status," further explaining that, "in general, pregnancy should not compromise optimal HIV therapy for the mother." By optimal therapy the panel means the timely use of combination therapy. The problem is the lack of research on the safety and efficacy of the available drugs during pregnancy, with the exception of AZT, 3TC and nevirapine. Pregnant women are left to make treatment decisions in a vacuum of reliable scientific information.

The FDA has developed a system to classify drugs based on preclinical and clinical data relevant to their use in pregnancy. Table 1 explains each category and classifies the eleven approved antiretroviral agents and some common OI med-

Table 1: HIV/AIDS Drugs during Pregnancy**Explanation of FDA classification**

A: Adequate and well-controlled studies of pregnant women fail to demonstrate a risk to the fetus during the first trimester of pregnancy (and there is no evidence of risk during later trimesters).

B: Animal reproduction studies fail to demonstrate a risk to the fetus and adequate and well-controlled studies have not been conducted.

C: Safety in human pregnancy has not been determined, animal studies are either positive for fetal risk or have not been conducted, and the drug should not be used unless the potential benefits outweigh the potential risk to the fetus.

D: Positive evidence of human fetal risk based on adverse reaction data from investigational or marketing experiences, but the potential benefits from the use of this drug in pregnant women may be acceptable despite its potential risks.

X: Studies in animals or reports of adverse reactions have indicated that the risk associated with the use clearly outweighs any possible benefit.

Pregnancy Category	Antiviral Drug/OT Drug
A	NONE
B	ddl, nelfinavir, ritonavir, saquinavir
C*	AZT, ddC, d4T, 3TC, delavirdine, TMP/SMX, aerosolized pentamidine, indinavir, nevirapine, acyclovir, rifampin, fluconazole
D	NONE
X	NONE

**Some category C drugs that are carcinogenic in animals, such as acyclovir which has been available for many years, have been shown over time to be relatively safe in human pregnancy and to not cause tumors.*

ications. Table 2 addresses the issue of placental transfer.

Clinical scenarios are presented in the pregnancy guidelines to address specific situations and offer recommendations for the use of antiretroviral drugs to reduce vertical transmission.

For treatment-naïve women in the first trimester of pregnancy, it is recommended, if clinically possible, to delay therapy until after 10 to 12 weeks gestation. This recommendation makes sense, since there is no evidence about the safety of use of any antiretroviral during this period. After the first trimester, such women should be offered the three-part ACTG 076 regimen (see page 27 of this issue) plus other antiretroviral drugs as needed for their own health.

In the case of women who are receiving therapy, the recommendation is that if pregnancy is identified before the end the first trimester, consideration should be given to continuing therapy. If therapy is discontinued during the first trimester, all drugs should be stopped and reintroduced simultaneously to minimize the development of resistance.

If pregnancy is identified after the first trimester in women receiving treatment, then the recommendation is that they should continue. If the current regimen does not include AZT, the addition or substitution of AZT is recommended after 14 weeks. Intrapartum and newborn AZT is recommended regardless of the prebirth antiretroviral regimen.

The thrust of these recommendations is that overall, treatment should continue during pregnancy after the first trimester, but the specifics of the treatment do not go beyond the three-part AZT protocol, which in some situations is clearly suboptimal. More research is needed on the safety and efficacy of all antiretroviral drugs during pregnancy for both the mother and the fetus.

Table 2: Drugs' Placental Passage in Humans**Positive**

AZT, ddl, d4T, ddC, 3TC, nevirapine

Negative or unknown*

delavirdine, nelfinavir, ritonavir, saquinavir, indinavir

There may be positive placental passage in animals (simians and rodents), but unknown in humans.

Commentary

The Histrionic Push for Mandatory Perinatal HIV Testing

by Eileen Hansen, Public Policy Director, AIDS Legal Referral Panel, San Francisco, CA

Research overwhelmingly shows that voluntary HIV testing programs are working for pregnant women and that maternal-fetal transmission rates are dropping. The threat of mandatory testing in other populations meanwhile has been shown to drive people away from the health care system. These observations notwithstanding, the May 1996 reauthorization of the Ryan White CARE Act included an amendment allowing for—and, in fact, *encouraging*—mandatory HIV testing of newborns. (And newborn testing implies testing of the women who bore the children since testing at birth reflects the mother's antibodies, not the child's.) This law will be phased in over a period of four years and was the culmination of several federal efforts to mandate HIV testing of pregnant women and/or newborns.

Additionally, New York State implemented legislation in February of 1997 mandating the testing of newborns. (The HIV Law Project in New York City recently filed a class action suit against the State of New York and two hospitals, see box.) In 1995, California *defeated* an effort to mandate testing by creating a bill that supports the federal Centers for Disease Control guidelines, which advise counseling and *voluntary* testing for pregnant women.

A major part of the justification for mandatory HIV testing was the results of *just one* clinical trial, ACTG 076 (1994). ACTG 076 demonstrated that maternal-fetal HIV transmission could be reduced by as much as two-thirds through the administration of zidovudine (AZT) during pregnancy and in the newborns. Because of these data, efforts to test all pregnant women and then coerce those who are HIV-positive to take AZT as a means of protecting the fetus have begun—without discussion of AZT's potential toxicity for the mothers and the lack of information on the long-term effects on the babies. HIV-positive pregnant women have been threatened with the loss of their children if they do not take AZT. (AZT monotherapy is still the current standard of care for only one population: preg-

Editor's note: In July 1997, HIV Law Project filed a class action lawsuit against New York State and two Bronx hospitals regarding deficiencies and abuses in implementation of New York State Law, Chapter 220, which mandates newborn HIV-antibody screening. Violations of patient rights are alleged, including: not offering voluntary counseling and testing during pregnancy; not informing mothers that their infants are being tested for HIV; not giving appropriate counseling; and not providing newborn HIV test results to mothers in a timely manner.

Passionate positions have been staked out on the subject of testing. Governmental agencies, public health leaders, medical providers and women at risk of HIV infection all have a strong interest in preventing perinatal transmission of HIV. Though the goals overlap, the strategies to achieve these goals are often at odds. While knowledge of factors related to perinatal transmission and its prevention has increased measurably in the past few years, knowledge gaps are often evident in debate regarding mandating HIV testing in newborns. Vigilant protection for the civil rights of women and their children is critical.

However, many public health experts and medical professional would argue for routine HIV testing in all primary care settings (not unlike routine syphilis testing, or routine cholesterol testing). Central to both positions is the reality that HIV infection is not a "routine" disease. HIV testing is afforded special legal status, generally requiring an informed consent procedure. Routine testing (not mandatory testing) in any setting will not be feasible until we overcome knowledge gaps and vanquish the stigma associated with HIV that is still manifest in policymakers, medical providers and the public at large. We must also be able to guarantee that HIV testing in pregnancy and in the newborn will not lead to greater harm than good for women and their children. Examples of harm to the mother would include risk of relapse to addiction, risk of suicide, risk of domestic violence, and risk of rejection, isolations and abandonment by those in her current support system. Any such impairment of a mother's capabilities obviously will have a strong negative impact on her child's upbringing and care.

—RD

nant women. Protease inhibitors are just beginning to be studied in pregnant women.)

The AIDS movement historically has opposed any form of mandatory HIV testing. But the strength of the movement's response has varied depending on the population targeted for testing. This case involved an especially disenfranchised population made up mostly of poor women of color, and the move to test was sometimes characterized as a "women's issue *rather* than an AIDS issue."

Of course there are broader, non-HIV issues involved: The ability of policymakers to successfully target pregnant HIV-positive women emanates from a long history of attacks on the rights of women to control their own bodies, including their reproductive rights. Obstetric practice in the U.S. has become so oppressive and alienating that many poor women avoid prenatal care. More affluent women frequently search out alternative, more compassionate birthing experiences outside the mainstream.

Because we have not sufficiently developed a more powerful response to defeat HIV testing efforts through public health, legal, civil liberties and HIV-specific arguments, there is an ongoing

need for strategizing and grassroots organizing within the HIV communities. We can still stop the implementation of the Ryan White CARE Act Testing Amendment. We can continue to bring the numbers down without mandatory testing or forced medical treatment By encouraging the CDC and the states to focus on educating *all* women as to the importance of HIV prevention, by encouraging women to consider being voluntarily tested *prior* to becoming pregnant, and by targeting our efforts toward noncoercively reducing the number of perinatal transmissions. If the states can demonstrate that their voluntary programs are successful, then a federal determination that mandatory testing be "routine practice" throughout the country will not occur. We must ensure this outcome through serious state-by-state organizing and through a strong national coalition effort that places this issue squarely at the center of the AIDS movement's priorities.

An in-depth analysis of this issue is forthcoming. Contact Eileen Hansen, AIDS Legal Referral Panel, 582 Market Street, Suite 912, San Francisco, CA 94104, 415/291-5454.

Early Treatment for HIV-Infected Infants

by Jill Cadman

With increased screening of pregnant women, many fetuses are known to be at risk for HIV infection. Therefore, infants born to HIV-infected women can be checked within the first weeks of life by PCR or culture assays for the presence of infectious virus in blood specimens. HIV infection can be definitively diagnosed in virtually all infants who have contracted the virus by six months of age. Nearly all such infants can be detected by one month. One positive test indicates presumptive infection and should be confirmed by a repeat test as soon as possible. Antibody testing is not a useful assay in children under 18 months of age since infants have maternal antibodies until then, and it is not possible to differentiate whether HIV antibodies belong to the child or are maternal in origin. If antibodies persist beyond this age range, only then do they indicate that the child is infected with HIV.

Yvonne Bryson, M.D., of the University of California, Los Angeles spoke at the Pediatric HIV Symposium in May 1997. She stated that 30% to 50% of the positive newborns can be diagnosed positive by culture at birth. The other 50% to 70% are negative at birth and positive at a

later date. This suggests that babies who are negative by culture at birth but eventually test positive are being infected at the time of delivery. Treatments given to newborns who initially test negative may still be worthwhile as post-exposure prophylaxis or early therapy.

For infected infants, clinicians describe three distinct clinical outcomes. The first group is composed of rapid progressors who present symptoms early and become ill quickly. The second and largest group are the intermediate progressors who develop symptoms gradually. The third group are the long-term pediatric survivors, who include children up to eight years old without any symptoms or immune suppression. These children often have the less pathogenic non-syncytia-inducing (NSI) strain of HIV, low viral load, and comparatively high antibody levels.

According to recently published Women and Infant Transmission Study (WITS) data on 619 children, infants whose first positive culture was at 48 hours after birth or earlier showed higher viral load in their first two months than those infants who did not test positive until seven days or older. Peak viral levels at one month

indicate that the majority of infected infants in the study were exposed around time of delivery. A small number of infected infants had high blood levels of HIV at birth, suggesting that they were infected in utero.

Babies in general have greater viral loads than adults. Viral load can frequently be very high in the first year of life, sometimes reaching levels in the millions. This is similar to primary infection in adults. But without treatment, a baby's viral load comes down more slowly and levels off at higher levels than an adult's viral load. According to the WITS study, viral load peaks at one to two months of age and then declines slowly to level off at 24 months. Median viral load for the infants in the study was 318,000 at one month and 256,000 at two months. Viral load then declined to a median of 34,000 at two years. This pattern may reflect the lower efficiency of an immature immune system in containing viral replication.

The WITS study demonstrated that viral load measurements could be used to predict severity of disease. Rapid progressors had high peak viral loads, median 724,000, from birth to two months. Infants with levels greater than 299,000 during the first few months had a 44% probability of progressing to AIDS or death within the first 24 months. Viral loads below 299,000 resulted in a 15% rate of progression, and infants with viral loads of less than 70,000 did not progress rapidly to AIDS and death within their first 18

months (Shearer W. *New England Journal of Medicine*. May 1997; 336(19):1337-42).

According to Dr. Bryson, infants who are treated earlier do better and their prognosis can be improved. If viral load can be reduced in the short term during the first few months of life, it may have a long-term effect. The prognosis for pediatric HIV has improved overall with early diagnosis and early treatment. The current thinking is to treat newly diagnosed babies very aggressively regardless of clinical status or viral load. Initiating combination antiviral therapy in infants in the period of primary infection potentially could provide durable suppression of viral replication and prevent selection of resistant mutations.

Dr. Bryson presented data from a trial using AZT, ddI and nevirapine in eight infants 2 to 16 months of age. The combination was well tolerated. By week four, there was at least a 1.5 log (97%) reduction in viral load in seven of the eight participants. Over the six-month trial period, viral load remained below baseline for these seven infants. In twins who were treated at 2.5 months for 14 months thus far, viral loads went to undetectable and viral culture tests were negative although HIV DNA PCR, a measure of surviving HIV-infected cells, remained positive (Luzuriaga K. *New England Journal of Medicine*. May 1997; 336(19):1343-9). Dr. Bryson was optimistic that these data indicated that viral eradication in infected children is possible.

ACTG 300 Leaves Many Questions Unanswered

By Dave Gilden

On June 18, the NIH-sponsored pediatric trial ACTG 300 was brought to an early conclusion. Its Data and Safety Monitoring Board (DSMB) had determined that the data already collected amply demonstrated that AZT/3TC, or AZT/ddI for that matter, were superior to ddI monotherapy for treating children with HIV. ACTG 300 started enrolling in July 1995. It recruited children aged 6 weeks to 15 years who had symptomatic HIV infection and little to no prior anti-HIV treatment.

The original trial design included three regimens: ddI alone, AZT plus ddI, and AZT plus 3TC. Its purpose was to compare differences in clinical disease progression (i.e. the occurrence of new opportunistic infections, inadequate growth, neurologic deterioration or death) among those receiving the various treatments. But enrollment in the AZT/ddI arm of the trial was halted in June of 1996, on the news that ACTG 152 had found no significant difference

between AZT/ddI and ddI alone (see *Treatment Issues*, March, 1996, pages 7-8).

ACTG 300 has been hailed as proving that "two drugs are better than one" (NIH press release) or more simply that AZT/3TC "showed a 70 percent reduction in the risk of disease progression compared to ddI alone" (press release from BioChem Pharma, owner of patent rights to 3TC). As usual, the results have to be interpreted within the narrow confines of the trial. Of the 596 participants whose experience was analyzed, 471 were on either AZT/3TC or ddI. Since a much smaller number were assigned to AZT/ddI (from the first 11 months of trial enrollment only), most of the analysis performed so far compares only AZT/3TC to ddI alone. When AZT/ddI was compared with AZT/3TC, the results were similar, as shown in the table, and better than the ddI monotherapy arm. Also, participants' average time in the trial was only 11 months, considerably shorter than ACTG 152's

ACTG 300 Results

	ddl	AZT+ddl	AZT+3TC
Disease progression and death, all participants	38 (n=235)	14 (n=125)	15 (n=236)
Disease progression and death, participants who began before 5/16/96	31 (n=124)	14 (n=125)	13 (n=123)
Deaths, all participants	15	2	3
Viral load (HIV RNA), participants who began before 5/16/96:			
week 12 (n=248)	-0.21 log	-0.57 log	-0.90 log
week 36 (n=216)	-0.31 log	-0.55 log	-0.72 log
week 48 (n=198)	-0.58 log	-0.70 log	-0.71 log

Notes:

- 50% of participants were observed for less than 9.4 months (the *median* follow up time); number followed for at least 48 weeks was 200.
- Both combination arms, including AZT/ddl, resulted in a statistically significant reduction in disease progression and increased survival when compared to ddl monotherapy (contrary to ACTG 152, which found an equivalence between AZT/ddl and ddl alone).
- Progression was mostly due to growth failure and neurologic deterioration (and neurologic deterioration was measured using a more sensitive scale than in ACTG 152).
- 83% of endpoints and all deaths occurred in the group that was less than 3 years of age.
- Only four cases of disease progression occurred in those greater than 3 years of age.
- Baseline viral load was about 5 logs, or 100,000 HIV RNA copies per ml of plasma.

32 months. The final results might have been different if follow up had been continued as long in ACTG 300 as in the earlier trial. Results for both viral load (see table) and CD4 count from the different ACTG 300 trial arms seem to converge for the participants monitored 48 weeks or longer. Such convergence could presage a convergence in clinical disease progression.

Finally, virtually all the disease progression events occurred in the 53% of participants who were less than three years old. It is unknown, again because of the short follow-up time, how

well the improvements seen in the younger children is mirrored in the older ones. The trial enrollees older than three obviously survived at least three years of HIV infection without any antiviral treatment. For these relatively slow progressors, ddl monotherapy might indeed have comparable benefits to double nucleoside analog combinations. Science, in any case, has moved on—to triple drug therapies containing protease inhibitors and NNRTIs. By the time it was prematurely ended, ACTG 300 was already an anachronism.

Treating Children for HIV and AIDS

by Karin Nielsen, Pediatric Infectious Disease Specialist, UCLA Maternal Child Clinic

With the advances in the field of HIV retrovirology, new treatment options and new diagnostic resources are now available for pediatric patients. Management of the HIV-infected child is an evolving process with a rapidly changing prognosis. It seems clear that HIV-infected children can obtain significant benefit from highly active antiretroviral therapies. With early diagnosis and early treatment, there is considerable optimism that more HIV-infected children will reach adolescence and become long-term survivors of a chronic disease. As one of our patients once said, "HIV is not a disease you die from, but a disease you live with."

Evaluating the Child's Status

Once it is clearly established that the child is infected with HIV, standard clinical and laboratory evaluations should be conducted. These include a complete physical exam with special attention to developmental assessment (growth, height and weight and central nervous system maturation). Key signs such as lymphadenopathy and enlargement of the spleen or liver should also be checked for. Lab tests should include T-cell subsets, complete blood count, quantitative immunoglobulins, and HIV viral load. If the child has any clinical findings of neurologic impairment, an MRI or CT scan of the

on disease severity. For resistant varicella, foscarnet is another treatment option, and valaciclovir is presently under investigation.

Children with advanced HIV disease are at risk for CMV, MAC and TB. CMV may be a complication of late stage disease and might also be a cofactor in disease progression. Prophylaxis of MAC is indicated for children with CD4 counts under 100 (or <15%), and can be accomplished with rifabutin, clarithromycin or azithromycin. Incidence rates of TB in HIV-infected infants who are exposed to a TB-infected individual are 10-to 100-fold greater than in the general population. Children and family members should be screened annually with PPD skin testing, and chest X-rays when appropriate.

Lymphoid interstitial pneumonitis (LIP), a chronic pulmonary disease, has been classified as the second most common manifestation in HIV-

positive children. Unlike PCP, LIP is rarely fatal and can be treated with bronchodilators (inhalers).

Children with HIV infection should follow a slightly different vaccination schedule in order to avoid exposure to any live vaccines. Oral polio vaccine and varicella zoster vaccine are contraindicated in HIV pediatric patients (and family members living in the same household). Children infected with HIV can receive IPV (inactivated polio vaccine). MMR (measles, mumps, rubella) vaccine should not be given to severely immune-compromised children. HIV-infected children should receive pneumococcal vaccine as well as yearly influenza vaccine after two years of age. The other childhood immunizations (hepatitis B, DPT (diphtheria-tetanus-pertussis), and Haemophilus influenza vaccine (HIB) should be given according to routine childhood immunization schedules.

Pain Management in Children with HIV/AIDS

Mary Jo O'Hara, R.N., and Lynn Czarniecki, R.N., National Pediatric & Family HIV Resource Center, University of Medicine and Dentistry of New Jersey

Anticipating and preventing pain, rather than alleviating existing pain, is the goal of appropriate pain management.

A five-year-old boy enters the hospital and remains curled in a fetal position, face to the wall, refusing to talk. Medical interventions to treat the reason for the admission are instituted, but the child remains withdrawn. Given the stage of illness, a trial of round-the-clock pain medication is given, and he begins to get up, go to the playroom and enjoy life again.

A three-year-old girl, finished with the physical exam, chooses an animal pop-up book to "read" while the phlebotomist prepares to draw blood. Grandma sits with the child in her lap asking about all the animals, distracting the child's attention away from the procedure. After a moment's focus upon the needle "stick," she exhales a deep breath to "blow the hurt away" and the procedure is over. With a hug from Grandma and the technician, the child replaces the book and waves good-bye 'til the next visit.

Children with HIV/AIDS experience pain throughout the course of the disease. Initially, periodic pain associated with procedures may be tantamount, but as disease progresses and children reach the end of life, pain and pain management become more complex. Historically, pain in children has been underrecognized, underreported and undertreated (Schechter, 1991; Eland, 1977). For children living with HIV, history is repeating itself.

There has been little research done in the area of pediatric HIV and pain. Although there are few reports in the literature, clinicians who have cared for large numbers of children with HIV

recognize pain as a serious problem. In adults with HIV, pain is a frequently reported symptom during all stages of disease (O'Neill & Sherrard, 1993; Hewitt, 1997). Patients report headaches, mouth and throat pain, chest pain, myalgia (muscle ache), peripheral neuritis, arthralgia (joint pain) and the pain associated with medical procedures (O'Neill & Sherrard, 1993; Lebovitz, 1989; Singer, 1993). Like patients with cancer and other diseases, pain in patients with HIV has been severely undertreated (Breitbart, 1996).

A few studies document that children with HIV also have similar types of pain. Hirschfeld et al. (1996) reported a pain incidence of 59% in 61 children with HIV infection as compared to an incidence of 47% in children with cancer. Types of pain experienced by children with HIV include headache, abdominal pain, oral cavity pain, neuromuscular pain, peripheral neuropathy, chest pain, earache, odynophagia (pain while swallowing), myalgia and arthralgia (Czarniecki, 1993).

Yet barriers to recognition and treatment of pain are considerable. Despite increasing research to the contrary (Anand, 1987), myths regarding children's pain persist. Some clinicians continue to believe that children do not experience pain. The belief that nerve cell myelination was incomplete in infants and young children has resulted in the erroneous assumption that children do not experience the same kind or intensity of pain as adults, and therefore do not need the same pain prevention (anesthesia) or

pain relief (analgesia). A second myth is that children do not remember painful experiences. "The sooner we get this over with, the sooner he'll forget" is a common attitude when performing painful procedures. Anyone who has witnessed a three year old begin to cry at the sight of the hospital entrance knows that children do remember and associate their pain.

A third myth is that children cannot tell where it hurts. It is true that children may not have the same vocabulary, and much of what is communicated may be nonverbal, but using reliable pain assessment tools (such as the Eland coloring tool) allows children to communicate the location, frequency and intensity of their discomfort. As children, clinicians and family members become increasingly familiar and competent in the use of such tools, a better understanding and subsequent management of children's pain can be expected. Pain assessment should be as routine a component of data collection as vital signs.

The assumption that children who watch TV, play or sleep must not be in pain is also a myth. As with adults who distract themselves from noxious stimuli, so do children find a way to focus attention away from the pain. Sleep, unfortunately, is a too common remedy used by children to escape from pain.

Managing Pain

The effective treatment of pain in children with HIV/AIDS can be challenging. Developing an appropriate pain management strategy may include pharmacologic and nonpharmacologic (complementary) therapies tailored to a child's age, development, culture, type of pain and past experience.

Specific barriers can sometimes hinder clinicians. Children may be nonverbal because of age or neurologic complications, and cannot self-report their pain. But even when the children do express themselves, parents and health care professionals may deny a child's pain because it represents progression of disease. Also, families who have a history of substance abuse may be very resistant to the use of opioid analgesics for fear of addiction.

Effective pain management requires several essential components. First, pain must be recognized. *Pain is whatever the child says it is and wherever the child says it hurts.* When there is a reason to suspect pain, but the child is unable to communicate due to age or cognition, a trial of pain management should be offered. Using the example of the five-year-old boy, it is clear that the responsibility for considering pain as the source for signs of depression is the clinician's. Children express

pain in a number of different ways. Besides crying, grimacing or thrashing about, children with chronic pain may simply become withdrawn, quiet, depressed, inactive and anorectic.

Secondly, pain should be treated even as the underlying cause is being determined. Reluctance or refusal to medicate a child in acute pain for fear of "masking the symptoms" is neither ethically acceptable nor medically indicated. The family of a child doubled over with acute abdominal pain should expect that a correct diagnosis will be based upon appropriate medical and laboratory evaluations and not solely on a pain assessment. Even when a specific diagnosis for pain is elusive, which is not uncommon for children with HIV, pain relief is essential.

Lastly, the backbone of good pain management is the appropriate use of analgesics according to a pain ladder (Pediatric Supportive Care/Quality of Life Committee, 1995). The following is based upon the World Health Organization guidelines.

- Mild pain: acetaminophen or nonsteroidal anti-inflammatory drugs (NSAIDs such as ibuprofen or naproxen).
- Moderate pain: continue NSAIDs or acetaminophen and add a mild opioid such as codeine.
- Severe pain: continue NSAIDs or acetaminophen and add a strong opioid such as morphine, oxycodone or fentanyl.

The dose of opioids to achieve pain relief can go very high. Longer-acting opioids such as liquid methadone or time-released morphine can be used once the correct dose is determined by using short-acting morphine. The fentanyl patch, a transdermal system that provides timed-released fentanyl over three days, has been extremely helpful for opioid-experienced patients who cannot tolerate oral medications. Whenever a long-acting agent is administered, the patient must also be given prescriptions for a short-acting opioid for breakthrough pain. As tolerance develops, the clinician can calculate the 24-hour requirement for short-acting medication and adjust upward the long-acting opioid.

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Certain adjuvant medications such as anticonvulsants and antidepressants have been found useful for neuropathic pain. Hydroxyzine, which can help with nausea, also has an analgesic affect and can reduce the amount of opioid required. Side effects of opioids such as nausea, constipation, itching and drowsiness should be anticipated and treated aggressively.

Families must be educated about the difference between physical dependence and addiction. The clinician needs to explore with the patient and family the meaning of pain to them and their previous experience with pain and pain medications. In families where substance abuse exists, the issue must be discussed directly with them and there must be mutual understanding and agreement about the giving of opioid prescriptions.

Anticipating and preventing pain, rather than alleviating existing pain is the goal of appropriate pain management. "Round-the-clock" as opposed to PRN (as needed) dosing maintains a constant analgesic level. The goal is to attain maximum pain relief with minimum side effects. *Once pain relief has been attained, it is essential that the schedule be continued and not reduced because the child is now pain-free.*

Coping Techniques

Pain is more than a physiologic response to a noxious experience. If we again consider the three-year-old who bursts into tears at the sight of the hospital, it is clear that the discomfort is more than the moment of the needle stick associated with a blood draw. Recognizing that anticipatory anxiety has a profound impact on the child's quality of life, appropriate interventions to decrease the fear associated with the painful procedure should be instituted.

Strategies to meet this need are primarily based upon the child's developmental level. Infants and young children respond to distraction techniques such as bubbles, pop-up books or pinwheels. As children become older, visualization techniques such as imagining the pain controlled by a switch which the child can "turn down" may assist in coping with chronic pain. Visualizing the sights, sounds and smells of a visit to Grandma's house may allow the child to relax, thereby decreasing the muscle tension associated with acute pain. More sophisticated interventions, such as altering the level of consciousness and attaining a deep state of relaxation through hypnosis require professional training but can make a significant impact on pain control, particularly for children with chronic pain.

Nonpharmacologic interventions can be enormously successful but should never be used in place of appropriate pharmacologic pain management. The use of a topical anesthetic, such as EMLA cream, 2.5 grams applied to the venipuncture site 45 to 60 minutes before the painful procedure (as in the example of the three-year-old) will avoid the development of anticipatory anxiety since the pain will be eliminated. In the meantime stress management techniques can be applied to return control of the experience to the child.

Recognizing, assessing and treating the acute and chronic pain associated with HIV disease in children is frustrating and time-consuming. But successful interventions are both possible and necessary and offer incalculable rewards.

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SPEECHES - WOMEN

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Presentation to the
Third Annual Women and HIV Conference
Las Vegas, Nevada

By
Todd A. Summers
Deputy Director, White House Office of National AIDS Policy

Date
October 22, 1997

I'd like to thank you for inviting me here to speak with you about the AIDS epidemic, particularly as it relates to women. Sandy Thurman, the Director of our office, was supposed to be with you today but has had to stay back in Washington to keep up the fight. The Labor Health and Human Services appropriation bill is still being debated by a conference committee, and it's important to all of the work that you do that she stay there to protect AIDS funding. So I extend to you an apology on her behalf.

This is an extraordinarily important time for people living with HIV and AIDS both here in the United States and in many of the other developed nations in the world. I think we all have shared some of the excitement that has come from the first ever decline in the number of deaths from AIDS.

But you also know that we must temper that enthusiasm with the reality that this epidemic is far from over. Now is certainly not the time for complacency, and I want to assure you that we are under no illusion that our work is nearing an end.

What we do know from all of those numbers sent out by the Centers for Disease Control is that the overall news is promising, but that the underlying statistics are shedding light on the tremendous disparities in how this epidemic has permeated our nation. More and more, AIDS is becoming a disease of poorer urban women, usually African-American or Latina, for whom the "primary risk factor" is men.

I thought today that I would give you a little of the statistical perspective--at least enough to use up the caffeine in your system! Then I'd like to identify some of the reasons that we believe that women are faring so poorly in comparison to men in this epidemic. I'm also going to give you a windshield survey of the international picture on women and HIV and AIDS. And finally, I will walk through some of the steps that we believe are necessary to make substantive improvements.

You can take a deep breath and bear with me as I will probably be telling you many things that you already know. But I think it's important that we are at least aware of some of the problems. I'm hoping to keep a significant time open before the next speaker so that we can do a little more of a conversation. We are very interested in hearing from you about what problems you're seeing, suggestions on what we should do, and even criticism about what we have not done right or at all.

The statistics!

- the CDC recently announced a 23% decrease in number of AIDS-related deaths in 1996 - however, the incidence of AIDS-related opportunistic infections went down only 6%, meaning that while fewer people are dying from AIDS, more people are living with AIDS

- the statistics were not as good among women, for whom the decrease in AIDS-related deaths was only 10% and the incidence of AIDS-related opportunistic infections went up 2%

- the decrease in AIDS deaths was most dramatic among men who have sex with men, with a 30% decline

- the decrease was least dramatic for men and women infected through heterosexual contact, for whom AIDS deaths went down only 8% and where AIDS-related OI's went up 11% and 7%

- among African-American women infected through heterosexual contact, OI incidence increased 12%; for Latinas, incidence increased 5%; for white women, it went down 4%

- women now account for 20% of all adults with AIDS

- since 1991, there has been a 70% increase in AIDS incidence among women, leaving women the fastest growing group with AIDS in US

- African-American women are 17 times more likely to get AIDS than white women; Latinas are 6 times more likely

- While African-American and Latina women comprise only 1/4 of all women in US, they make up 3/4 of all AIDS cases among women

Why are women doing so much worse than men with respect to HIV infection and AIDS? Fundamentally, it's violence and degradation. I must say that I've always considered myself a reasonably enlightened person, but when I was doing some research for his presentation I was just stunned by some of the studies:

- 30% of all women in this country have been the victims of childhood sexual abuse (the rate is 75% for women sex workers)

- 1 in 4 women in this nation have been raped

- 1 in 5 has been the victim of domestic violence.

I have to apologize for my lack of awareness. It's really not that hard to see why women are being so disproportionately impacted by HIV and AIDS, is it?

There are, of course, other broad societal problems that make women more vulnerable.

- Racism continues to force women of color to the end of the line for health care and to support a climate where economic and social deprivation are all too common. It has certainly also been a problem that the prevention community has had only limited success in addressing. We clearly need to do more work to support prevention and education efforts that work for women of color. This, by the way, is an issue that we are pushing to be included in the President's new race initiative as part of the discussion around the overall disparity in health care and quality of life for people of color in this country.

- Self esteem, or more accurately, a lack of self esteem, greatly impacts on the success of prevention efforts. This is obviously tied to the issues of economic, social, and racial disparities for women.

-

Women with children are often left with an unfair burden for managing their families, leaving them little time to address their own health or personal needs

- Women have historically had

poorer access to quality health care. Study after study has shown that women present much later in their infection, often ignoring symptoms or self-medicating.

- Funding for ancillary supports like child care and transportation is hard to come by. Even locally-controlled funding like Ryan White CARE Act dollars are not necessarily allocated in a way that fairly addresses the needs of women with HIV and AIDS. There is also a growing push by some for a prioritization of primary care and treatment for Ryan White, which would leave even less money for the kinds of services that allow women to seek and maintain appropriate health care.

- There is a dearth of women-controlled prevention tools, and not enough research to develop them. This leaves women who are trying to stay HIV-negative in a position of always having to negotiate with their male partners to use a condom. Given the numbers I cited earlier about rape and domestic violence, coupled with complicated social and cultural issues, this is simply not acceptable. We must push for safe, effective, and available barriers or topical treatments.

There are a number of factors that are a little more subtle, but no less important. They are all inter-related, which adds to the complexity of the problems and their solutions.

- Women often don't know they're at risk! More and more women are infected by their male partners who are secretly having sex with other men or injecting drugs, or both. I spent a year and a half doing street outreach with male and female prostitutes and I was always livid by the end of the night because I'd see so many married men out there, and they clearly were not going home and announcing to their wives or partners that they'd just had a wonderful experience in Park Square!

- Doctors and other primary care provider don't always assume the possibility of HIV when symptoms arise, in part because their patients may not know they're at risk and so don't identify as such, or because the provider's don't know enough about diagnosing HIV infection in women. I should also add that there have been a number of recent studies, one in Philadelphia in particular, that found an astounding number of women who knew they were HIV positive, were in care, and still had not had a viral load count done or had anyone offer them the new treatments.

- Sadly, many community agencies are

still using prevention strategies that were created for gay men, partly because there has not been sufficient support for conducting research on the efficacy of various interventions on women, particularly women of color.

- The interplay of adult and childhood physical and emotional abuse has not adequately been addressed though you all know that it's a big part of the epidemic. In an HIV epidemiological research study conducted in Baltimore, Detroit, and the Bronx, they found that 43% of the 771 women enrolled has been sexually abused as children, that a slightly greater percentage had been sexually abused as adults, and that over 28% had witnessed a murder.

Two other reports I saw recently showed that women who reveal their HIV-positive status to their domestic partners have a far greater likelihood of being beaten, abandoned, shot and even murdered.

- Physiologically, the female reproductive channel is more susceptible to infection, including infection with HIV. Precious little research has been done to understand the specifics of this increase risk, which is a problem in identifying appropriate prevention tools and in establishing treatment protocols for pregnant women.

- The risks for Lesbians and bisexual women are often discounted as insignificant. Data on the actual risks of women-to-women sex is often difficult to obtain because many lesbians and bisexual women who are HIV-positive engage in other high risk activities. This has also left lesbians with little prevention and education efforts directed to their needs, which increases their likelihood of inappropriately dismissing HIV as a risk.

- We all know that women are treated differently in drug testing because of their ability to have children, whether or not that is their intention. There is actually some significant progress in this area. The Food and Drug Administration recently published a draft rule that would allow them to withhold funding from clinical studies that exclude women because of the risk of reproductive or developmental toxicity.

- The generally poorer state of health care for women includes a greater likelihood that they will have an undiagnosed or untreated STD. This greatly increases their susceptibility to HIV infection--as much as 3 to 6 times greater.

I feel like I've been reading from a Charles Dickens novel, but unfortunately we're not talking about Victorian England, we're talking about the here and now, which makes this all the more unacceptable. That is, sadly, the picture we see of HIV and AIDS among women in the United States, and it is obviously alarming. I hope during the upcoming discussion time, you can give me your ideas on how we can help fix some of these problems and correct the incredible imbalances that women face.

I'd like for a moment to talk about the international picture of women and AIDS for two reasons: one, Sandy is a strong proponent of increasing our awareness of the global epidemic and moving us from our provincial perspective; and two, there is much that we can learn from others about ways to do effective prevention, and there is much that we can share with our international counterparts about how to provide quality services and care.

The vulnerability of women we see here is only magnified in the international context. AIDS is raging virtually unchecked in countries across the globe at a rate that is absolutely astounding. It threatens not only millions of lives, but the economic and social stability of many developing regions of the world. Globally, there are 3 million new infections each year, 1 million of which are children. Over 90% of these infections are occurring in developing countries where the resources for prevention and care are minuscule to nonexistent.

In the Zulu-Natal region of South Africa, for example, one in five women is HIV infected. In some areas of Cambodia, 30% of children under 5 are infected. Five years ago, that number was more like 5%. That means that the epidemic is roaring through at an amazing speed, and is hitting women directly.

In India, I've seen estimates that as many as 40 million people will be infected with HIV by the year 2000. Burma, Russia and the recently independent states, Vietnam, almost the entire continent of Africa: they are all reeling under an epidemic for which they are woefully unprepared.

Perhaps one of the most startling problems for women in so many of these countries is the dramatic social and economic inequalities. Women are at the bottom of the economic ladder, and often have little chance of improving their status. These inequalities often dictate the nature of their sexual practices, leaving women largely unprotected from HIV.

For example, women in Zaire seek sexual partners known as “spare tires” in order to meet their most basic economic needs. It is survival sex that is so desperate that protection from HIV is virtually impossible.

In Uganda, girls from low income families are particularly vulnerable to older men, or “sugar daddies,” who offer money or gifts in exchange for sex. This can often be the sole source of support not only for the woman but for an entire family. A similar phenomenon has been reported in Zimbabwe.

There are also some complicated sociocultural factors. In Rio de Janeiro, women in low income communities believe that if they were to ask their partners to use a condom, they would implicate themselves as unfaithful and have to bear the repercussions of anger and violence.

Research projects conducted in nations as diverse as South Africa, Brazil, India, Guatemala, and Papua New Guinea reveal that many women who are aware of their partners’ infidelity feel helpless in changing that behavior since even raising the issue can disrupt the marriage and even jeopardize the women’s physical safety. Legal standards abroad only reinforce these horrifying realities. In one southeast asian country, millions of truck drivers work their way through the country, commonly sleeping with prostitutes along the way. When they come home, their wives are expected to submit to intercourse despite their husbands’ infidelity and unsafety. And the this country’s supreme court ruled in favor of that expectation by guaranteeing conjugal rights to the husband.

Add to this equation a pervasive lack of education and access to preventive measures such as condoms, and the women of the world, particularly the developing world where AIDS is striking hardest, are left in a very difficult position.

What to do?

So now that I’ve done all of the doom and gloom, let’s talk about what it is that can be done to make things better.

What to do?

- Talk about it more, particularly in venues such as this
- We need to build a more cohesive system of care - tie in substance abuse, mental health, primary health, counseling and support, housing, ancillary supports like child care and nutrition - one stop shopping
- AIDS service experts need to backstop colleagues from other service areas to avoid “dumping” of women from mental

health and addiction service systems

- We need to fund more peer-based information and support programs at the community level
- Increase our research budget on women-controlled methods of HIV prevention like female condoms and topical microbicides

microbicides

- Help physicians understand HIV symptomatology - create more of an expectation of HIV when it not be expected
- Need to get better address the twin epidemics of HIV and drug abuse that puts so many at risk for HIV and leads many to question proven prevention strategies like needle exchange.
- Research and testing of AIDS drugs need to focus more on women, including women that have or are planning on having children (only 12% of participants in government-funded clinical trials are women - miss an important access point for care)
- Advocacy communities need to speak in a more collective voice
- Must look at HIV infection and AIDS as a human rights issue

What will our office do?

- National summit of women leaders - get them more involved in the struggle, and raise public awareness about the disproportionate impact the AIDS epidemic is having on women
- Vaccine initiative announced by President
- HHS recently announced a task force working on lesbian health - we will work with them to make sure that issues related to lesbians and HIV are addressed
- Continue to work with the CDC to support prevention efforts that are designed by and for women - must also be culturally and linguistically appropriate
- Work with the ONDCP on getting more drug treatment (only 1 slot for every 3 addicts) and prevention
- Work with HUD to support more transitional and permanent housing programs for women - also try to get them to continue programs like the multi-diagnosis initiative
- Continue the President's commitment to protecting Medicaid program
- Advocate for additional funding for all AIDS-related programs like Ryan White, NIH, CDC, SAMHSA
- Work with NIH to improve their inclusion of women in clinical trials
- Push private industry to spend more time and money on developing women-controlled prevention tools
- talk with experts like you to identify problems, get ideas, implement solutions
- fight for more money

What can you do?

- Help us!
- Reach out to mental health and addiction service providers - offer them help - ask for help in serving your clients with HIV/AIDS rather than sending them off to the AIDS service organization for care
- Support programs that reach across lines created for bureaucratic or funding purposes - most women don't fit into the neat service categories we create
- Pay attention to the health needs of lesbians and bisexual women

- Reach across the ocean to help a sister agency in another country - fund mentorships or trainings
- Don't let those of us in Washington or the general public get complacent
- Think out of the box

This may be a time for healing, but it is not a time for resting!

Presentation to the
SAMHSA National Conference on Women

By
Todd A. Summers
Deputy Director, White House Office of National AIDS Policy

Date
September 23, 1997

Extraordinarily important time for people living with HIV and AIDS.

Lots of excitement -- must temper with reality that epidemic is far from over. Not the time for complacency.

Optimism has been fueled by reductions both in the overall number of deaths from AIDS and in the numbers of AIDS cases.

More and more, AIDS is becoming a disease of poorer urban women, usually African-American or Latina, for whom the "primary risk factor" is men.

Domestic Picture

- CDC recently announced a 23% decrease in number of AIDS-related deaths in 1996 - however among women the decrease was only 10%
- while incidence declined 15% among gay and bisexual men, for heterosexuals it went up 11% for men and 7% for women
- overall, for men incidence decrease 8% but for women increased 2%
- among African-American women, incidence increased 12%; for Latinas, incidence increased 5%
- women now account for 20% of all adults with AIDS
- since 1991, there has been a 70% increase in AIDS incidence among women - more than any other group or exposure category, leaving women the fastest growing groups with AIDS in US
- African-American women are 17 times more likely to get AIDS than white women; Latinas are 6 times more likely
- While African-American and Latina women comprise only 1/4 of all women in US, they make up 3/4 of all AIDS cases among women

Why women? a blistering array of society's problems:

- racism continues to force women of color to the end of the line for health care, prevention
- self esteem - impact on prevention
- sexism - unfair burden for managing children
- poorer access to quality health care - women present much later in their infection, often ignoring symptoms or self-medicating
- still lack adequate ancillary supports like child care and transportation
- primary tool for prevention is condom - not women controlled

Other reasons that are more subtle:

- women often don't know they're at risk
- doctors don't always assume HIV when symptoms arise - symptoms in women (like chronic yeast infections and PID) are not necessarily related to HIV, whereas for men, symptoms are often unique to HIV
-

- still using prevention strategies created for gay men - need help identifying better ways of reaching women
- physical and emotional abuse - understudied
- physiological - susceptibility
- for lesbians and bisexual women, risks are often discounted
- women are too frequently treated differently because of their ability to children, whether or not that is their intention
- STDs - 3 to 6 times more likely to get HIV if you have an STD (ulcerative and non-ulcerative)

International Picture

- vulnerability of women only magnified in international context
- disease is out of control, particularly in Africa and in South and Southeast Asia (there may be as many as 40 million people infected with HIV in India alone by the year 2000)

Factors contributing to spread of HIV

- dramatic social and economic inequalities
- these inequalities often dictate nature of their sexual practices, leaving women largely unprotected from HIV

Examples of economic inequalities subject women to unsafe sex:

- Women in Zaire seek sexual partners known as “spare tires” in order to meet immediate economic needs and access to resources .
- In Uganda, girls from low income families are particularly vulnerable to the enticements of older men, or “sugar daddies”, who offer money or gifts in exchange for sex. A similar phenomenon has been reported in Zimbabwe.

Sociocultural factors.

- In Rio de Janeiro women in low income communities believe that if they were to ask their partners to use a condom, they would implicate themselves as unfaithful and have to bear the repercussions of anger and violence.
- Research projects conducted in nations as diverse as South Africa, Brazil, India, Guatemala, and Papua New Guinea reveal that many women who are aware of their partners’ infidelity feel helpless in changing that behavior since even raising the issue can disrupt the marriage and even jeopardize the women’s physical safety.

Legal standards abroad only reinforce these horrifying realities. In India, millions of men drive trucks through the country, commonly sleeping with prostitutes. When they come home, their wives are expected to submit to intercourse despite their husbands’ infidelity and unsafety. And the Indian Supreme Court ruled in favor of that expectation by guaranteeing conjugal rights to the husband.

Add to this equation pervasive lack of education and lack of access to preventive measures such as condoms, and the women of the world, particularly the developing world where AIDS is striking hardest, are left with little hope.

What to do?

- Talk about it more, particularly in venues such as this
- Need a more cohesive system of care - tie in substance abuse, mental health, primary health, counseling and support, housing, ancillary supports like child care and nutrition
- AIDS service experts need to backstop colleagues from other service areas to avoid “dumping” of women from mental health and addiction service systems
- Increase our research on women-controlled methods of HIV prevention like female condoms and topical microbicides
- Help physicians understand HIV symptomatology - more of an expectation of HIV where it’s not otherwise expected
- Need to get better address the twin epidemics of HIV and drug abuse that puts so many at risk for HIV and leads many to question proven prevention strategies like needle exchange.
- Research and testing of AIDS drugs need to focus more on women, including women that have or are planning on having children (only 12% of participants in government-funded clinical trials are women - miss an important access point for care)
- Advocacy communities need to speak in a more collective voice - Massachusetts example
- Must look at HIV infection and AIDS as a human rights issue

What will our office do?

- National summit of women leaders - get them more involved in the struggle, and raise public awareness about the disproportionate impact the AIDS epidemic is having on women
- Vaccine initiative announced by President

- HHS recently announced a task force working on lesbian health - we will work with them to make sure that issues related to lesbians and HIV are addressed

- Continue to work with the CDC to support prevention efforts that are designed by and for women - must also be culturally and linguistically appropriate

- Work with the ONDCP on drug treatment (only 1 slot for every 3 addicts) and prevention

- Work with HUD to support more transitional and permanent housing programs for women - also try to get them to continue programs like the multi-diagnosis initiative

- Continue the President's commitment to protecting Medicaid program

- Advocate for additional funding for all AIDS-related programs like Ryan White, NIH, CDC, SAMHSA

- Work with NIH to improve their inclusion of women in clinical trials

- Push private industry to spend more time and money on developing women-controlled prevention tools

- talk with experts like you to identify problems, get ideas, implement solutions

- fight like alley cats!

What can you do?

- Help us!

- Reach out to AIDS service providers - offer them help - ask for help in serving your clients with HIV/AIDS rather than sending them off to the AIDS service organization for care

- Support programs that reach across lines created for bureaucratic or funding purposes - most women don't fit into the neat service categories we create

- Pay attention to the health needs of lesbians and bisexual women

- Reach across the ocean to help a sister agency in another country - fund mentorships or trainings

- Don't let those of us in Washington or the general public get complacent

- Think out of the box

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FEMALE CONDOM

Divider Title: _____



UNAIDS

UNICEF • UNDP • UNFPA
UNESCO • WHO • WORLD BANK

PRESS RELEASE

Joint United Nations Programme on HIV/AIDS

15 July 1997

MORE EVIDENCE ON FEMALE CONDOM: INCREASED PROTECTION AGAINST SEXUALLY TRANSMITTED DISEASES INCLUDING HIV/AIDS

UNAIDS promotes female condom as valuable extra option

Results from a UNAIDS-supported study of sex workers in Thailand show that the female condom, when provided as an extra option to the male condom, led to a 34% reduction in the mean incidence rate of sexually transmitted diseases in sex establishments compared with groups where only the male condom was available. The study, which compared a group of 37 sex establishments where only the male condom was available, to a group of 34 sex establishments where female condoms were also available, also found that female condom use contributed to a 25% reduction in the proportion of unprotected sex acts compared with the male-condom-only group.

Until recently the male condom has been the only method available for protection against sexually transmitted diseases, including HIV, the virus that causes AIDS. There is increasing evidence that the development of the female condom can provide women with a valuable extra option.

Launching its document "The female condom and AIDS", the latest in its "Best Practice" collection, UNAIDS drew attention to other studies which found that women who were not sex workers also thought the new product broadly acceptable. Most recently, UNAIDS-supported research conducted in Costa Rica, Indonesia, Mexico, and Senegal found that women felt the female condom could help them in the area of sexual negotiation with their partners. They felt the condom gave them an opportunity to communicate about safer sex more successfully than before. Also, female condoms were more popular where men were reluctant to use male condoms or where women did not trust men to use male condoms properly.

To satisfy demand for the female condom, UNAIDS has been concentrating on making it more easily available by negotiating a lower price with its manufacturers, the Female Health Company. As a result it is now available in developing countries' public sectors for less than US\$1- substantially lower than the market price. Up to 10 countries have already placed orders, with more than 30 others expressing interest.

The female condom, while protecting against disease, also acts as a contraceptive. UNAIDS produced with one of its co-sponsors, the World Health Organisation (WHO), an information pack bringing together all the issues including the product's safety, acceptability and availability in the context of women's rights.

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The Joint United Nations Programme on HIV/AIDS (UNAIDS) is the leading advocate for global action on HIV/AIDS. It brings together six UN agencies in a common effort to fight the epidemic: the United Nations Children's Fund (UNICEF), the United Nations Development Programme (UNDP), the United Nations Population Fund (UNFPA), the United Nations Educational, Scientific and Cultural Organisations (UNESCO), the World Health Organisations (WHO) and the World Bank.

UNAIDS both mobilises the responses to the epidemic of its six cosponsoring organisations and supplements these efforts with special initiatives. Its purpose is to lead and assist an expansion of the international response to HIV on all fronts: medical, public health, social, economics, cultural, NGO, business, scientific and lay -- to share knowledge, skills and best practice across boundaries.

For more information, please contact Anne Winter, UNAIDS, Geneva, (+41 22) 791.4577, Gareth Jones, UNAIDS, Geneva, (+41 22) 791.3387 or Dominique de Santis, UNAIDS, Geneva, (+41 22) 791.4765 or Lisa Jacobs, Ogilvy, Adams & Rinehart, New York, (+1 212) 880.5325. You may also visit the UNAIDS Home Page on the Internet for more information about the programme (<http://www.unaids.org>).

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SEXUAL BEHAVIOR

Divider Title: _____

Women's attitudes to men's sexual behaviour



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AIDS is viewed as a family tragedy in Africa. Almost 1.5 million Human Immunodeficiency Virus (HIV) - infected women are found in Africa, and between 10 and 30 per cent of these women in some urban cities are of childbearing age. It is estimated that during the 1990s, up to three million women will die of AIDS in Central and East Africa alone leaving at least 5.5 million children under 15 years as orphans by the year 2000 (UNICEF 1990). AIDS strikes, according to Ainsworth (1993), mainly adults in their most productive years; the illness robs families of one or more of their breadwinners. Such loss makes it harder for families to get ahead or break out of the cycle of poverty. A World Bank Study reported by Roseberry (1993) indicated that in Tanzania, rural households spent roughly the equivalent of one year's income on treatment and funerals in 1991. AIDS was not reported in Nigeria until 1986, but its steady rise to a conservative estimate of 962 cases in 1993 prompted the decision to pass a bill to curb its spread by the then Lagos State House of Assembly in 1993. The number, though low when compared with figures from East African countries, presents a gloomy picture, considering the observation made by Mann (1987), that there are about 50-100 HIV-infected persons for each case of frank AIDS. Also, owing to the resilience of extended family ties in absorbing intra-family problems, especially those that could attract stigmas, it is possible that AIDS cases are under-reported. Therefore, it would be wrong to assume that AIDS does not present a serious health risk in Nigeria. In fact Nigeria is believed by the World Bank to be a high priority area for AIDS prevention because of its large mobile population and estimated high levels of other sexually transmitted diseases.

AIDS has particularly adverse effects on women and children, and consequently the family. Women, owing to their status, are increasingly exposed to the risk of HIV infection and also suffer extensively from the social and economic impact of the disease.

Women's status has been a focus of appraisal. All through the ages, in the African and particularly Nigerian culture, women have been given subordinate status in the family and the society. A woman could be an object of enjoyment, given out as a gift to seal friendship or bundled out into a man's house even without her consent. Times have changed, but the status of women has not changed much. The vestiges of these traditional concepts coupled with socially induced factors have made women particularly prone to sex-related diseases and these factors, according to Merson (1992), restrict their ability to protect themselves from sexually transmitted diseases. For instance, studies have shown that expectation of monetary or material gain is a crucial factor in the decision by women to engage in sexual relations (Ososanya and Brieger 1994). Rural women according to Orubuloye, Caldwell and Caldwell (1991) gave the need for financial assistance as the single most important reason for some women engaging in extramarital relations. Some men, according to Orubuloye et al., even expect their wives to support the family financially from gifts and favours obtained in this way.

The deterioration in the economic situation in Nigeria is bound to affect the health and social status of the Nigerian population and especially the women and children. Nakajima (1989) noted that in parts of the world, and the developing countries in particular, morbidity and mortality among mothers and children are still unacceptably high. HIV-related diseases will inevitably augment these rates and impose new demands on the already inadequate health and social services designed for mothers and children. A synergy is likely to exist between low economic condition and low level of awareness in the propagation of AIDS.

The level of awareness of AIDS in rural areas is still quite low (Ososanya and Brieger 1994), and Nigerian men who are aware do not feel vulnerable to it (Onile 1993). The Health Belief Model formulated by Rosenstock (1974) suggested that preventive action is more likely to be engaged in by those who feel vulnerable to a disease. The preventive action in the case of AIDS is likely to affect the life style of the individual.

People's life style has been implicated in the spread of AIDS. Since no cure has yet been found for AIDS, preventing and controlling the disease remains the most viable option to contain it. Meyer (1988) pointed out the need to identify the risk behaviours and practices, their frequency, distribution and the cultural context in which they occur. Nunn (1987) observed that AIDS in Africa is predominantly spread by heterosexual intercourse, materno-fœtal transmission and blood transfusion. Other potential risks he gave included poorly sterilized needles and syringes, ritual scarification, circumcision and incisions.

Belief in traditional medicine has made widespread the practice of making incisions on various parts of the body. They are intended for protection, healing, deliverance, acquisition of magical powers and oath taking. Circumcision is however a more widespread practice as male circumcision dates back to the Biblical period. The importance of male-circumcision in modern-day medical practice cannot be overemphasized. Cancer of the cervix is found to be lower among women who are married to circumcised spouses than those married to men who were not circumcised (McMillen 1974). Cancer of the penis which is very rare has also been noted among uncircumcised males. However, in Nigeria both male and female children are circumcised, often with grave consequences. Female circumcision is done essentially to prevent promiscuity but it has generated a lot of controversy as female children bleed to death because in some cases, it is not only the hood of the clitoris that is removed but also the prepuce and the glans of the clitoris together with adjacent parts of the labia minora or the whole of them (Olafimihan 1993). Psychiatric disturbances such as anxiety reactions, chronic irritability, episodes of depression and even frank psychosis have been noted as complications that may arise from female circumcision. However, with the incursion of AIDS, other fears have arisen. Many children who have contracted AIDS through materno-fœtal transmission could transmit AIDS to other healthy children during circumcision especially if the procedure is not hygienically carried out.

The purpose of the research therefore was to investigate and analyse female attitudes and activities in relation to sexuality within the context of the family. The focus was on women because they are believed to bear the brunt of the AIDS epidemic and they are potentially a key force for stopping it (Nakajima 1989). It is hoped that this would provide a baseline guide in the choice of focus for educational and other intervention programs to contain AIDS.

Methodology

A three-part structured questionnaire designed in two languages (English and Yoruba) was used to collect the data for this survey.

The first section covered background information on respondents in terms of age, occupation, ethnic group, religion, marital status, number of children and age of husband.

The second section contained questions on sexual activities of men generally and of husbands in particular. They include respondents' attitudes to the following:

- (a) The possibility of a man limiting his sexual activities to the wife only.
- (b) Men's extramarital relations with women older than wives.
- (c) Extramarital relations with prostitutes.
- (d) Wife's interference in husband's extramarital affairs.
- (e) Son's sexual relations with girls and prostitutes.
- (f) A daughter commercializing sex.

Apart from respondents' attitudes to the factors listed above, the respondents' reaction in situations where these had happened were also obtained. Attempts were also made to find out among the respondents who worked in bars and brothels, their attitudes to the job and why they chose it.

The third section attempted to elicit responses on whether respondents circumcised both male and female children, where this was carried out and the level of hygiene maintained for the procedure. Apart from this, questions were asked on respondents' knowledge of occasions when incisions have been made on them or their children.

The study population

The survey was carried out in Badagry Local Government area of Lagos State with a predominantly Egun population. Lagos was, until recently, the administrative capital of both the Federal and Lagos State Government, and is still Nigeria's most important financial, business, commercial and industrial centre. Its population is heterogeneous and of the largest concentration in the whole country. The population combines urban, semi-urban and rural settings. The Badagry local government under investigation presents a combination of both rural and urban population (semi-urban). This is because in recent times, Badagry and its neighbouring villages have experienced an influx of mixed population from the cosmopolitan city of Lagos. These are essentially people who could not cope with the ever-rising cost of living in the city. For the investigation, Badagry town was selected and two other towns, Ikoga and Topo, were randomly picked in order to have a total picture of the Local Government area. For Badagry, the area under study included Ajara. Every street was first identified, and on each street every third house was enumerated and a questionnaire was given to any woman suspected to be above marriageable age to fill in if she was literate enough. Where such a woman was not, the questions were asked in the form of an interview and the appropriate answers supplied were filled in by the interviewer. Three hundred questionnaires were administered in Badagry and one hundred each at Topo and Ikoga.

One important observation made was the eagerness the generality of the women showed in discussing a matter so personal and yet so integral to their lives. Women were willing to ventilate feelings of frustration and marital woes.

Out of the 500 questionnaires, only the information retrieved from 496 respondents provided the data analysed and reported here.

Characteristics of respondents

Of the 496 respondents, 494 stated their religion: 86 per cent claimed to be Christians. In Badagry area, there is a strong allegiance to traditional gods, thus it is possible that many of these Christians practise traditional religion; 13.4 per cent claimed to be Muslims while only 0.2 per cent practised traditional religion and 0.4 had no religious affiliation.

Of the 495 who declared their ethnic groups, 63.4 per cent claimed to be Yoruba (it was difficult to know the percentage of them that were Egun); 2.2 per cent were Hausa, 24 per cent were Ibo and the remaining 10.3 per cent belonged to other ethnic groups.

Those who responded to the question on marital status numbered 478. Since the basis for being given the questionnaire was that the respondent was married or had children, it must be that those who claimed to be single had had children; 0.42 per cent belonged to this category. Those who claimed to be married were 94.8 per cent, divorced 1.3 per cent, separated 2.1 per cent, and widowed 1.5 per cent. It is possible that those who did not respond either were not married or had been divorced. Four hundred and ninety responded to the question on their educational status: 8.4 per cent had never been to school; 1.2 per cent had had Koranic education only; 0.6 per cent did not complete primary school and 6.7 per cent did, 2.3 per cent did not complete high school and 35.9 per cent did, 44.9 per cent claimed to have post-secondary education.

Their occupational status revealed that less than one per cent were farmers; 23.4 per cent were traders; 9.6 per cent were artisans; 48.4 per cent were civil servants; 6.3 per cent claimed to be professionals while 12 per cent were housewives.

The mean age for the women was 34 years, while that of their husbands was 43 years.

The number of children the respondents had varied. Only 2.8 per cent were married but without children. The mean number of children was three and 23.7 per cent of the respondents had between one and three children who were above 16 years of age, nine per cent had between four and six children who were above 16 years and only 0.2 per cent had more than six children in this category.

Survey findings

Attitudes to men's sexual activities

In Nigeria, cultural practices vary from one ethnic and religious group to another. Male sexual transgression has always been considered normal and even encouraged. The choice of more than one wife is not so condemned by the society even if the man involved is married under the Act, thus few people if any have been charged with bigamy in Nigeria. The case however is different for females who are expected to be chaste and be good wives and mothers. With this background therefore, the need for different sexual partners by both sexes was investigated: 55.7 per cent of the women believed women have as much need for different sexual partners as do men and 42.3 per cent felt otherwise. The implication of this is that if they are as biologically predisposed to the same sexual urge as men, they would go out to assuage the urge. Findings in parts of Africa which showed that extramarital relations by wives were the norm and these were emotionally accepted by husbands tend to support this assertion (Powdermaker 1962). However, Caldwell and Caldwell (1981) noted that the assertion would be true for women in certain societies but not true for others. They reported that in their study, 83 per cent of Yoruba wives said they did not miss sex at all during the years of postpartum sexual abstinence. It could be that such women had undergone circumcision in infancy which tends to reduce libido and therefore could have made sex less appealing. This may also be responsible for the fact that only a small percentage of women ever achieved orgasm during sexual encounters as reported by Masters, Johnson and Kolodny (1985). If this is the case then these women would have the tendency to see marital sex as a conjugal duty for procreation rather than for pleasure.

Apart from satisfying the sexual drive, other reasons have been advanced for women's extramarital affairs which include the need for both emotional and financial security especially where the spouse is old and not providing, or where the husband is away most of the time. In the rural areas, it has been reported by Orubuloye et al. (1991) that women keep long-known partners that are themselves sexually careful and selective probably because the towns or villages are small and nearly every one knows the other person. However, in the

cities, clandestine sexual relations with different partners could go unnoticed. In fact, many rural women who travel to cities for business have been found to engage in sexual relations with other men for various purposes (Ososanya and Brieger 1994).

Another attitude investigated was whether the women felt men need more than one wife: 87.4 per cent of the women believed that men do not generally require more than one wife and the same respondents were also those who would prefer to be the only wife. It is also interesting to note that the 12.4 per cent who agreed that men should have more than one wife said they would not like to be the only wife. This can however be understood when it is observed that 84.2 per cent claimed to be in monogamous unions while the remainder were either in consensual or polygynous unions; 11.1 per cent of the women in the study reported that they were one of two wives; 3.2 per cent indicated they had two co-wives while 0.6 per cent had three co-wives and 0.8 per cent had four. More often than not, there is freedom for extramarital relations when a woman has co-wives. This is because of the economic burden imposed by polygyny on the family: individual wives are forced to fend for themselves and their children such that they have to provide at least 90 per cent of the requirements of themselves and their children.

When asked if they believed their husbands went after other women outside the marriage, 67.4 per cent of them said their husbands did not while 32.6 per cent believed they did. Specifically too, 4.2 per cent of the women believed their husbands were patronizing prostitutes. Many Nigerian men have been known to patronize prostitutes and bar girls. Prostitutes are believed to be single girls or women separated from their husbands who make prostitution their profession. On the other hand, there are girls who are literate, even students, who work the streets soliciting for male clients. In urban areas where polygyny is a little difficult, men have gone for a variant of it which Montgomery (1991) described as surreptitious polygyny in the form of the 'outside wife' and the 'deuxième bureau'. Elite men in urban areas, though educated and successful, are believed to practise this variant of polygyny without the knowledge of their equally well-educated wives.

The 'outside wives' of the middle class are said to be young in most cases, relatively well educated, able to converse in English and French, in white-collar employment, and given to enjoying the good life which includes payment for clothes, rent and some money to spend. It also provides an avenue for gaining entrance into the society (Caldwell, Caldwell and Quiggin 1989).

It is generally believed that men cannot live without these women and Temne wives in Ghana preferred not to know the identity of such other women but feel strongly there should be only one so as to prevent the spread of diseases (Dorjahn 1958). It is therefore possible that many of these women who claimed to be in monogamous unions share their husbands with outside wives.

When asked if they felt most husbands have relations with women older than their wives, 39.5 per cent of the women agreed that this usually happened. One of the factors that could be responsible for this is the age disparity between most men and their wives, especially those in polygynous unions. It is probable that some of these men would prefer women who are more experienced and therefore provide more sexual satisfaction. Orubuloye et al. (1991) suggested that divorced women are often preferred. Some men could also prefer women who are in stable unions for security reasons and to avoid unnecessary liability and financial drain that could arise when a young single girl is involved. Since extramarital affairs by wives are tolerated if they are discreet, even secret and not flaunted in such a way as to cause the husband embarrassment, it therefore means that many of these women would be available and patronized. The elite males of East African cities were found to prefer these to bar girls for fear of contracting diseases (Obbo 1987).

When asked if a woman has the right to know and approve of her husband's sexual activities outside marriage, 20.6 per cent of the women believed this was right while 79.4 per cent disagreed. Also 81.5 per cent believed a wife should interfere if her husband went after other women; only 18.5 per cent felt this would not be proper. It is very unlikely that the educated ones would not want to know, and approve of their husband's sexual activities outside the marriage, even though traditionally, a woman is expected to be overtly deferential towards her husband (Adeokun 1991). Dinan (1983), reporting the view of white-collar single women in Accra regarding marriage, said that they believed it was hopeless expecting husbands to be faithful although they were highly critical and resentful of the adulterous behaviour of the men. This is probably why most women believed the issue of approving their husbands' extramarital activities does not arise.

Female education and Christian conversion have been cited as the major forces countering polygyny. Many educated women now share with their husbands the provider role and are therefore no longer content with staying in the background. They would like to share in the everyday activity of their husbands. This was the dilemma faced by the men who opted for Christian marriage during the colonial era in Lagos. According to Mann (1985), the elite women regarded Christian marriages as the best because the church upheld the sanctity of marriage. The women therefore would opt reluctantly for other types of marriage only if they had some blot on their reputation that made them unattractive as Christian wives or if they were widowed or separated. The Christian marriage thus has no place for polygyny and so the elite men, after much debate and frustrations, started having outside wives. This impression must have been in the minds of the participants in a focus group who revealed that women have resigned themselves to fate, believing that no matter what they do, Nigerian men will uphold the culture of polygyny (Adegbola 1991).

Reasons for men's sexual behaviour from the woman's viewpoint

The women in this study were asked for the reasons why men go after other women, their reactions and also their husbands' responses to their reactions.

Various reasons have been advanced by the women to explain men's wish for multiple sex partners. It would appear the women did not wish to look at the issue as being culturally induced and approved. Only a small fraction (about one-thirteenth) of the respondents felt more wives would provide more farm-hands. This to some extent could be justified in a predominantly agricultural economy where labour rather than physical or human capital is the principal economic resource (Montgomery 1991). The Lagos State terrain is mostly sandy and cannot sustain the type of agricultural enterprise being considered, and in any case, labour was more a motivation in the past than now and in the rural, not urban, areas.

Another reason proffered was that men's sexual appetite is insatiable and thus, through lack of self control, they will always look out for enjoyment and variation. This was the most popular reason given by the women. This view seems to be reinforced by the assumption noted by Orubuloye et al. (1991) that monogamous men and most polygynous men must have sexual relations with women other than their wives. The prescribed two or three years female abstinence during the postpartum period has been implicated as a major motivating factor for men's extramarital sexual behaviour. Some men however do not seem to share this view. A male participant in a focus group discussion noted that disciplined men abstain from sexual relations if there are no other wives to turn to since not all men are in polygynous unions (Adegbola 1991). It must be emphasized however that the availability of family planning methods has made some of these old practices obsolete. A woman can now space her children the way she likes. Besides, men do have access to their wives even during pregnancy: total abstinence during this period has not been medically recommended except in situations where

the woman has a history of miscarriages or other problems. Sexual intimacy during the first and third trimesters is however not encouraged.

Some of the women in the study also believed that the company a man keeps influences him. Some husbands are believed to have been influenced by their peers (7.1 per cent) to patronize prostitutes, while 4.6 per cent of respondents believed this was the case in their husbands' taking other women. This view has been confirmed in other studies. Evans-Pritchard's writing about the Nuer showed male solidarity and peer-group pressure displayed by the men in their readiness to identify with an adulterer rather than the aggrieved husband who has been made a 'cuckold' (Douglas 1976).

Men could also start extramarital relations to spite a straying wife. Infidelity on the part of the woman is no longer strange and from Ososanya and Brieger's (1994) findings, could be initiated by accepting a 'dash' from a male customer, where buying and selling is involved, or accepting lifts in cars. It is believed therefore that a woman's expectation of monetary or material gain is a crucial factor in starting a relationship with a man.

Some of the women believed some category of men engage in extramarital relations to boost their ego. It would appear the men in this category have low self-esteem and perhaps feel inadequate and lack confidence in themselves. They therefore would require relations like this to provide them with the required self confidence (Dintiman and Greenberg 1989).

For some men however, no apparent reason could be found for the extramarital pursuits.

Reactions to men's sexual activity

About 33 per cent of the women said their husbands go after other women. The reactions of these women to their husbands are presented here.

Reactions were found to vary. The majority of those whose husbands were straying claimed they did nothing (53.2 per cent). After further probing, it was found that they reacted in this way to avoid quarrels. In fact, 17.9 per cent of the men were reported to pick quarrels with their wives if they reacted negatively. Other studies in West Africa have shown that women seldom protest about their husband's extramarital relations (Caldwell and Caldwell 1981). Although none of the women in this category mentioned the idea of getting square with their husbands by selecting their own male friends, the motivation for this seems to have been provided by a man who beats his wife for protesting against his extramarital affairs. Indeed, rebellious women have been known to find occasion to take revenge on their husbands by also having an extramarital relationship. Even in polygynous unions, women who felt cheated that their husband brought a new wife home or who suspected there were other sexual partners outside the marriage were found to seek out other sexual partners of their own (Ososanya and Brieger 1994). In this situation therefore silence could be golden. However, about 4.4 per cent of the women would not advise women to engage in extramarital relations because it would make them age faster. This category of women is not likely to have extramarital affairs.

A few of the women (1.1 per cent) said they had threatened their husbands with divorce if their extramarital relations were repeated. Most researchers like Caldwell et al. (1989) have shown that divorce has not been a common solution for adultery, except that of wives where it is flagrantly provocative and repeated. In Nigeria, however, the colonial era, which highlighted the rights of women, and the growing Christian influence which emphasized only one legal wife, led to a substantial increase in female-initiated divorce (Caldwell, Caldwell and Orubuloye 1990). Divorce cases are steadily increasing while rather than get married, many more women are choosing single motherhood. All these factors have implications for the containment of AIDS.

Other women who do not wish to sue for divorce, claimed they denied their husbands sex as a punishment: 5.6 per cent of them were involved in this while about one-third of the women preferred to express their disgust by getting angry and quarrelling with their husbands. They said they accused their spouse of dishonesty, immorality and lack of self-control. Some others claimed to have pleaded with their husbands and reminded them of various diseases that could be contracted including venereal diseases and AIDS and the likelihood of premature death. It is difficult to know the particular results of each of these strategies. However, 42.3 per cent claimed their husbands promised to turn over a new leaf, 35.9 per cent were indifferent while 3.8 per cent insisted they could take care of themselves.

Nevertheless, 7.5 per cent of the women were sure their husbands would never engage in extramarital relations; the reason given was that their husbands feared God. Studies conducted in parts of Africa have now shown much difference between the sexual behaviour of regular church-goers and that of the general population, except a study by Southwold (1973) carried out among the Baganda people. Among these people, those who have really internalized Christian values were said to be devout and somewhat more chaste. This difference could be explained by the fact that a man or woman who has really internalized Christian values would believe in the sanctity of marriage.

Respondents displayed a general awareness and fear of AIDS: 70 per cent said AIDS is deadly and another 29 per cent that it is incurable. However, only 64 per cent believed this could prevent their husbands from carrying on with extramarital relations while others could be stopped by the fear of illegitimate children. The majority of the women were very optimistic that when husbands are given adequate love, care and attention; they surely will reciprocate positively and stay home.

Women's attitudes to sexual behaviour in their children

Traditionally, in sub-Saharan Africa, arranged marriages were common. Men, who were not expected to be chaste, did not marry until their late twenties or beyond, by which time they had set a life pattern of sexual adventures. However, a great value was placed on female chastity.

The situation has however changed tremendously in the past few decades. Girls are no longer married off to prospective husbands very early in life, but in the course of going to school or learning a trade their marriage is delayed. In most West African studies therefore, mention has been made of the sexual freedom of girls with little worry about pregnancy (Caldwell et al. 1989). In this study, parents' attitudes to sexuality in their children who were above 16 years were investigated.

Only 25.8 per cent of respondents had children aged over 16 years. Of these, 77.4 per cent reported their sons were indulging in sexual relations with girls. It was not possible to determine the ages of these male children, but they must be varied considering the fact that about 2.2 per cent of the women were over 55 years old. Also 8.9 per cent had cause to believe their sons were patronizing prostitutes. As in any city, prostitution is a flourishing business in Lagos and environs, and bars and brothels are found everywhere. Their availability must have provided enough motivation for young men to frequent them since in the long run this might prove more economical than having a steady girl friend.

When the women were asked what their reaction was, only about 38.5 per cent of the 48 who said 'yes' condemned the son who had sexual relations with girls and the remaining 62.5 per cent said they advised their sons by telling them the health implications and the need for caution. However 24.4 per cent of the women would not say anything since they did not see anything wrong in their sons' behaviour. All the women who reported that their sons went after prostitutes said they expressed sadness and warned them about the link between their

behaviour and a variety of diseases and even premature death. When all the women were asked what they would do if they were told their sons had been frequenting brothels, 80.4 per cent said their sadness would know no bounds; 11.5 per cent would feel ashamed, baffled and angry; 5.2 per cent would feel proud of the boy while 1.2 per cent believed their son would never do a thing like this.

Most of the women (83.3 per cent) were of the opinion that a mother should control the sexual activities of her son although in reality only 73.1 per cent of them said they could. The need to control the son's sexual activities is essentially to prevent unwanted pregnancy (69 per cent) and fear of diseases (33.3 per cent). Other women who did not share this view saw sexual indulgence as a proof of manhood (70 per cent) and evidence of sociability (30 per cent). Even if some mothers would want to control their sons, 33.3 per cent did not live with their sons, while for 66.7 per cent, 'civilization' would be a force to contend with. It is not surprising therefore that some of the women looked to their husbands to take the necessary action against an erring son. Peer influence was believed to be responsible for their sons' patronage of prostitutes while 66.7 per cent believed their boys to be self-willed. Those whose children did not involve themselves in this behaviour said their children were decent (73.5 per cent) and did not keep bad company (26.5 per cent).

Although 35 per cent of the fathers of those who are involved with prostitutes considered the behaviour immoral, only 5 per cent scolded their children. In fact, 35 per cent of the fathers would prefer to advise their sons to protect themselves.

A lot of inconsistencies could be detected in the women's stand on their daughters' engaging in prostitution. Initially, 81.6 per cent of the women said they would be sad to know that their daughters had taken to prostitution; 7.3 per cent said they would be baffled while only 1.3 per cent expressed delight. Although 88.4 per cent reported that they would warn such a girl seriously and 6.6 per cent even threatened to denounce her, if the same girl obtained wealth through prostitution and was ready to start a business in the village, 45.9 per cent would feel proud of her, while only 39.7 per cent would still remain sad. It is interesting to note that 46.7 per cent of these women still believed such a girl would make a good marriage. Perhaps this may be a general attitude along the West Coast of Africa. Caldwell (1969) reported that although rural families in Ghana were disturbed by what their single daughters would do if they went to Accra, none of these rejected remittances these girls sent them or even refused to have the girls back. Prostitutes are never treated as outcasts in their villages. The lenient attitude of some of these women to prostitution may be due to the fact that 3.5 per cent are currently working in a bar or hotel; most of these, 64.3 per cent, could not get any other job while 7.1 per cent do it because they need money badly; some are doing the job for the sake of doing something.

Male and female circumcision

The women's attitudes to male and female circumcision were generally fair; 98.6 per cent had circumcised their male children and 93.8 per cent, their female children. It is possible that those who gave negative replies did not have children of their own. The reasons given were cultural 83.9 per cent, Biblical 10.7 per cent and sexual performance 5.4 per cent; and 5.9 per cent reported they circumcised their female children so that their children's children would live. The general belief is that the baby whose head touches the hood of the clitoris, present in uncircumcised women, will die.

Only 8.8 per cent of the women circumcised their male children themselves and 11.5 per cent their female children. Others patronized a Western trained doctor (55 per cent); nurses or dispensary (10 per cent); traditional doctor (25 per cent); or traditional birth attendant (5 per cent); for females the same group of experts consulted for the male were also consulted and in

almost the same pattern. About half of the women had their sons circumcised in the hospital, 22.4 per cent in their own residence, and 20.9 per cent went to a traditional specialist's home. The pattern observed in female circumcision was similar to this. Invariably those who had their children circumcised in a proper hospital setting were provided with appropriate tools and clean environment. Others reported the use of a knife (16.7 per cent) and scissors (7.1 per cent). Circumcision instruments were merely rinsed in 17.5 per cent of cases, washed with soap by 17.5 per cent and sterilized in 60 per cent of cases. Exposure to AIDS infection is increased if the instruments used are not properly cleaned and disinfected.

Incisions

Only 6.5 per cent of the women reported that incisions were made on their children on certain occasions, especially during a local festival (17.4 per cent); admission to school (8.7 per cent); when they were leaving for a new environment (4.3 per cent) or as advised by a diviner (13.5 per cent). When performed during a festival, which appears to be the major reason for it, it is to link the child with the ancestors. However, others use it as a protective measure.

Another situation where incisions are made on the body is when an oath is being taken. Half of the women claimed they have heard of this before; 93 per cent claimed it is usually to seal a covenant and seven per cent believed it was to avoid a breach of trust. Only 5.4 per cent had done this before and it was essentially to seal a covenant while about one third of the few who claimed they had done it before said they were forced to do so.

Implications and conclusion

Man is not just social but also biological. Man's sexual behaviour is therefore complex. To define the inducement factors for sexual relations in social terms alone may be difficult. Nevertheless some of the social factors have been investigated in this study and their implications discussed.

Prominent among the factors are the following:

- (a) The pleasure in having a variety of sexual experience by both men and women.
- (b) Material rewards whether formal as in prostitution or informal as relating to those accruing from a steady relationship.
- (c) Use of sexual relations outside the home as an emotional release to get square with spouses.
- (d) The practice of circumcision especially when carried out unhygienically outside the hospital.

The implications of the above are that, unlike in the developed countries where the incidence of AIDS is elevated in some sub-populations when compared to the population mean, for example homosexuals and intravenous drug users, in Nigeria such high-risk sub-populations do not exist. The risk behaviour and practices are not confined to distinct social groups. Thus the incidence of AIDS may vary only slightly across the population.

With materno-foetal transmission and the practice of circumcision, AIDS is likely to spread first among infants. Heterosexual intercourse and sex commercialization among sexually active adults will also enhance the spread of AIDS in the teenage and adult populations. Thus we have a situation where AIDS can spread laterally and vertically involving virtually every stratum of the society. It is in view of the above that the following conclusions are reached.

The women are generally aware of the connection between sexual relations and sexually transmitted diseases and AIDS and they are afraid of contracting them. There is therefore the need to intensify the public education campaign against AIDS with particular emphasis on safer sex through the use of condoms. Self protection by the women is required since sexual

permissiveness of men is socially acceptable. Although it is generally believed that condoms could prevent AIDS and other sexually transmitted diseases especially when used with the spermicide Monoxynol - 9 (Whyte 1990), attitudes to condoms have not been favourable. They are said to take away the pleasure from sex through their lack of sensitivity. Therefore there could be a resistance against condoms in such a pleasure-seeking population as that of Nigeria. It would be necessary to develop special strategies to motivate people to accept condoms.

The men also should be made a target for AIDS education programs. This could be carried out at the community level which could be the neighbourhood, professional group, or the smaller support network composed of family or friends. All men should be reached and encouraged to use condoms if they indulge in high-risk behaviour.

Although as the women observed, the fear of AIDS might not deter men from extramarital relations, most women in the study were sure that love, care and affection would make many men stay at home. There is the need therefore to strengthen family ties and emphasize the sanctity of marriage. Women need to be provided with both the cognitive and behavioural skills required for making the home happy and inviting so that their husbands can be encouraged to be faithful. Couples should know where to turn, apart from the traditional line of consultation for guidance and assistance in handling family problems, such as marriage counsellors.

The introduction of the Family Support Programme by the government could not have come at a better time. Emphasis should be on consolidating the family and encouraging parents to take the art of child-rearing seriously so that children can grow up in a loving environment, as this will reduce the number of street children and juvenile prostitutes. Vulnerable young children and teenagers should be taught the skills needed to refuse sex or negotiate for safer sex.

Many women also reported that their husbands would never engage in extramarital relations because they feared God. This agrees with the observation of Southwold (1973) that those who have internalized Christian values were more chaste. It would appear that religious faith has a role to play. The religious bodies, especially the church, must assist in stamping out AIDS by promoting those values that promote the sanctity of marriage and chastity.

The Better Life Programme had laudable objectives as it aimed at improving the status of rural women economically, socially and politically. Unfortunately, it did not yield much because of the improper way it was administered. However, the objectives could be pursued vigorously so that the self-esteem of the women and the economic status would improve. This type of forum would also bring about a stronger form of cohesion that would be required for teaching appropriate knowledge and skills in fighting against AIDS.

Schools should be involved by providing not only appropriate knowledge but also skills and attitudes that permit effective communication, responsible decision-making and the development of healthy human relationships. This can be achieved through the school health education programs. It is advisable that such education should commence before the young have their first sexual experience so that they can learn to protect themselves and others from infection. Over 300,000 teachers in rural areas have been trained for this purpose in Thailand to handle school AIDS programs in that country (*Global News* 1992).

Finally, the fight against AIDS requires political will and commitment by everyone. A 1992 edition of *Global News* carried a caption 'Nigeria declares war on AIDS'; AIDS should not be fought on the pages of foreign newspapers. Public education on AIDS has been sporadic and ill-planned in Nigeria; in Thailand, AIDS messages are aired for a minute and a half every hour of the day including prime-time. Advertising agencies and movie producers have volunteered to help with the production of messages (*Global News* 1992). Nigeria has a greater capacity to do this and the need for it is greater now than ever before.

There is need for a review of the electronic media, especially the entertainment programs. Plays that do not promote the sanctity of marriage or that portray promiscuity as part of the necessities of life should be banned. The media must be made to feature regular programs that provide scientific facts about and skills for preventing AIDS.

Circumcision of female children should be discouraged through the mass media and other interpersonal communication channels. Hospitals should be made to take the responsibility for male circumcision to ensure that hygienic procedures are observed in performing it. It is believed all these would assist in containing AIDS in Nigeria.

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