Network

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Family Planning and STIs

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News Briefs

Male Contraceptive Advances

An experimental male contraceptive has been successful in a small trial among 66 men in Scotland and China. Sperm production was dramatically suppressed among men who took a daily desogestrel-containing pill for six months while receiving testosterone by means of implants. Desogestrel is a progestin used in female oral contraceptives.

Supported by the British Department for International Development and the United Kingdom Medical Research Council, the study compared sperm production suppression when men took 150 mg versus 300 mg desogestrel daily after having two pellets containing a total of 400 mg of testosterone implanted under abdominal skin. The high-dose pill suppressed sperm production in all of the 26 men who took it. The low-dose pill was somewhat less effective: 85 percent and 61 percent, respectively, of Scottish and Chinese men, became azoospermic (no sperm in semen).

When men stopped taking desogestrel, their sperm concentrations returned to normal. Among all men throughout the study, levels of the male sex hormone testosterone were normal.

Eleven men who became azoospermic during treatment (six after taking 150 mg desogestrel and five after taking 300 mg desogestrel) continued taking the daily pill at the original dose for another six months. Testosterone pellets were replaced every three months (testosterone is ineffective when taken orally). All 11 men remained azoospermic and their partners did not become pregnant.

Scientists at the University of Edinburgh and the Institute of Family Planning Technical Instruction in Shanghai conducted the study in collaboration with Organon, a Netherlands-based pharmaceutical unit of Akzo Nobel. The scientists reported their findings in September 2000 at a conference of the International Federation of Gynecology and Obstetrics held in Washington.

Herpes Vaccine Shows Promise

An experimental vaccine against genital herpes has become the first vaccine to offer some protection against the viral disease, but with significant limitations.

Developed by the pharmaceutical company SmithKline Beecham, the vaccine does not protect men. Among women, it only works among those who have never been infected with herpes simplex virus-1 (HSV-1), the virus that typically causes fever blisters and cold sores. Also, some women never infected with HSV-1 still acquired genital herpes (HSV-2) during clinical trials, but without symptoms, according to Dr. Spotswood Spruance of the University of Utah School of Medicine, who reported findings from two clinical trials at the Interscience Conference on Antimicrobial Agents and Chemotherapy held in October 2000 in Toronto.

Herpes is a common sexually transmitted infection and has no cure. If further testing proves successful and a vaccine is approved for use, the vaccine might be offered to adolescent women who have never been infected by either herpes virus strain. An overall reduction in herpes infections could result, since protecting women would gradually reduce infections among men.

About 3,500 participants in Australia, Canada, Italy, New Zealand and the United States participated in the trials. Over six months, study participants received three injections of either the vaccine or a placebo and were monitored for 19 months.

Two Contraceptives Approved in U.S.

The levonorgestrel intrauterine system and a monthly injectable have been approved by the U.S. Food and Drug Administration for use in the United States. The monthly injectable, commercially known as Lunelle, uses a combination of estrogen and progestin. The intrauterine contraceptive, sold as Mirena in some countries, is a T-shaped apparatus resembling an intrauterine device that is inserted into the uterus.

The intrauterine system, approved in December 2000, provides a steady low dose of the progestin levonorgestrel directly to the lining of the uterus. The contraceptive is as effective as female sterilization and can be used for five years. Once the contraceptive is removed, fertility returns rapidly. The device offers noncontraceptive benefits, including a substantial decrease in menstrual blood loss and pain.

About 2 million women in more than a dozen countries have used the device, according to the manufacturer, Schering AG of Germany. It is marketed under the name Mirena, except in Nordic countries, where the brand name is Levonova. Berlex Laboratories, Inc., the U.S. subsidiary of Schering AG, will market Mirena in the United States under a license from the New York-based Population Council, a developer of the device.

The monthly injectable, approved in October 2000, reduces menstrual bleeding changes compared with progestin-only injectables like depot-medroxyprogesterone acetate (DMPA) — commercially sold as Depo-Provera. DMPA is injected once every three months. Many women who use combined monthly injectables continue to have regular menstrual bleeding.

A study involving some 1,000 women, which compared the efficacy of Lunelle to an oral contraceptive, found no unintended pregnancies after 15 cycles of injectable use. Side effects are similar to those associated with the combined oral contraceptive pill, including headaches, weight gain, breast tenderness, irregular or prolonged bleeding and acne. Women who discontinue use of Lunelle return to full fertility in about four months, as compared to within a month for the pill.

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A couple enjoys the Nile River in Cairo in a Panos Pictures photograph by Dominic Dibbs.

Many Clients Need Dual Protection

Ways to prevent pregnancy and STIs include using condoms with another method or condoms alone.

Many family planning clients need protection not only against pregnancy but against HIV and other sexually transmitted infections (STIs). They need dual protection. The safest form of dual protection is mutual monogamy between noninfected partners using effective contraception.

For other sexually active individuals, dual protection can be achieved in one of two ways:

- Two contraceptive methods can be used (one highly effective method for pregnancy prevention and the male or female condom for STI prevention).
- A condom can be used for both purposes.

Contraceptives offering the best pregnancy prevention during typical use — sterilization, injectables, implants and intrauterine devices (IUDs) — do not protect against STIs. Thus, simultaneous condom use for disease prevention is recommended. Condoms used alone can prevent both STIs and pregnancy, if used correctly and consistently with every high risk act of intercourse, but are associated with relatively higher pregnancy rates during typical use because they are often used incorrectly or inconsistently.

Much remains to be learned about the characteristics of couples who choose either approach to dual protection. "Identifying such characteristics brings an awareness of potential barriers to dual protection, which is important during client counseling," says Dr. Thulani Magwali, an obstetrician/gynecologist at the University of Zimbabwe. Under an FHI fellowship, Dr. Magwali is conducting a study of the prevalence and consistency of use among 900 family planning clients in Zimbabwe of two contraceptive methods versus use of just male or female condoms for protection against pregnancy and disease. His study compares use of the two approaches with a variety of client characteristics, such as level of education, marital status, age and number of partners.

Which of the two dual protection approaches should providers recommend? Data comparing the approaches are limited and conflicting. Experts' opinions vary, although most agree that no one approach is appropriate for everyone everywhere. Thus, providers "should tailor counseling messages to the individual client's needs and motivations," says Dr. Willard Cates, Jr., president of FHI and an STI expert. "Whether the major goal is to prevent pregnancy, infection or both undoubtedly will influence selection of an approach.

"A key factor in recommending an approach is the client's likelihood of being exposed to infection, which may be assessed by the STI prevalence in the community and by the client's specific risk behaviors. If exposure is likely, particularly to the more serious infections such as HIV, condom use should be recommended.

"Also, the consequences of unintended pregnancy versus infection in an individual's life must be considered," says Dr. Cates.

"For example, a woman who very much wants children but simply wishes to delay pregnancy probably should be counseled to use condoms alone. She might be more likely to become pregnant than if she used a condom along with a highly effective contraceptive method. But sexual partners of women using highly effective contraception may not use condoms as consistently as partners of women using less effective contraception. As a result, the woman may acquire an STI. In this case, any pregnancy resulting from condom use alone probably would be more desirable than an STI infection that could leave her infertile."

On the other hand, Dr. Cates says, in cases where unintended pregnancy is the greater concern, emphasizing the two-method approach as a first option may be appropriate, especially if emergency contraception or safe abortion are inaccessible or unaffordable.

"Women using a highly effective contraceptive method could be counseled on when or with whom concurrent condom use is most important: with new partners, with partners who have other partners, and with partners who have not been tested for STIs," he says. "Particularly encouraging women to use condoms during these high-risk situations may yield better adherence and fewer infections than advising use during all coital acts. Otherwise, the notion of using condoms at every sexual encounter may seem so unrealistic or unacceptable that couples will not initiate use or will fail to use them when they are most needed."

Dual method use

Simultaneous use of two methods, or dual method use, may seem to be an ideal way to prevent both pregnancy and STIs. But there are theoretical and practical concerns about this approach.

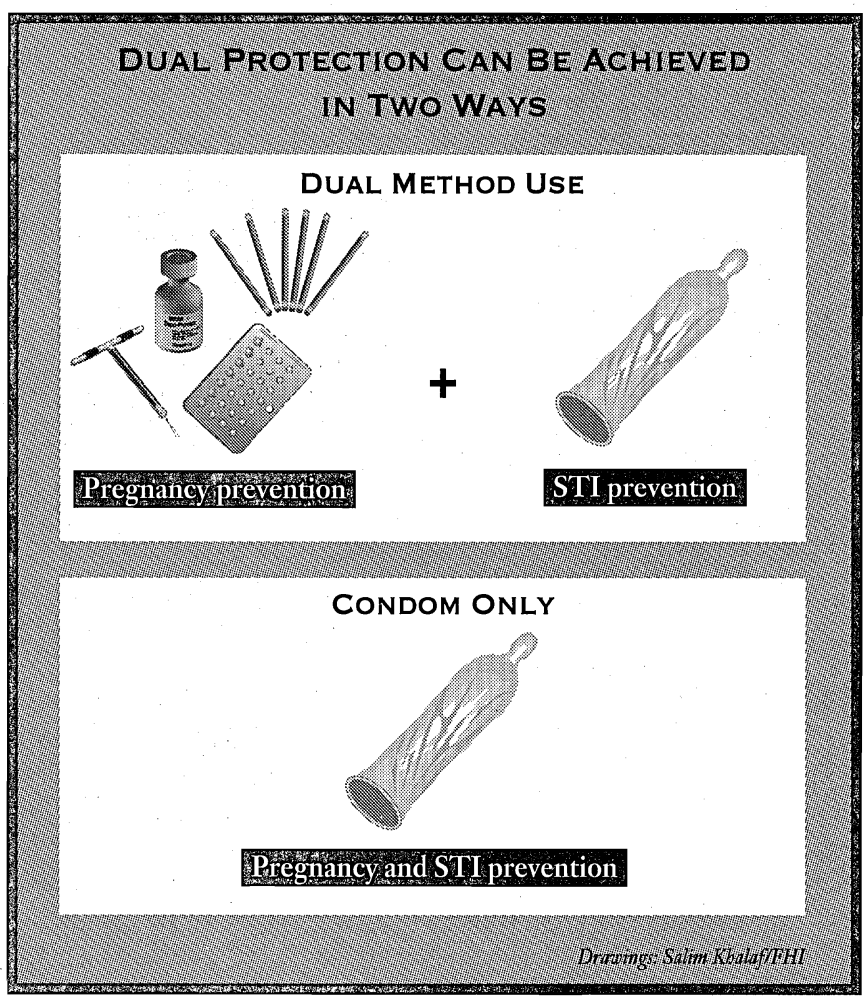
For example, the risk of pregnancy varies during the menstrual cycle, but the risk of STI infection may be relatively constant, thus justifying the use of disease-preventing condoms as a primary method. The probability of an infected person transmitting gonorrhea or syphilis is about 50 percent for each coital act with an uninfected person.[1] (The probability of acquiring chlamydia or viral STIs, especially HIV, during each coital act may be somewhat lower.[2]) A woman's risk of acquiring gonorrhea from an infected partner is about double that of her becoming pregnant during a single act of unprotected sexual intercourse, even when she is most fertile.

Many people will not use two methods simultaneously, given that many dislike using even one contraceptive method. Consequently, one of the two methods may be abandoned or, at best, used inconsistently, while the other is favored.

Several studies have found that the more effective the contraceptive method, the lower the level of consistent condom use among couples using condoms and another method.[3] Only about a fifth of participants in various studies examining dual method use reported using condoms, even when counseled to do so in some cases.[4] Only 13 percent of some 900 family planning clients surveyed by FHI in collaboration with the Family Planning Association of Kenya reported using a condom for disease protection in conjunction with use of a non-barrier method during the previous month, even though about 16 percent of the women had been diagnosed with at least one STI in the previous year and more than one-third considered themselves at risk of an STI. Common reasons for not using condoms included use of another method for pregnancy prevention, partner refusal to use a condom and desire for natural sex. However, women who reported that they had ever talked with their partner about the risk of STIs and ways to avoid them were over 13 times more likely to use two methods for dual protection.[5]

A similar study in Jamaica found that partner communication about STI protection was a significant predictor of dual method use.[6] And, in a U.S. study among 1,729 men in which 17 percent of sexually active males reported dual method use, condom use was associated with talking with the partner about contraception and condoms.[7]

Other arguments against the dual method approach are that promoting condoms plus another method undermines



the message that condoms can be good contraceptives, and promoting them only for disease prevention stigmatizes them as a method associated with promiscuity. This can make it more difficult for women to negotiate condom use with their partners. In focus group discussions involving 30 African-American men and women, participants recognized the need for dual protection but rarely used condoms. Partners generally distrusted each other, and requests for condom use would have further aroused suspicions of infidelity.[8] Many women may be unwilling to ask their regular partner to use condoms because they fear violence or abandonment.

Finally, using two methods may not be financially or logistically feasible, either for providers or their clients.

Condoms alone

The World Health Organization, Joint United Nations Programme on HIV/AIDS and United Nations Population Fund recently issued a joint policy statement emphasizing that the condom, when used correctly and consistently, can serve a dual role. The statement notes that family planning counseling "must include the understanding that while most methods (e.g., hormonal methods of contraception, IUDs and sterilization) are all highly effective against pregnancy, they offer no protection" against HIV or other STIs. "Informed choice must also include the acknowledgement that the condom, when used correctly and consistently, not only prevents [STIs] but can also be a legitimate and highly effective contraceptive."[9] That condoms can provide effective contraception is evident in Japan where condoms traditionally have been the primary contraceptive method and unintended pregnancy rates have been low.

However, condom use alone for dual protection also has drawbacks. Because they tend to be used inconsistently, condoms provide less effective protection against pregnancy than sterilization, hormonal methods or IUDs. Within the first year of typical use of the male or female condom, 14 percent of women relying on male condoms and 21 percent of women using the female condom experience an unintended pregnancy.[10]

In a study of providers' beliefs and attitudes about dual protection, the majority of 34 counselors at family planning clinics in New York were concerned that promoting either male or female condoms instead of hormonal methods would increase their clients' risk of pregnancy. Half reported that they would never recommend the female condom as the primary contraceptive method and 63 percent said they would never recommend the male condom for this purpose.[11]

Nevertheless, says Dr. Cates, "Family planning programs must overcome their hesitancy to counsel clients about the need for more correct and consistent use of condoms for both pregnancy and STI protection." Only 3 percent and 5 percent of women experience an unintended pregnancy within the first year of correct and consistent (perfect) use of the male condom or female condom, respectively.[12] "Moreover, making condoms physically available in the clinic setting should be an important component of all dual protection programs."

A public service advertisement in Nepal promotes condom use.

Correct and consistent use of male latex condoms is the most effective way of preventing infection among sexually active people who are at risk. The ability of the female condom to prevent transmission of HIV and other STIs has not been adequately studied, but experts believe the device is promising.

Making female condoms more accessible may increase the likelihood that couples will protect themselves against STIs with either a male or female condom. In Thailand, some 250 commercial sex workers given both female and male condoms used some form of condom more often and had a slightly lower incidence of STIs than did some 250 commercial sex workers given only male condoms.[13] Similarly, in a study of some 900 sexually active U.S. women given both female and male condoms, the female condom appeared to allow inconsistent users of the male condoms to achieve high protection rates by mixing condom types over time.[14] High-risk couples in Zambia given both female and male condoms also tended to have a higher proportion of protected sexual acts than couples who only used the male condom.[15]

The idea that condoms can protect against both disease and pregnancy might be advantageous for those women whose partners have traditionally associated condoms with disease prevention and, thus, infidelity. Such women might be able to negotiate condom use for contraception while simultaneously achieving the important goal of protecting themselves from STI infection.

However, advising a client to negotiate condom use strictly for contraception, as a subterfuge for STI protection, may be unwise if she is using no other method. A woman who becomes pregnant as a result of condom failure would no longer have a pretext for negotiating condom use. Also, a woman would not be able to negotiate condom use during menstruation or after menopause.

— Kim Best

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RICHARD LORD

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HIV-positive Women Have Different Needs

Ideally, family planning counseling should include information about HIV health consequences.

Pregnancy in an HIV-positive woman often carries serious consequences. Without treatment, about a third of HIV-infected mothers pass the virus to their newborns. Many of these children eventually sicken and die of AIDS. Worldwide, some 3.8 million children younger than 15 years old have already died in this way.[1]

Some HIV-positive women choose to conceive, despite the chances of a poor pregnancy outcome. Other sexually active, HIV-positive women want contraception. Providers need to understand how to counsel and serve HIV-positive women, and providers should know that some HIV-positive women will not reveal to them that they are infected.

In settings where HIV prevalence is high, family planning providers should discuss with clients how HIV could affect family health. Ideally, contraceptive counseling should include a description of HIV risk factors and an evaluation of the client's risk of infection. Some programs may also be able to offer HIV testing to women at high risk for HIV infection.[2]

Desire for children

Most HIV-infected women do not know their HIV status before they conceive. Some may only find it out when they receive antenatal services, if testing is available. Still, other HIV-infected women know their HIV status before they conceive. Sixteen of 52 HIV-positive women interviewed in Zimbabwe, for example, became pregnant after their diagnosis, with seven of the 16 pregnancies desired.[3]

All seven women with desired pregnancies very much wanted to have a child and their pregnancy histories reveal that some were prepared to risk their health to have a child who would survive. Unfortunately, only one had a healthy baby. Such grim pregnancy outcomes for HIV-positive women are not uncommon in Zimbabwe.

"In Zimbabwe, as in most places, the desire of women to have children is rooted in a context of a need for both love and financial security, especially where women are economically vulnerable," explains Dr. Rayah Feldman. "Marriage, especially if *lobola* or bride-price has been paid by a man's family to a woman's family, is based on an expectation of having children. Also, many women find personal satisfaction in having children." Dr. Feldman was an advisor for the Zimbabwean research developed by the London-based International Community of Women Living with HIV/AIDS in collaboration with the Zimbabwean Women and AIDS Support Network.

Antiretroviral treatment during pregnancy to prevent mother-to-child transmission is unavailable to all but a few women in Zimbabwe and most other developing countries. Also, almost all women breastfeed their babies, providing another route of infection.

In Kenya, "HIV-infected women who do not have any children tend to want to have at least one baby and we now have access in a few hospitals to affordable drug

regimens to reduce mother-to-child HIV transmission," says Dr. Zahida Qureshi, an obstetrician and lecturer at the University of Nairobi. "But even when these drugs are not available, HIV-infected women want to have babies, regardless of the risks involved."

A 27-year-old Kenyan housewife explained in an interview why she wished to conceive, despite the fact that both she and her husband are HIV-positive. "My husband doesn't want any children. ... But I want a child. I cannot live without kids. I am always alone and I am not barren. If I have a child, I will take care of my child and I will be active. I can work because I know I have somebody to take care of. I will have a responsibility."

In Yaoundé, Cameroon, a third of 40 HIV-positive men and women responding to a questionnaire said that they had unprotected sex primarily because they wished to have a child or their partner objected to the use of a barrier method. (About half continued to be sexually active without revealing their HIV status to their sexual partners.[4]) And, a study among some 10,000 men and women in Rakai district, Uganda, who received HIV testing and counseling showed that, despite these services, HIV-positive women were no more likely than HIV-negative women to use female-controlled family planning methods. Condom use was moderately (but not significantly) higher among HIV-positive than HIV-negative men. A strong desire for children may have reduced HIV-infected respondents' acceptance of family planning methods, the study's authors concluded.[5]

That many HIV-infected women actively seek and continue pregnancies despite potential risks for their infants has been demonstrated in several U.S. studies, as well.[6] In interviews with 82 HIV-positive U.S. women, awareness of HIV infection or knowledge that risk of mother-to-child HIV transmission can be decreased by prenatal zidovudine treatment did not significantly influence pregnancy planning, contraceptive choice or use, or consideration of induced abortion. Only 15 percent of respondents used condoms consistently. Only half used any form of contraception. About two-thirds of pregnancies were unplanned, but only 6 percent were terminated. Most women (70 percent) reported that their desire for a child was the most important reason for carrying the pregnancy to term.[7]

Reasons why many HIV-infected women do not contracept are abundant. Not only is motherhood a primary source of self-esteem for many women, but an HIV-infected woman may want to replace a child lost to AIDS.[8] Pregnancy may provide hope for the future: A dying woman can console herself if she has healthy children to survive her.

The prospect of caring for a child may give an HIV-positive woman reason to go on living. Motherhood means "I do not have to dwell on my misfortune," said one of 11 HIV-positive women in a U.S. study in which participants learned both of their pregnancy and HIV infection before 24 weeks gestation. Three women terminated their pregnancies, but eight — including this woman — carried their pregnancies to term. "Keeping them [my children] healthy and happy keeps me alive," she said.[9]

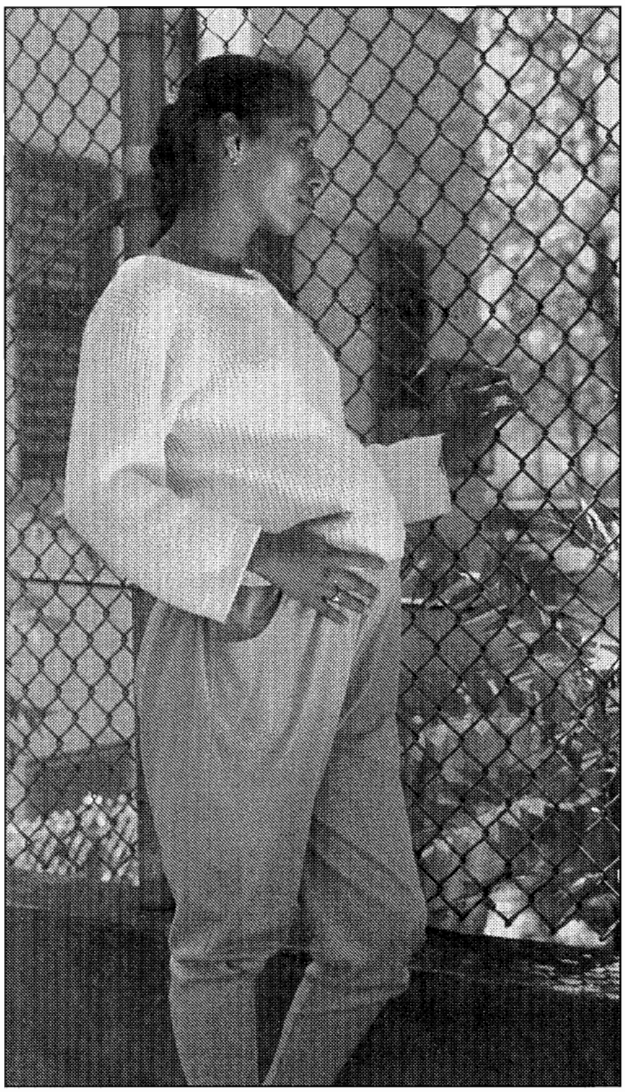
Still other HIV-positive women may not be able to accept the seriousness of their diagnosis and, denying it, become pregnant. Other HIV-positive women may become pregnant to conceal their HIV status from relatives, especially in-laws.

Finally, some HIV-infected women using contraception believe the incorrect idea that HIV-related symptoms are a result of contraceptive use. In Family Planning Association of Kenya clinics, "HIV cases are guided through counseling to choose a contraceptive method that provides dual protection against both pregnancy and HIV transmission," says Sarah Kirowo, assistant program officer. "However, it is difficult to convince women who are HIV-infected that their ailments or symptoms have nothing to do with family planning methods. As a result, they tend not to use contraception."

Preventing pregnancy

Women who are HIV-positive may want to end childbearing for various reasons. Some are worried that pregnancy will further compromise their health. They are concerned about transmitting their infection to children they might conceive. They realize that, particularly without treatment, HIV infection will shorten their own lives, and they fear leaving orphans.

Loel A. Poor



A pregnant, HIV-positive woman in the United States is part of a photo exhibit of HIV-infected people by photographer Loel A. Poor. The exhibit may be viewed on the Internet at *http://www.thebody.com/loelpoor.*

LOEL A. POOR

A MOTHER OF THREE IN THE UNITED STATES WHO HAS RECENTLY LEARNED THAT SHE IS HIV-POSITIVE HOLDS HER YOUNGEST CHILD, AWAITING TEST RESULTS ON THE CHILD'S HIV STATUS.

A 25-year-old, HIV-positive Kenyan housewife who suspects that her husband also is infected explained in an interview why she is contracepting with the injectable depot-medroxyprogesterone acetate (DMPA): "I feel the two children I have are enough. If I continue to give birth, I will have no energy to take care of those many children. If I get more children, maybe I will die and leave them suffering. Also, if my husband goes first and I be rendered a widow, I will have no way of taking care of them."

Some HIV-positive women, however, continue bearing children because they do not know how to stop. In the Zimbabwean study of 52 HIV-positive women — 16 of whom became pregnant after diagnosis — seven of nine women who reported unplanned pregnancies were married with children. Researchers concluded that "long-term married women, particularly in rural areas, often have no history of contraceptive use before they are affected by HIV. They may be ready to terminate childbearing, but often cannot put that decision into practice because they lack control over contraception and access to abortion."

To control contraception, women must be able to negotiate contraceptive use with their partners and have access to family planning services. However, some providers may limit or deny HIV-positive women's access to such services. For example, some 1,500 U.S. primary care physicians were found in a survey to be generally less willing to provide gynecologic, contraceptive or pregnancy-related care to HIV-infected women than to uninfected women.[10]

Even when family planning services are available, they may not address the needs of HIV-positive women. One reason is that HIV-positive women seldom reveal their HIV status to family planning providers, particularly if those providers do not ask. None of six HIV-positive women recently interviewed in Kenya had revealed their HIV status to family planning providers. One 32-year-old woman who tested positive for HIV in 1990 shared the test result with her husband. Although the couple already had two children, her husband wanted more due to pressure from family members. "He started insisting that I had to have a baby ... that there are some HIV people who are having healthy babies and that it was OK to take a risk," she said.

But finding the risks unacceptable and not knowing how to get drugs to reduce the risk of mother-to-child HIV transmission, the woman secretly began using DMPA, never telling providers that she was HIV-positive. "I did not tell them because medical practitioners are very difficult people," she explained. "They are the ones who really stigmatize people who are HIV-positive." Another mother of two interviewed by FHI described why she did not tell a family planning service provider that she was HIV-positive. "I never told her because I can never trust her," says the 21-year-old woman, who tested HIV-positive at age 14. "You know, these days, doctors — if you tell them something like that — will fear you, not give you services or might tell someone else you see."

Providers who are aware of a woman's HIV-positive status still may not offer adequate counseling about reproductive options. Most of 69 HIV-positive women in a U.S. study said they had access to methods to prevent conception and sexually transmitted infections (STIs), including HIV. But fewer than half felt that the family planning counseling they received was adequate.[11] Most of 150 HIV-positive women seen at an HIV/AIDS clinic in São Paulo, Brazil, rated clinic services very highly. Yet, they lacked correct information about contraception, reproduction, and the reduced possibility of mother-to-child HIV transmission with use of antiretroviral drugs.[12] Various African studies show that counseling HIV-positive women does not substantially increase contraceptive use, often because HIV-infected women — fearing abandonment — hide their status from their partners.[13]

CONTRACEPTIVE OPTIONS

HIV-infected women need to know that, aside from abstinence, condoms offer the best protection against STIs. Male or female condoms should be used every time intercourse occurs. This is to avoid HIV transmission to partners and to protect the woman herself from other STIs, including other strains of HIV.

Counseling HIV-positive Women

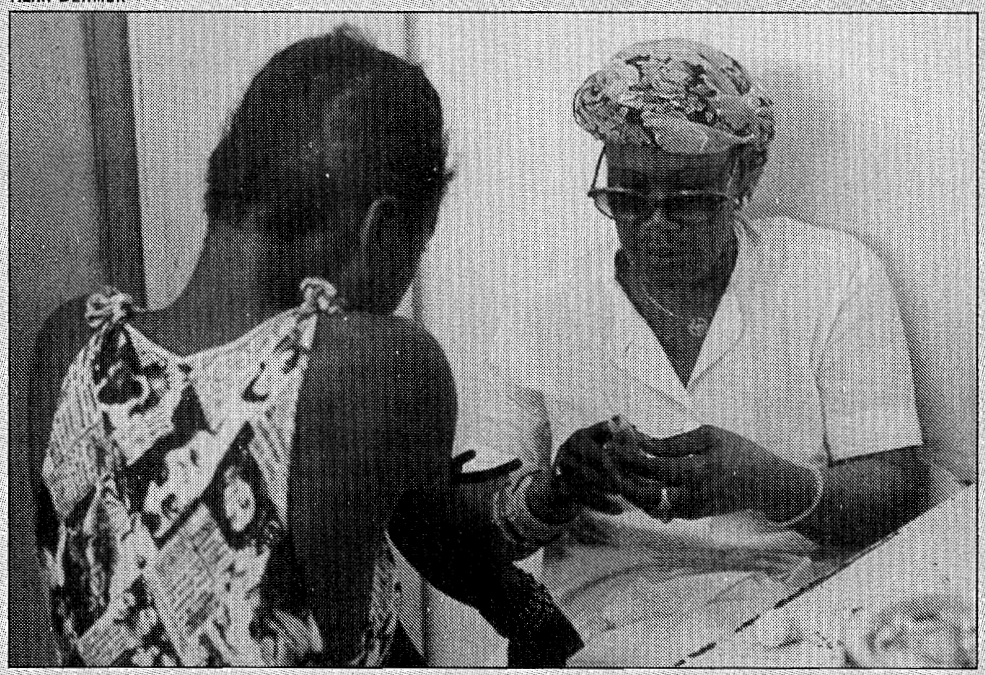
Anyone counseling women known or suspected to be HIV-positive should support the client's family planning decisions, even if the counselor disagrees with the client.[1]

For example, a counselor may believe that permanent contraception is the best option for an infected woman. Such personal beliefs should not influence counseling. A family planning provider should adopt a neutral attitude and give the following information to each HIV-infected client:

- Her life expectancy.
- Pregnancy does not appear to accelerate HIV progression, even among women not receiving antiretroviral therapy.[2]
- An HIV-infected mother can transmit the virus to her child. Rates of mother-to-child HIV transmission in some developing countries exceed 40 percent.[3]
- Although it may be too expensive in developing-world settings, preventive treatment can reduce HIV transmission risks during childbirth.
- The implications of rearing an infected child, including the course of the child's infection and likelihood of premature death.
- The kind of family or social support the HIV-positive woman can expect to receive. Given that without treatment the mother is likely to develop AIDS and die, will family members be available to raise motherless children?

— Kim Best

Alan Dehmer



A woman gives blood for STI testing at a clinic in Dakar, Senegal.

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An HIV-infected woman should be taught correct condom use and skills for negotiating condom use with her partner. Some women are determined to prevail in such negotiations, even when difficult. As a 46-year-old widowed mother of four in Kenya explains, "My husband passed away in 1990. ... There was a time in 1994 when I got another man, and he refused to use a condom. So the relationship could not go on." A 32-year-old Kenyan woman says that when a man refuses to use a condom "we go without sex."

If she does not wish to become pregnant, an HIV-positive woman should consider dual method protection — using a condom for disease prevention and another, more effective method for contraception (see article, page 4). Because some women erroneously believe that a method effective in preventing pregnancy also will be effective in preventing disease transmission, HIV-infected women must understand which methods are appropriate for pregnancy versus disease prevention.[14]

HIV-INFECTED WOMEN LESS FERTILE

Fertility rates for HIV-infected women are lower than for uninfected women. There are several possible explanations.

In developed countries, where women tend to know their HIV status, many infected women may be abstaining from sexual relations, using contraception or having abortions to avoid giving birth to children who might sicken, die or be orphaned.[1] But in sub-Saharan Africa — where most women do not know their HIV status and seldom use contraception or have induced abortions — fertility rates among infected women still remain lower than among healthy women.[2]

Some experts have suggested a direct, biological effect of HIV infection on conception and pregnancy. However, reduced fertility before HIV infection may account for much of the lowered fertility observed after infection.[3] In a study in Uganda of 80 HIV-infected and 96 uninfected women, low pregnancy rates before HIV infection accounted for almost half of the reduced fertility observed after infection.[4]

— Kim Best

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In typical use, diaphragms and cervical caps are associated with relatively high rates of pregnancy. Twenty percent of diaphragm users experience an unintended pregnancy within the first year of typical use. Twenty percent and 40 percent of nulliparous and parous cervical cap users, respectively, experience an unintended pregnancy during this time.[15] But there are no medical restrictions on HIV-infected women's use of these methods.

For HIV-infected women who have decided against childbearing, female sterilization is a good option. The procedure should be delayed, however, if a woman has an AIDS-related illness. All hormonal contraceptive methods are good options for HIV-positive women (using the same clinical criteria as with HIV-negative women), even women who have developed AIDS.[16] Hormonal contraceptives tend to be more effective for preventing pregnancy than barrier methods. However, there is concern that sexual partners of HIV-positive women using more effective contraception may not use condoms as consistently as partners of women using less effective contraception.[17] Also, there is some evidence that antiretroviral drugs can reduce the effectiveness of oral contraceptives, thus requiring an adjustment in dosage or change to another contraceptive.[18]

Due to concerns about pelvic infection and increased blood loss, use of intrauterine devices (IUDs) by HIV-infected women is usually undesirable, according to World Health Organization (WHO) guidelines. However, recent research by the University of Nairobi and FHI suggests that the IUD can be safely used by appropriately selected, HIV-infected women with regular access to medical services.[19] HIV-infected women can generally use the levonorgestrel intrauterine system, according to WHO.

The Lactational Amenorrhea Method, also known as LAM, is a temporary contraceptive option used for up to six months postpartum by women who are fully or nearly fully breastfeeding and continue to have no menses. However, HIV-positive women need to know that any children they bear may become infected with the virus during breastfeeding. The average risk of acquiring HIV infection through breastmilk is at least 16 percent.[20] According to WHO, an HIV-positive mother can eliminate the risk of HIV transmission through breastmilk by using infant formula, modified animal milks or boiled expressed breastmilk. However, she must have access to a sufficient, ongoing and clean supply of this alternative form of milk. If there is no safe alternative form of milk, an HIV-positive mother should give her infant only breastmilk. Limiting breastfeeding to the first six months may also reduce the risk of HIV transmission.[21]

— Maureen Kuyoh and Kim Best

Maureen Kuyoh, a senior project coordinator in FHI's Nairobi office, conducted interviews with HIV-positive women for this article.

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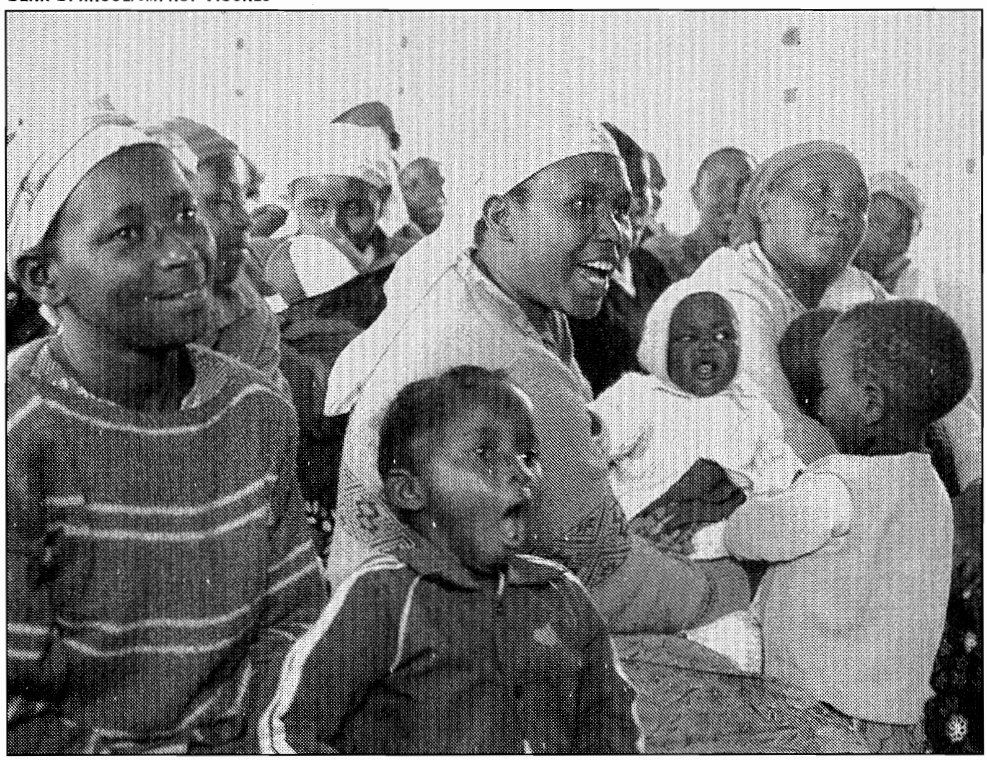
SEAN SPRAGUE/IMPACT VISUALS



MOTHERS AND THEIR CHILDREN VISIT A KENYAN HEALTH CLINIC IN THIGIA VILLAGE, KIAMBU.

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Reaching Youth, Men May Improve Services

A broader approach to integrating STI and family planning services emphasizes prevention over treatment.

Seeking ways to include men and adolescents in family planning and maternal health programs are among recent ideas for how the programs can help prevent the spread of sexually transmitted infections (STIs), including HIV.

Historically, adding STI services to family planning and maternal and child health-care programs has focused primarily on education and treatment for the traditional family planning client, typically a woman who has one partner and is seeking pregnancy prevention. Currently, in addition to finding new ways to reach men and adolescents, some family planning agencies are promoting condom use for dual protection against pregnancy and disease; are encouraging community policies that promote condoms; and are adding counseling about gender relations, which can help women convince their partners to use condoms.

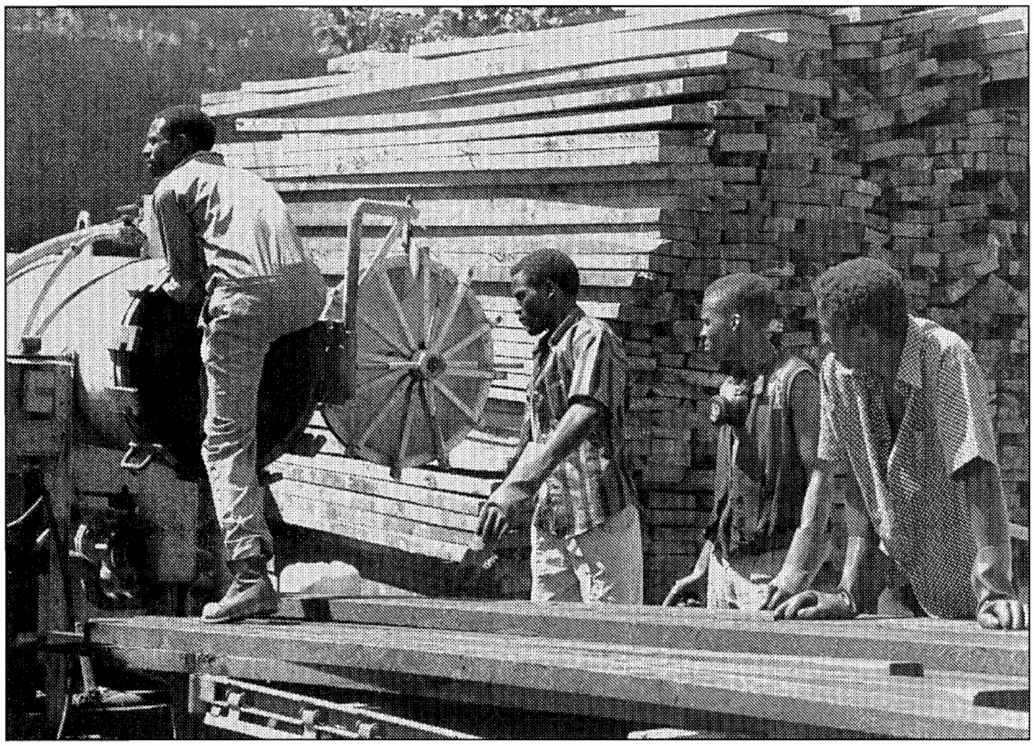
"So much of the literature on integration has focused solely on the detection and management of STIs within female family planning clients through syndromic management that the bigger picture of what integration could and does include tends to get lost," says Dr. Ian Askew of the Population Council in Kenya, who has written extensively about integrating services. Syndromic management refers to diagnosis and treatment based on a client's signs and symptoms, rather than on laboratory tests, which are prohibitively expensive in some settings. Syndromic management tends to be ineffective since women can often be infected without showing symptoms.

In general, the broader approach to integrating services emphasizes prevention of HIV and other STIs over diagnosis and treatment. Besides helping traditional clients prevent infection, family planning programs focus on individuals at greater risk of an STI, especially youth and men. Efforts to reach high-risk people include social marketing programs, public education and communication efforts, and advocacy for policy changes.[1]

Efforts to integrate family planning and STI services increased following the 1994 International Conference on Population and Development in Cairo, which encouraged the concept. In some countries, especially in sub-Saharan Africa, integrating STI management into primary health-care services has been a national policy. Since 1996, for example, Kenya has trained nurses in STI management, improved its system for distribution of STI treatment drugs and revised national family planning guidelines to include STI management. One in every 10 adults in Kenya is infected with HIV.[2]

However, integrating STI and family planning services is difficult to achieve. In Kenya, a recent national survey shows only one in five family planning providers discussed STI risk factors during counseling and only one in 10 promoted the use of condoms for STI protection.[3]

HELDUR NETOCNY/PANOS PICTURES



SUCCESSFUL INTEGRATION OF FAMILY PLANNING AND STI SERVICES MAY REQUIRE BETTER WAYS TO REACH MORE MEN AND YOUNG ADULTS. AT A TIMBER YARD IN MOSHI, TANZANIA, MEN LOAD SAWED PLANKS INTO A CHAMBER THAT SEASONS THE WOOD WITH PRESERVATIVES.

PREVENTIVE ACTIVITIES

A review of integration models from around the world concluded that behavioral change messages directed at women have potential but their impact is low, particularly if the women are married and have only one sexual partner. STI prevention messages could be more productive if directed towards their male partners, the review concludes. "Behavior change promotion in family planning settings appears to have significant potential only if it succeeds either in empowering women to negotiate safe sex with their partners or in reaching out to other segments of the population, including young and unmarried women, sex workers and men," the study found. Expanding counseling programs to these broader audiences will take time, however.

In the meantime, the most feasible and immediate step toward STI prevention through family planning programs is emphasizing the dual protection offered by condoms, according to the study[4] (see related article, page 4).

Some integration efforts are experimenting with ways to reach men and youth. In a project among the national affiliates of the International Planned Parenthood Federation (IPPF) in Brazil, Honduras and Jamaica, STI prevention campaigns focus on men in factories and community settings, as well as on adolescents in school and non-school settings. Staff training includes ways of empowering women clients to negotiate condom use.[5]

IPPF programs in Brazil and Honduras have begun condom social marketing campaigns. Condoms now account for more than half of the couple-years of protection from all contraceptive use in the Brazil program.[6] Policy planners from several African nations have used the Brazil and Jamaica programs as models for changes in their family planning programs, specifically incorporating "gender-sensitive programs focusing on the youth," says Antero Veiga of the IPPF Africa office.

An analysis of integration efforts in Ghana, Kenya, South Africa and Zambia, looking at 20 health facilities in each country, found "a critical need to reexamine the continuing focus on family planning service," particularly clinical services. There remains "continued relative inattention to large population groups such as men and sexually active unmarried women" who rarely use family planning or maternal and child health services.

Providing STI services to women receiving antenatal services was described in the study as an important element. Antenatal services reach four of every five women at some point during each pregnancy in three of the four countries studied.[7] A simple screening test can help diagnose and treat pregnant women who may have syphilis, for example. The test can be performed while the woman waits for the result, and treatment with penicillin can begin immediately. Untreated syphilis in pregnant women can cause spontaneous abortion, stillbirth, premature birth and infection in the infant. Transmission to the fetus occurs at least 20 percent of the time.

SYNDROMIC MANAGEMENT

As policy planners continue to search for ways to address the STI/HIV epidemics, they face discouraging findings regarding how well the syndromic management system works among family planning clients.[8]

Because laboratory tests for most sexually transmitted infections are too expensive in some countries, the World Health Organization (WHO) and others developed algorithms (a set of questions given in a flow chart) that providers could follow to treat a syndrome of signs and symptoms. Algorithms work well for ulcerative infections, such as syphilis and chancroid. However, when signs and symptoms are less predictive of a specific infection or there are no symptoms with an infection, the algorithms have not been successful.

For example, gonorrhea and chlamydia are usually asymptomatic in women and cannot be recognized easily using syndromic management. These two cervical infections account for about 45 percent of the new cases of curable STIs per year and can have severe consequences if untreated.

In an attempt to make the vaginal discharge algorithm work better, programs have developed screening tools to help identify women who have a greater risk for cervical infections. These "risk assessments" involve asking other questions beyond medical signs and symptoms, such as: Have you had sex with more than one person or with a new partner in the last three months? In an FHI-coordinated survey of risk assessments used among low-risk populations, scientists concluded that "unless risk assessments can be made more accurate, they will remain promising but ineffective in low-prevalence settings" such as family planning and antenatal clinics.[9]

A recent review analyzed 29 studies that have tested the use of various screening and syndromic management approaches to diagnose and treat women with vaginal discharge. "This review found little difference in the usefulness of simple screening criteria and algorithms or risk scores to identify gonorrhea and chlamydial infection among women," reported the authors from the Population Council. "These strategies consistently identify many more women incorrectly than correctly as needing treatment." Rather than spending time on ineffective care, clinicians should spend their time on providing condoms and information, the study concluded.[10]

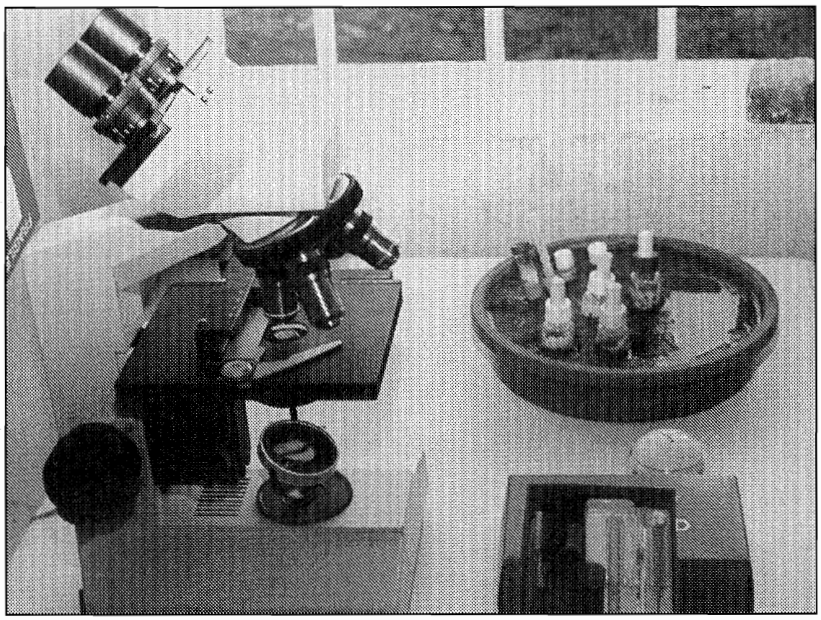
A recent study of five health clinics in Nakuru, in northwest Kenya, examined the validity of the syndromic management approach in use there during the last several years. More than 900 family planning and 800 antenatal clients participated in the study, which included medical and pelvic exams, assessment of STI symptoms and signs using the vaginal discharge algorithm, and risk assessment tools. Most women found to have an infection were asymptomatic. The vaginal discharge algorithm identified only a small portion of the women who actually had a laboratory-diagnosed infection (5 percent of the family planning clients and 16 percent of the antenatal clients). The study concluded that the program should emphasize preventive approaches.[11]

An FHI study among family planning clients in Jamaica compared several approaches to identifying cervical infections among asymptomatic women. The WHO vaginal discharge algorithm with risk assessments (adapted for use in Jamaica) was the least accurate of the five approaches studied. Two risk assessment algorithms that weighted various factors had the highest positive predictive value but were more difficult to use. A rapid risk analysis with a urine leukocyte esterase dipstick (LED) test was nearly as accurate as the risk assessments and simpler to conduct. "Even without access to urine dipsticks, simple risk questions alone may be preferable to the WHO algorithm to identify family planning clients in need of STI counseling, referral or presumptive treatment," explains Alan Spruyt of FHI, who helped coordinate the study.[12]

SHEHZAD NOORANI/WOODFIN CAMP & ASSOCIATES

ADOLESCENT WOMEN IN CAMBODIA RECEIVE COUNSELING ABOUT A NUMBER OF HEALTH CONCERNS, INCLUDING HIV/AIDS AWARENESS AND PREVENTION.

ELIZABETH T. ROBINSON/FHI



THE BEST USE OF LIMITED RESOURCES IS AN IMPORTANT CONCERN WHEN INTEGRATING SERVICES. THIS NEIGHBORHOOD HEALTH CLINIC IN BAMAKO, MALI, USES WET SAND AS AN INEXPENSIVE WAY TO KEEP LABORATORY REAGENTS COOLED TO THE RIGHT TEMPERATURE.

COST CONCERNS

Other challenges in integrating family planing and STI services involve funding systems and the limited resources available for training, supervision, dissemination of management guidelines, and development of useful information, education and communication materials.

An assumption about integration of services is that it would be more cost-effective to use existing family planning and maternal health infrastructures to manage infections rather than using separate services. Early research indicated that integrated services might be cost-effective. For example, a 1996 study of clinics in Kenya found that offering services to a symptomatic client who requested oral contraceptives during the same visit cost about U.S. $8.60, while offering the services separately would be more expensive, costing U.S. $12.40.[13]

However, as studies of the cost of integration have begun to address how well syndromic management works, the cost-effectiveness of integrated services seems less certain. A study in Zimbabwe concluded that screening women for STIs at family planning clinics based on their signs and symptoms is not cost-effective. The analysis included four diagnostic models, ranging from a syndromic approach at U.S. $2.48 per client to providing laboratory testing for all family planning clients at a cost of U.S. $25.77 per client.

Although the syndromic approach was least expensive, it was still unaffordable in some settings. Furthermore, it failed to detect infections in three of every four women who were infected, and more than half of those who were treated had no infection (as confirmed by laboratory tests).[14]

"We found that family planning providers have the technical skills to do sexually transmitted infections management, and thus adding this service is feasible," says Rick Homan of FHI, who helped conduct the study. "However, being feasible does not guarantee that the service is either cost-effective or affordable. In our study, the syndromic management guidelines were not effective in terms of the number of people treated correctly (infected or uninfected). In addition, it is not affordable for the health ministry to consider any of the diagnostic models for screening family planning clients." In the absence of cost-effective approaches to the diagnosis and management of STIs, the report recommended that family planning programs in the region put more emphasis on preventive strategies.

— *William R. Finger*

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Does Circumcision Reduce HIV Risks?

More research is needed to understand the association between circumcision and HIV prevention.

In some countries, men are asking to be circumcised because they have heard the procedure may reduce their risk of HIV infection. However, while there is evidence to support their belief, promoting circumcision as a way to prevent the spread of HIV may not be appropriate.

If health officials recommend circumcision to reduce HIV risks, some men might incorrectly assume that circumcision offers excellent protection against HIV. As a result, many of them may adopt risky sexual behaviors, such as not using condoms, having multiple sexual partners, or having sex with high-risk partners. The overall effect could increase the spread of HIV.

Also, circumcision by unqualified individuals under unsanitary conditions can lead to serious, long-term complications or even death. Men who elect to undergo the surgical procedure to remove the foreskin of the penis should have qualified medical personnel perform it under hygienic conditions.

"Our current position is that the evidence for a protective effect of male circumcision on HIV acquisition in high-risk settings is reasonably convincing," says Dr. Timothy Farley of the World Health Organization's Programme of Research, Development and Research Training in Human Reproduction in Geneva. "But there is no evidence that promoting circumcision among boys or men actually reduces the incidence of HIV infection, and there is a genuine possibility that it may undermine other HIV-preventive strategies."

Dr. Michel Caraël, HIV prevention team leader in Geneva with the Joint United Nations Programme on HIV/AIDS, agrees. "While there is a need for the international research community to be actively involved in further investigating the association between circumcision and HIV prevention," he says, "it is too early to make clear policy recommendations about this matter."

Men in some African countries seem to be seeking circumcision to reduce HIV risks. In Nigeria, "there is an increased demand for male circumcision now as an HIV-prevention strategy," confirms Dr. Ernest Ekong, a public health physician at Military Base Hospital in Yaba Lagos, Nigeria. In South Africa, many men are going to local clinics or general practitioners to be circumcised for health reasons, with their wives often making the appointment for them.[1]

Globally, about 20 percent of men are circumcised for religious, cultural, medical or other reasons.[2]

Throughout the developing world, only a small percentage of male circumcisions are performed under sterile conditions by qualified medical personnel. Morbidity rates from circumcision are high. In a prospective study conducted in Nigeria and Kenya between 1981 and 1998, 11 percent of 249 circumcisions performed under sterile conditions by one qualified surgeon resulted in complications, although no

complication led to death or amputation. In the same study, one of 50 patients treated for complications following circumcision performed by other surgeons (mostly medically untrained traditional circumcisers) died from infection. Another seven of the 50 suffered complete or partial loss of the penis. Also, Ugandan Muslims reported in a survey that the same unsterilized cutting device was used for multiple male circumcision procedures, a major risk factor for HIV transmission.[3]

Even health professionals may not be prepared to perform safe circumcisions. An assessment of acceptability of male circumcision among Luo men and women in Nyanza province, Kenya, and of the feasibility of offering the procedure in hygienic conditions there showed that only one of eight health centers had sufficient instruments and supplies to perform a circumcision safely.[4]

Conflicting evidence

Some scientists argue that promoting circumcision for health reasons is not only warranted, but overdue. Some 30 studies show that circumcised men are less likely than uncircumcised men to become infected with HIV.[5] One recent prospective study suggesting that circumcision protects against HIV infection was conducted in Rakai, Uganda. For 187 couples where women were HIV-positive and their male partners were not, there were no new infections among 50 circumcised men over 30 months, but 40 new infections occurred among 137 uncircumcised men.[6] Another recent study involving some 8,000 men and women found that in Yaoundé, Cameroon, and Cotonou, Benin — where HIV prevalence rates among sexually active men are low at about 4 percent — nearly all men are circumcised. In Kisumu, Kenya, and Ndola, Zambia — where HIV prevalence rates are very high at 22 percent and 26 percent respectively — circumcision is far less common (27 percent and 8 percent, respectively).[7] Another recent prospective study of the effect of circumcision on the acquisition of HIV and other sexually transmitted infections, conducted among some 750 Kenyan truck drivers, found HIV infection rates to be four times greater among uncircumcised men than circumcised men.[8]

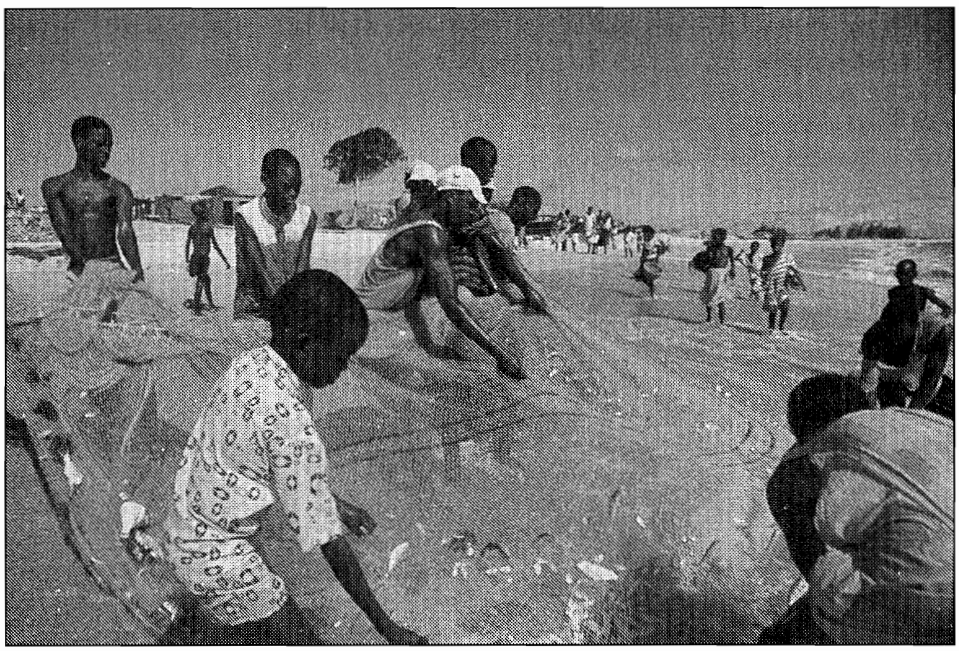
Some observers also point out that variation in circumcision practices may help explain why HIV rates in countries or regions differ. In areas where circumcision is common, HIV infection rates tend to be low. In North America, where about 80 percent of men are circumcised, only a fraction of 1 percent of the population is HIV-positive. In western Africa, another area where circumcision is widely practiced, rates of HIV infection among those ages 15 to 49 are just 1 percent to 5 percent. But in eastern and southern Africa, where typically fewer than 20 percent of men are circumcised, rates of HIV infection range from 15 percent to 25 percent.[9] The spread of HIV in Thailand and Cambodia also has been largely attributed to low male circumcision rates.[10]

However, other scientists point out that at least five studies have found no protective role for circumcision and one has found that circumcision increases risk of HIV infection. There are discrepancies. Why, for example, are HIV rates lower in Europe, where men typically are uncircumcised? Why are they high in some places, like Ethiopia, where men are usually circumcised?

"It would have been a happy coincidence if circumcision, which is widely practiced in this country, had been protective against HIV infection," says Dr. Asheber Gaym of Addis Ababa University, Ethiopia. "Unfortunately, despite the nearly universal application of this procedure, the HIV pandemic is rapidly spreading in our country."

Some of these incongruities might be explained by behavior. Some circumcised men, for example, may have hygienic, cultural or religious practices that reduce their risk of HIV infection. This includes Muslim men, whose religion forbids alcohol use (associated with high-risk sex with commercial sex workers and failure to use condoms). Other Muslim practices that may help reduce HIV transmission include polygamous marriages (that limit sexual activity with women outside the family of multiple wives) and postcoital genital washing before praying. Although circumcision

Alan Dehmer



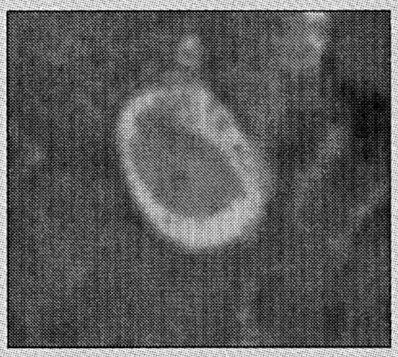
Boys and men help retrieve nets on the beach of a fishing village near Dakar, Senegal.

Removing Specialized Cells May Explain Protective Effect

How might male circumcision protect against HIV infection?

There is some evidence of a biological explanation. Most cases of primary HIV infection in women are thought to occur when HIV binds to receptors of specific cells in the vagina, called Langerhans' cells. Similar cells are abundant in the inner surface of the foreskin and urethra of men.

Langerhans' cells are likely to be sites where HIV enters the male body during intercourse,[1] when the foreskin is pulled down the shaft of the penis and its inner surface is exposed to vaginal secretions. Langerhans' cells have been shown to be the major surface cell type involved in transmission of HIV infection to lymph tissue,[2] where it eventually leads to a fatal infection. In addition, the highly vascular frenulum (the thin band connecting the inner foreskin to the underside of the tip of the penis in uncircumcised men) is particularly susceptible during intercourse to tears and abrasions that facilitate entry of HIV into the body.



A TYPICAL HUMAN LANGERHANS' CELL.

Without proper hygiene, bacteria and viruses can accumulate under the foreskin. Although little is known about the association between penile hygiene and HIV infection, accumulation of sexually transmitted pathogens under the foreskin may explain in part why uncircumcised men are at greater risk of acquiring an infection and related lesions than are circumcised men. Having a sexually transmitted infection increases one's risk of acquiring HIV.

Studies in Africa have shown that HIV-infected men are more likely to have a history of genital ulcers than uninfected men. In one study, men with chancroid were five times more likely to become infected with HIV than men without chancroid.[3] Another study, in which 24 of 293 men (8 percent) became HIV-infected, found that nearly all infections occurred in men who were uncircumcised or had genital ulcer disease.[4] Some experts believe that uncircumcised men with genital ulcers may be the core group spreading the epidemic in some populations.[5]

— Kim Best

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was strongly associated with reduced HIV acquisition in the recent Ugandan study, the practice was not significantly protective among non-Muslim men.[11] The varying prevalence of sexually transmitted infections among populations also likely plays a role. Furthermore, many other factors besides circumcision may be responsible for distinctly high or low HIV rates observed in specific populations. Only rigorous, randomized, controlled studies will clearly determine the roles biological and behavioral factors play in the matter, most experts agree.

More research also is needed to determine whether male circumcision reduces the risk of transmission of HIV from infected men to uninfected female partners. The only study to address this issue found that circumcision may reduce transmission from HIV-positive men with relatively low viral loads.[12]

Further complicating the debate is evidence indicating that, to prevent HIV infection, circumcision must be performed early. In a Ugandan study among 6,821 men, HIV prevalence rates were 14 percent and 16 percent respectively for uncircumcised men and men circumcised at age 21 and older. But the prevalence rate fell to only 10 percent for men circumcised between the ages of 13 and 20 years, and to 7 percent in men circumcised at age 12 years or younger.[13]

These and other data suggest that circumcision as an HIV-prevention strategy may be effective only when performed on prepubescent boys or infants. Yet, such circumcisions would not be of immediate benefit in terms of HIV prevention and would have to be done without informed consent, raising ethical concerns that are far from being resolved.

Notably, neonatal circumcision has been found to protect against both penile cancer in situ and invasive penile cancer.[14] Uncircumcised men may be more likely to develop penile cancer because they appear to be at greater risk of being infected with human papilloma virus (HPV). In a study of 38 Argentinian men with penile cancer, most cancers were related to HPV.[15] And in Bali, it has been estimated that over 75 percent of genital cancers contain HPV. As of 1986, cervical cancer, which is often associated with HPV infection, was the most frequent cancer in Balinese women. Penile cancer was the second most frequent cancer in Balinese men, who are rarely circumcised.[16]

— *Kim Best*

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Condom Offers STI Protection

Condom use should be encouraged among people at risk of HIV and other STIs.

Among barrier contraceptives, the male latex condom offers the best protection against sexually transmitted infections (STIs), including HIV/AIDS. When used consistently, male condoms also provide highly effective contraception.

In theory, the female condom should also protect against STIs, including HIV/AIDS, but more research is needed to confirm the effectiveness of the female condom in preventing disease. Vaginal barrier methods such as the diaphragm, cervical cap, sponge and spermicides are less effective, even when a barrier device such as a diaphragm is used with a spermicide.

The major public health challenge in reducing HIV/AIDS and other STIs is to encourage greater use of condoms among people at risk. Women and men report not using male condoms for many reasons, including fear of partners' reactions, partner opposition, lack of confidence in the product, lack of access to condoms or decreased pleasure if used.[1] In addition, family planning providers often encourage clients to consider the more effective contraceptives, such as injectables, and discourage reliance on the condom as a means of preventing pregnancy.

Despite the fact that the condom is very effective against STIs, many people at risk do not use them. Some bacterial STIs, such as gonorrhea and chlamydial infection, are easily transmitted, making consistent condom use especially important. Promoting condoms among men and youth, and encouraging better attitudes about condom provision among family planning providers and other health professions may help reduce the number of new infections.

Reaching men

"A focus on men is a crucial aspect of any strategy to promote safer sex and consistent and correct condom use," says a joint policy statement by the World Health Organization and other United Nations agencies. "The activities of family planning programmes need to be expanded to reach men and young people at risk as well as their traditional clients — married women."[2]

Some family planning programs, including the Jamaica Family Planning Association and other affiliates of the International Planned Parenthood Federation, have promoted condoms among men through outreach workers and special clinic hours.[3] But most condom promotion programs targeting men are AIDS prevention efforts with truck drivers, military personnel, those at commercial sex establishments and others in high-risk groups. Such efforts to increase condom use have reduced infection rates in a few notable cases, especially in the "100 percent" condom campaign among sex workers in Thailand.[4]

A study among men with casual sex partners in Uganda found that only about half ever used condoms and, among those who did, only about six of 10 always used a condom with casual partners.[5] In a year-long

Do Contraceptives Protect against Sexually Transmitted Infections?

	Condom	Diaphragm	Spermicide	Hormonal	IUD
Viral HIV/AIDS Herpes Simplex (HSV) Human Papilloma (HPV)	Protective against HIV; protection unproven against skin-to-skin infections (HSV, HPV)	Little known about protection	Not protective	Not protective	Not protective
Bacterial Chancroid Chlamydia Gonorrhea Syphilis	Protective against gonorrhea; presumed protective for others	Some protection against cervical gonorrhea and chlamydia; associated with vaginal anaerobic overgrowth	Possibly protective against cervical gonorrhea and chlamydia	Associated with increased cervical chlamydia; protective against symptomatic PID, but higher risks of unrecognized endometritis	Associated with PID in first month after insertion

Source: Cates W Jr. Contraceptive choices and sexually transmitted infections among women. In Ness RB, Kuller LH, eds. *Health and Disease among Women: Biological and Environmental Influences.* (New York: Oxford University Press, 1999)401-19.

intervention at 12 Kenyan tea plantations, condom use increased markedly and STI rates decreased by 25 percent. However, multiple factors could have caused the STI reduction. "The most important reason the rates went down is probably that we found and treated more infections than had been done before we conducted the study," says Dr. Paul Feldblum, an FHI epidemiologist who coordinated the study. "Condom use was most likely secondary to treatment in reducing the rate of infections." Participants in the study were tested and treated for three curable diseases — gonorrhea, chlamydial infection and trichomoniasis.

Researchers debate whether measures of condom use and other behaviors accurately explain shifts in STI rates, especially when the measurements rely on self-reported behaviors. A recent analysis of a behavioral intervention suggests that people tend to avoid condom use if they believe their partner is "safe." "Using behavior as a surrogate for STI risk may be particularly problematic when studying persons who might vary their use of condoms with partners of varying risk," it concludes.[6]

Addressing gender issues may be as important as focusing on increased condom use. Consistent, sustained use of condoms requires behavioral change. Men's sexual behaviors are linked to their sense of masculinity. In many cultures, assumptions about masculinity may encourage excessive alcohol use or violent behavior toward women, which can increase risky sexual behaviors. "We need to help men to begin to question the value placed on risk-taking behavior as a defining characteristic of masculinity," says Dr. Benno de Keijzer of Salud y Genero, a nongovernmental agency in Mexico that works with men on gender roles. "Addressing the underlying gender issues must be acknowledged if the HIV/AIDS epidemic is going to be curbed."

Young adults

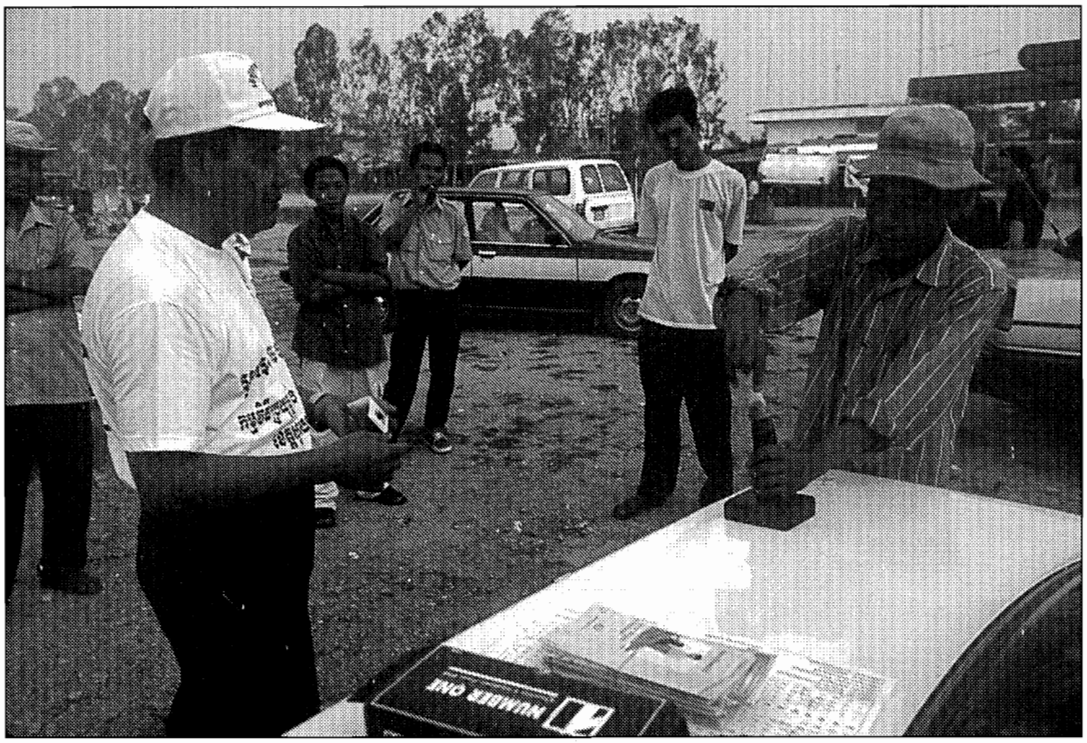
Encouraging young people to use condoms and to develop skills to refuse unwanted sex is also crucial. HIV infections are rising fastest among those under age 25, especially women. Youth are often inexperienced with condoms, feel invulnerable to risk, have spontaneous sex and are embarrassed to interrupt sex to put on a condom. Some young women need skills to refuse risky sex from older men. All of these factors present challenges to programs that target adolescents and to condom social marketing campaigns.

Some marketing campaigns are designed specifically for adolescents. A seven-country campaign in Central America recently directed television and radio ads to adolescents, with an emphasis on how condoms prevent disease transmission. "Our field research told us that boys and especially girls think about pregnancy prevention, not sexually transmitted infection prevention," says Francoise Armand, senior marketing manager for Population Services International (PSI), which is coordinating the campaign. "So we had to adjust the campaign to focus on the dual protection qualities of condoms."

One current television message aired in the seven countries, for example, presents a game show format with young couples answering questions about pregnancy and STIs, designed to remove the stigma of condom use. "We are trying to change social norms so that unprotected sex becomes uncool," says Armand.

Greater awareness among young adults of STI risks may be difficult to achieve. In Cameroon, PSI conducted a year-long condom marketing campaign among youth that included media promotions, peer education and the involvement of youth clubs. In addition to condom use, the campaign addressed

SHEHZAD NOORANI/WOODFIN CAMP & ASSOCIATES



IN CAMBODIA, TRAINERS FROM A HOSPITAL DEMONSTRATE PROPER USE OF CONDOMS TO TAXI DRIVERS AT A MARKET IN SVAY RIENG PROVINCE.

abstinence, other contraceptive methods and early detection of STIs. Despite the fact that youth reported increased use of condoms and other contraceptives for pregnancy prevention, there appeared to be no significant increase in condom use for STI prevention.[7] Similarly, PSI youth campaigns in South Africa and Guinea did not increase youth's perception of STI risks.[8]

Family planning programs in some countries are often unwilling to distribute condoms to unmarried youth. Accessibility to condoms may also be difficult for youth due to cost, stigma, embarrassment and other barriers. A study among adolescents in Botswana found that females in particular feared they would be stigmatized if they obtained condoms.[9] Youth are more likely to use condoms that are more readily available at shops, grocery stores and in vending machines.

PROVIDER ATTITUDES

A study in 11 African countries found that many family planning providers did not mention condoms to new clients, despite the high rates of STIs in these countries. In Zimbabwe, for example, providers told only one of every five new clients about condoms, and in Senegal, one of four.[10] A recent FHI service delivery analysis in Kenya drew similar conclusions. "The vast majority of interviewed providers correctly demonstrated most of the essential steps in condom use," says Dr. Theresa Hatzell of FHI, who coordinated the study. "But unfortunately, they do not share that knowledge with their clients. Providers showed a condom sample in only 7 percent of the observed family planning visits."

Many providers do not emphasize condoms as a good choice to family planning clients because of contraceptive effectiveness rates. In typical use, the annual pregnancy rate is 14 percent. If used consistently and correctly (perfect use), the pregnancy rate is 3 percent. In contrast, pregnancy rates for the pill are 5 percent and less than 1 percent for typical and perfect use respectively.[11]

Even if providers counsel clients about the need for condom use, condoms must be readily available. A study in four African countries found that 41 percent of providers in Kenya require spousal consent for condom use, with between 14 percent and 19 percent of providers facing this restriction in Botswana, Burkina Faso and Senegal. "These findings may suggest an unwillingness to recognize the frequency of HIV transmission within married couples or a fear that the woman would use the condoms in extramarital relationships," the researchers concluded.[12]

Reliable information and assistance from pharmacists who sell condoms is important. In Ghana, men posing as clients with urethral discharge visited 96 pharmacies to gather information for a study. Half of the pharmacists had been trained in condom promotion. However, only six of the 96 pharmacists advised the study clients that they should use condoms until the discharge stopped.[13]

Some providers may not feel comfortable addressing sexual practices and risks of STIs with their clients. However, if providers do not ask clients about sexual practices and the ability to control the timing and circumstances of sex, providers may not realize when condoms are appropriate. A couple's sexual history is important in evaluating the level of risk involved, and clients should understand this aspect.

BETTER DESIGNS

Better condom designs that men and women will find more acceptable, especially regarding how they affect pleasure, may encourage condom use. Unlike latex condoms, polyurethane male condoms facilitate body heat transfer, which may increase pleasure. Some products are designed to be easier to put on than traditional latex condoms. Synthetic non-latex condoms can also be used with a broader range of lubricants and will not cause an allergic reaction to latex.

While scientists have assumed the non-latex products would be more acceptable than latex, initial research has been mixed.

In a study of more than 800 monogamous couples randomly assigned to use either a polyurethane or latex device for six months, 15 percent of those using polyurethane said they would not recommend it to others, compared to 7 percent of the latex users not willing to recommend latex. More than twice as many couples using polyurethane dropped out of the study citing a condom-related reason. However, males rated the polyurethane condom more highly than the latex in several subjective categories, including sensitivity and odor, and they were less likely to complain of discomfort from constriction than were men using latex devices.[14]

A POPULATION SERVICES INTERNATIONAL NEWSLETTER FOR YOUNG ADULTS IN BENIN, CALLED *LOVE AND LIFE*, PROMOTES BETTER REPRODUCTIVE HEALTH, INCLUDING CONDOM USE.

A study involving 54 couples compared acceptability of latex, polyurethane and a new material called styrene ethylene butylene styrene or SEBS. Each couple tested three condoms of each material. About two-thirds of both men and women preferred one of the two synthetic materials over latex, "suggesting that consumers will appreciate the availability of these products," the authors concluded.[15]

New shapes and designs may address other concerns about traditional condom products, such as the tight fit. Based on early research, however, whether availability of these new designs will actually increase acceptability is not clear. A study involving 443 couples compared results of using three new designs of a synthetic elastomer condom, called Tactylon, and a latex device. On use, fit, appearance, comfort and sensitivity, one type of Tactylon condom design was rated highest among the four condom types in the study. A baggy Tactylon style, however, was rated less satisfactory than a latex condom.[16]

Reversible condoms that can be unrolled in either direction may address some concerns that condoms are troublesome to use and make sex less spontaneous — factors that could lead to less consistent or incorrect use. If a man begins putting on a latex condom in the wrong direction, he should discard the condom and open a new one because he may transfer pathogens from his body to the outside of the condom by simply turning it over. Reversible condoms would help prevent this mistake. A loose-fitting polyurethane condom that can be put on in either direction and has broad lubricant capability is currently manufactured by a private company and sold in Europe and Canada.

— *William R. Finger*

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N-9 Protection against HIV Doubtful

Recent preliminary research indicates N-9 spermicidal gel is ineffective in preventing HIV.

Two public health agencies are recommending that the contraceptive spermicide nonoxynol-9 (N-9) should not be used as a means of HIV protection among high-risk women.

The Centers for Disease Control and Prevention (CDC) in the United States and the Geneva-based Joint United Nations Programme on HIV/AIDS (UNAIDS) recently recommended that women should not use N-9 spermicides to prevent HIV transmission. CDC also recommends that N-9 should not be used as a protective barrier against HIV transmission during anal intercourse.[1]

This means providers should discontinue counseling individuals who cannot use a condom to consider N-9 spermicides for HIV prevention. Providers should inform condom users that using an N-9 lubricated condom is better than using no condom at all, but N-9 may not offer any additional protection against HIV. Condoms without N-9 may be a better option for HIV prevention.

The recommendations reflect the implications of a recent study by UNAIDS and the U.S.-based Columbia Laboratories. In that study, preliminary data suggested that N-9 was not effective against HIV infection and may have facilitated HIV transmission. Both the CDC and UNAIDS continue to review their public health guidelines for the use of N-9 for HIV prevention and for pregnancy prevention in populations at high risk for HIV.

The UNAIDS-sponsored study, conducted among 991 prostitutes in Benin, South Africa, Thailand and Côte d'Ivoire, showed that a low-dose (52.5 mg) N-9 gel was significantly less effective in protecting women from HIV than the placebo, a vaginal moisturizer called Replens. All women were given HIV counseling, provided with condoms and encouraged to have their partners use condoms. Nevertheless, 59 of 500 women using the N-9 gel acquired HIV, compared with 41 of 500 women in the placebo group. Women exposed to N-9 spermicide were also more likely to have genital lesions, thought to increase risk of HIV acquisition.[2]

"We know N-9 is not the answer [to HIV prevention] — so we need to continue the search" for an effective microbicide to prevent HIV transmission, says Dr. Joseph Perriëns, head of the UNAIDS microbicide effort.

Meanwhile, individuals need to know that a male latex condom used every time they have vaginal, oral or anal sex is the most effective way to reduce the risk of sexually transmitted infections (STIs), including HIV. They should use a condom during sex if they have any of the following risk factors: they have a new sex partner, or their partner has sex with another person; they or their partner gets any STI or HIV/AIDS; or, they or their partner share drug injection needles with others.

Unanswered questions

"Given the results of the UNAIDS trial, people are appropriately cautious," says Dr. Penelope Hitchcock in the United States, chief of the Sexually Transmitted Diseases Branch of the U.S. National Institute of Allergy and Infectious Diseases (NIAID). "It is clear that N-9 can irritate the vagina and we are increasingly aware that vaginal lesions have the potential to make women vulnerable to HIV infection."

Although an earlier FHI study in Cameroon showed no difference in HIV transmission rates among women using a low-dose (72 mg) N-9 vaginal contraceptive film and women receiving a placebo film, rates of genital lesions among women who used N-9 were greater than among women using placebo.[3] In another study, use of a contraceptive sponge containing 1,000 mg N-9 was associated with increased incidence of both genital ulcers and HIV infection.[4]

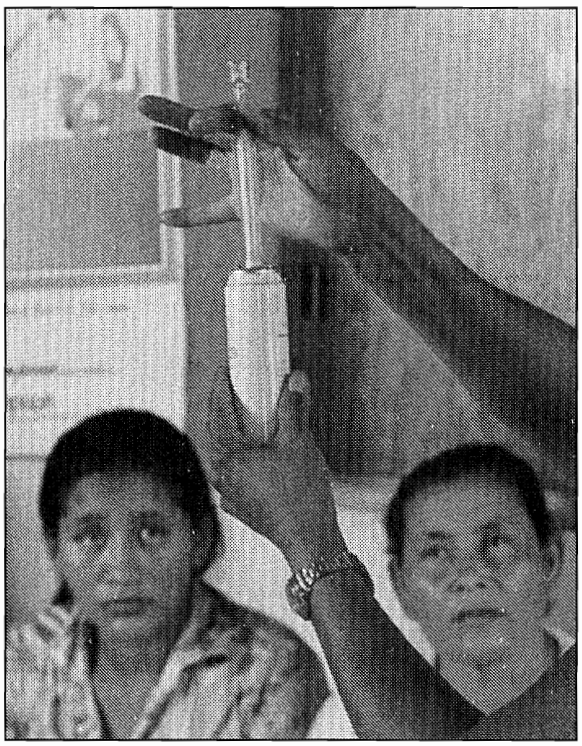
However, some experts have not abandoned hope for N-9 as a prophylactic. First, they point out, more women using N-9 in the UNAIDS trial may have acquired HIV than women using the vaginal moisturizer placebo because the moisturizer itself may have had a protective effect. Preventing the vagina from becoming dry may have reduced vaginal trauma and lesions during intercourse.

Also, the UNAIDS trial data need further, closer analysis. "Only a preliminary analysis of the UNAIDS trial data has been made public," says Dr. Hitchcock. For example, scientists have not analyzed the degree of exposure to N-9 by women who became HIV-infected.

N-9 spermicides might still be shown to protect against HIV among women who use the product infrequently. The vaginal irritation or ulceration caused by N-9 is related to the N-9 concentration per dose and frequency of use, with lower concentration and less frequent use causing less or no irritation or ulceration.[5]

All studies of N-9 spermicide effectiveness against HIV transmission have been conducted among high-risk commercial sex workers. Conducting such trials has been considered essential "in order to get an answer in a reasonable time among a reasonable number of people," says Dr. Hitchcock. "We must do studies in high-risk populations where use of the test product possibly holds the highest benefit, as well as possibly the highest risk. The dilemma is that the results of a trial among high-risk women who use the product often may not be indicative of how well the product protects low-risk women who might use it far less often." Infrequent exposure to N-9 spermicide, for example, is less likely to lead to vaginal irritation than exposure to it several times a day.

Sean Sprague/Panos Pictures



A health counselor in Guatemala demonstrates how to use a spermicide applicator.

Results from trials conducted among commercial sex workers are also difficult to interpret because of the sexual practices of these women, says Dr. Zeda Rosenberg of FHI, scientific director of the HIV Prevention Trials Network (HPTN), a research project involving FHI and other organizations to evaluate HIV prevention interventions, including experimental microbicides. "While commercial sex workers may be successful in negotiating condom and microbicide use with their clients," she says, "they tend not to use these products with their primary partners. Thus, while working, they may develop condom or microbicide-related vaginal irritation that increases their risk of HIV infection when they have unprotected sex with an infected primary partner."

For these reasons, testing the effectiveness of N-9 as a microbicide against HIV among women who use the product infrequently but are still at high risk of infection "would be useful," says Dr. Rosenberg.

Status of N-9 trials

Due to safety concerns, FHI and the other organizations involved in HPTN have discontinued testing N-9 as an agent for HIV prevention. A proposed HPTN study of a high-dose (100 mg) N-9 gel among some 4,500 HIV-negative women in Malawi and Zimbabwe will not proceed as planned.

An N-9 study in Cameroon by the Care and Health Program, a nongovernmental agency, and FHI evaluated the effectiveness of high-dose (100 mg) N-9 gel against male-to-female transmission of gonorrhea and chlamydia among 1,000 high-risk women. (The use of N-9 spermicide among volunteers in the study was nearly completed when the UNAIDS trial results were released.) There is no evidence that N-9 used relatively infrequently, as it was in this study, increases risk of HIV infection.

Meanwhile, FHI is conducting a randomized, controlled U.S. study to evaluate further the contraceptive efficacy and consistency of use of N-9 spermicide products in various doses and formulations. This trial involves women who are at low risk for HIV, unlike the high-risk study population in the UNAIDS study. Also, participants in the efficacy study are monogamous. "Nevertheless, we feel that it is appropriate to inform women in our trial

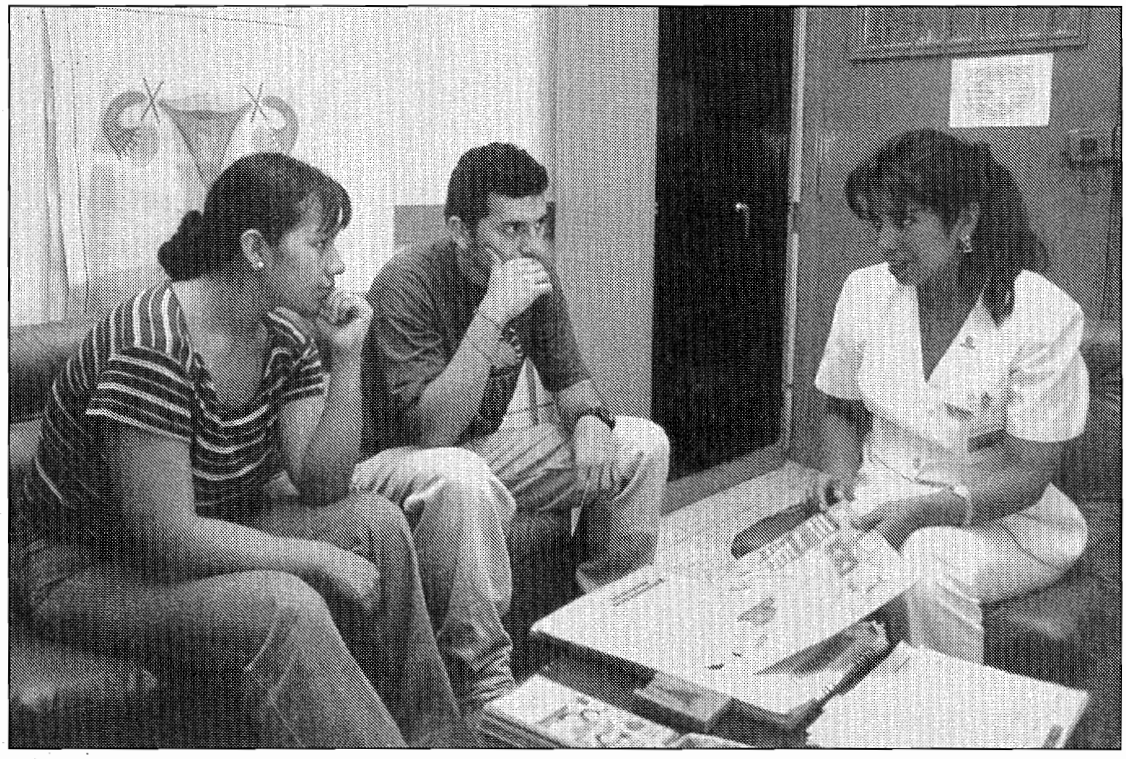
about the UNAIDS trial results," says Dr. Elizabeth Raymond of FHI, an obstetrician-gynecologist who is the study's principal investigator. "For women who are currently enrolled, we have issued a fact sheet informing them of the results and stressing the need to take precautions in situations of high risk for STI/HIV infection. For future participants, we have modified the existing informed consent form to include more information about spermicides and HIV."

Concerns raised by the UNAIDS study have fueled a sense of urgency to test experimental microbicidal candidates. Several products currently in advanced safety testing in women could proceed more quickly to combined safety and efficacy evaluation.

All microbicidal agents under scrutiny for advanced efficacy testing are unlikely to cause the vaginal irritation associated with N-9. Some of them are noncontraceptive. "This is very important," says Dr. Hitchcock, "since women throughout the world need a way to get pregnant without running the risk of becoming infected with HIV."

— *Kim Best*

RICHARD LORD



A COUPLE RECEIVES COUNSELING ABOUT FAMILY PLANNING CHOICES AT A CLINIC IN LIMA, PERU. RECENT PRELIMINARY RESEARCH SUGGESTS THAT PROVIDERS SHOULD DISCONTINUE COUNSELING PEOPLE WHO CANNOT USE CONDOMS TO CONSIDER USING NONOXYNOL-9 AS A MEANS OF REDUCING HIV RISKS.

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In some cultures, heterosexual anal intercourse has been practiced for many reasons, including pleasure, curiosity, preventing pregnancy, preserving virginity or avoiding contact with menstrual blood.[1]

Survey data from both developed and developing countries show that between 10 percent and 50 percent of sexually active adolescents and adults in the general population have engaged in heterosexual anal intercourse.[2] Most of these individuals do not use condoms to protect themselves from disease. Having unprotected, receptive anal sex presents more risk of sexual HIV transmission for women than does unprotected vaginal intercourse.[3] It is also associated with anorectal sexually transmitted infections (STIs), hepatitis B infection and human papilloma virus (HPV)-related anal lesions and cancer in women.[4]

"Not only is the prevalence of this culturally taboo practice probably underestimated in self-reports from survey data, but its health risks appear to be severely underestimated by a substantial proportion of sexually active women and men in North and Latin America as well as parts of South Asia, Africa, and other regions," says Dr. Daniel Halperin, assistant professor at the Center for AIDS Prevention (CAPS) and Medical Anthropology at the University of California, who has researched the subject.

"The idea that only vaginal HIV transmission causes heterosexual AIDS is perpetuated by the fact that HIV/STI prevention programs targeted at the general population do not specifically address anal sex. This typically stigmatized and hidden sexual practice should be given greater emphasis in AIDS/STI prevention, women's care, and other health promotion programs."

Condoms are typically used less frequently for anal sex than for vaginal intercourse, he says. In studies conducted in the developing world, approximately 70 percent to 90 percent of people engaging in heterosexual anal intercourse report never or inconsistently using condoms during the practice. The same pattern of lower condom use for anal sex has been documented in U.S. studies.[5]

LACK OF PROTECTION

Low levels of condom use for heterosexual anal sex are explained in part by concerns that male condoms are more likely to break or slip during anal sex than during vaginal sex.

Estimates of condom breakage and slippage rates associated with anal use are difficult to interpret. But, unless lubricant is used, anal sex has been associated with a much higher risk of condom slippage than has vaginal sex.[6] Meanwhile, studies consistently show that individuals with less condom experience report more condom breakage and slippage,[7] and heterosexual women generally have far less experience using condoms during anal intercourse than vaginal intercourse.

Given these condom-related concerns, researchers are increasingly interested in whether topical rectal microbicides might protect against HIV transmission during anal intercourse. Vaginal use of nonoxynol-9 (N-9) spermicidal products has been shown to be ineffective against HIV transmission and may even facilitate it, so anal use of these products is likely to be risky and is not recommended.[8] Researchers from the New York-based Population Council have also observed in a small study that rectal use of commercially available lubricants containing moderate to low dosages of N-9 causes sloughing of extensive areas of the rectal surface, a situation expected to increase risk for HIV/STI infection.[9]

"The results of our study were alarming," says Population Council senior scientist Dr. David Phillips, "although more research must be done to confirm them. We continue to look at N-9 because it remains available and people are still using it rectally. However, I would not recommend the rectal use of N-9." Meanwhile, he cautions, other lubricants marketed for use during anal intercourse are unregulated, untested and may irritate rectal tissue, at least as much as N-9 does.

— Kim Best

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Do Hormonals Affect STI Risks?

Several counseling options are likely if further research suggests an increased STI risk from hormonal methods.

Do hormonal contraceptives affect the acquisition and transmission of sexually transmitted infections (STIs), including HIV? If so, what are the implications for the provision of these methods, which are among the world's most widely used contraceptives?

Research is conflicting, largely due to study design difficulties. However, it is clear that hormonal contraceptives do not protect against HIV or other STIs. Thus, providers should counsel women at high risk of HIV/STIs to use a condom during each act of intercourse, even if they are already using a hormonal method.

In the absence of conclusive research that use of hormonal contraception increases STI risks, providers should also continue to promote hormonal contraception when it is appropriate for family planning. The World Health Organization's contraceptive eligibility guidelines place no restrictions on the use of any hormonal method by women who are at increased risk of HIV or other STIs.[1]

If further research shows hormonal contraception increases STI risks, providers likely will have several counseling options, says Dr. Charles Morrison, an FHI epidemiologist and principal investigator for a large study in Zimbabwe, Thailand and Uganda of the impact of oral contraceptive and injectable depot-medroxyprogesterone acetate (DMPA) use on HIV acquisition.

"First, women not exposed to HIV/STIs could continue to use any form of hormonal contraception that is appropriate for their family planning needs," he says. "Second, if a strong association were found between one of the hormonal methods and HIV (but not between another hormonal method and HIV), clients in countries with high HIV prevalence could obviously be counseled to use the method that does not present an increased risk."

If a strong association were found between HIV and both the pill and DMPA, women could be counseled to consider other effective contraceptives, such as intrauterine devices. For a woman still choosing hormonal contraception, it would be essential to counsel condom use for disease protection in addition to use of the hormonal method. Also, any risk associated with hormonal contraception would have to be carefully weighed against the risks of rejecting reliable contraception, and the risks associated with pregnancy itself, says Dr. Morrison.

Widely used methods

The most widely used hormonal contraceptives are oral contraceptives (which use a progestin alone or a combination of a progestin and an estrogen) and progestin-only injectables, primarily DMPA. Oral contraceptives, used by more than 100 million women worldwide in 2000,[2] are the most common modern contraceptive method used in sub-Saharan Africa, where

PETER ARMENIA

VIETNAMESE WOMEN VISIT A MARKET WITH FABRICS FOR SALE. THE WORLD HEALTH ORGANIZATION PLACES NO RESTRICTIONS ON HORMONAL CONTRACEPTIVE USE AMONG WOMEN AT RISK OF HIV OR OTHER STIS.

rates of new HIV infections are high even among "low-risk" family planning clients. In Southeast Asia and India — where the HIV epidemic is growing — a quarter and a half, respectively, of those women using a modern contraceptive method use the pill.[3] Progestin-only injectables are used by some 12 million women worldwide.[4]

Theoretically, these hormonal contraceptives have the potential to increase the risk of STI acquisition in a number of ways, since both estrogen and progestins affect the female genital tract. Oral contraceptives can cause cervical ectopy, a condition in which a specific type of cell that lines the inside of the cervical canal extends onto the outer surface of the cervix, where exposure to sexually transmitted pathogens is greater. Cervical ectopy appears to increase vulnerability to some STIs,[5] which, in turn, increases a woman's risk of HIV infection.[6] Hormones in the pill and injectables have been associated with changes in the immune system and, theoretically, could weaken it.[7] Also, use of progestins alone thins the lining of the vagina, possibly leaving it more susceptible to tears or abrasions through which STI pathogens could enter the body. Finally, while progestins alone may inhibit infection by thickening cervical mucus,[8] they can decrease vaginal acidity, a condition that facilitates infection.

Research suggests that oral contraceptive users are more likely to become infected with chlamydia than are non-users.[9] Whether cervical ectopy is directly associated with chlamydial infection, however, is unknown. Data also are conflicting as to whether hormonal contraception enhances infection with other STIs, such as gonorrhea. To address such gaps in knowledge, FHI is conducting among 1,000 U.S. women a prospective study of the association between DMPA or pill use, the development of cervical ectopy, and subsequent chlamydial and gonococcal infection. Results are expected in 2001.

Using the pill appears to reduce symptoms, as well as the incidence, of pelvic inflammatory disease (PID), caused by untreated gonococcal and chlamydial infection. But asymptomatic PID still may damage a woman's fallopian tubes, leaving her at risk for infertility.

Nearly all of some 30 studies of the association between hormonal contraception and HIV had major limitations, a team from FHI and the University of Washington, Seattle, WA, USA, concluded in 1998. A British researcher who reviewed the data from many of the same studies reached the same conclusion, noting that "no clear or consistent patterns emerge from these studies."[10] However, a significant association between pill use and increased HIV risk was found by University of Washington researchers when they analyzed 28 studies grouped by methodologic quality. When six of the eight best studies detected the association, researchers concluded that "for women

at risk of HIV infection, oral contraceptive use for prevention of pregnancy should be accompanied by condom use for prevention of HIV infection."[11]

Data from studies of progestin-only injectables and HIV/STI risks also are conflicting, and no published studies are available on the impact of Norplant, a progestin-only implant, on HIV acquisition. A 1996 study found an eight-fold increase in simian immunodeficiency virus (SIV) infection in SIV-exposed monkeys receiving implants that maintained high progestin levels in their blood, compared to a group of placebo control monkeys exposed to SIV at a stage of their menstrual cycle when natural progesterone levels were low. Researchers noted that enhanced HIV infection was strikingly correlated with progesterone-related thinning of the monkeys' vaginal lining.[12] However, monkeys exposed to SIV throughout the entire menstrual cycle had a much lower risk of infection, an important observation since women at risk for HIV infection probably are exposed to the virus throughout most of the menstrual cycle.[13]

In a recent study of the effect of one DMPA injection, women did not experience at one or three months the dramatic vaginal thinning previously seen in monkeys.[14] Another recent study showed that DMPA use among 20 women for two to three years did not affect the thickness of the vaginal lining.[15]

At a 1996 meeting, experts reviewed human study data and concluded that an association between hormonal contraceptive use and HIV infection was questionable. Obtaining more definitive information requires a large, prospective study of the impact of oral contraceptive and DMPA use on HIV infection among women in a low-risk, general population, concluded a 1996 National Institute of Child Health and Human Development (NICHD) panel.

The study that FHI is coordinating in Zimbabwe, Thailand and Uganda has been carefully designed to avoid many of the methodological pitfalls of earlier studies. Sponsored by NICHD and expected to be completed in 2003, the study will follow for 15 to 24 months about 6,000 low-risk, HIV-negative women seen at family planning, maternal/child health, and STI clinics. Ancillary studies will investigate whether hormonal contraception affects acquisition of herpes simplex virus (HSV), human papilloma virus (HPV) and bacterial vaginosis, and the role of these infections in HIV acquisition. In addition, FHI will investigate the role of hormonal contraception and HIV subtype on genital shedding of HIV among women who become infected during the study.

Use of the pill, use of DMPA, and pregnancy are all associated with greater cervical shedding of HSV, according to a recent study of 273 women in Mombasa, Kenya, who were infected with both HIV and HSV. "The increased frequency of HSV shedding in hormonal contraceptive users and pregnant women may reflect direct effects of the hormones on virus replication or effects on the immune system's ability to control virus reactivation," noted the study's authors.[16] However, results of studies of the association between hormonal contraception and cervical shedding of HIV are limited and inconclusive.

— Kim Best

BERYL GOLDBERG

A FAMILY PLANNING PROVIDER IN PERU EXPLAINS CONTRACEPTIVE CHOICES TO A CLIENT.

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CONTRACEPTIVE UPDATE

Oral Contraceptives and Breast Cancer Risks

A recent study suggests a link between high-dose combined oral contraceptives that were discontinued in most countries years ago and an increased risk of breast cancer among women with a strong family history of the disease.

Women in the United States who used oral contraceptives before 1975 and whose mothers or sisters had breast cancer showed a substantially increased risk of developing the cancer, according to scientists at the Mayo Clinic and University of Minnesota. Because of the study's limitations, pill use after 1975 among women with a strong family history of breast cancer could not be adequately evaluated. The scientists concluded further research was needed to assess this risk. Their findings were published in the October 11, 2000 issue of the *Journal of the American Medical Association.*[1]

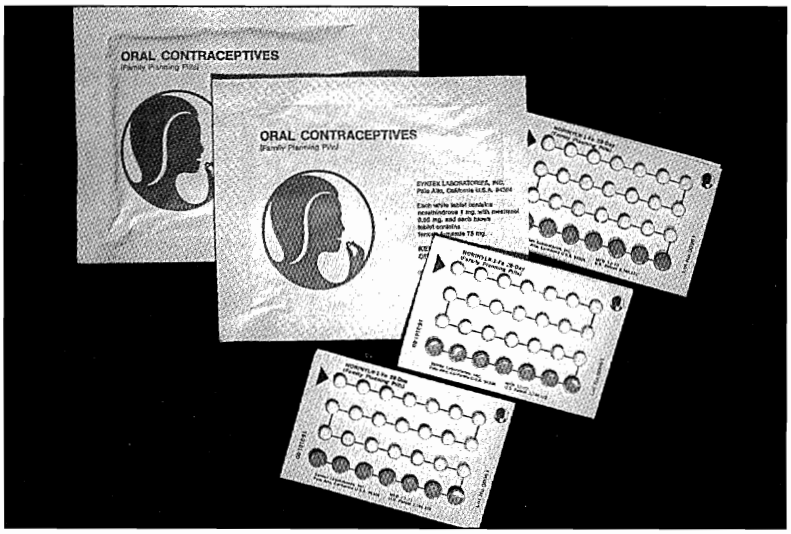
High-dose pills have not been available in most countries for more than a decade. If still available, women should use low-dose pills instead, especially if they have a family history of breast cancer. No studies suggest that today's low-dose combined oral contraceptives pose a cancer risk in any population.

Prior to 1975, oral contraceptives that combined an estrogen with a progestin contained relatively high doses of estrogen. In many countries, use of these high-dose pills was discontinued as lower-dose formulations were developed, but high-dose pills continued to be used in some locations. The high-dose pills that were used by women in the study contained up to 150 µg of the estrogen mestranol. Most pills used since 1975 contain 50 µg or less of a different estrogen, ethinyl estradiol.

The study tracked 394 sisters and daughters, and 3,002 granddaughters and nieces, of women who were diagnosed with breast cancer between 1944 and 1952. It also included 2,754 women who married into the families of breast cancer patients. Women in the study were interviewed between 1991 and 1996.

The sisters and daughters of breast cancer patients who took high-dose pills prior to 1975 and who had three blood relatives with breast cancer faced nearly a five-fold increased risk of developing the cancer, compared with women who did not use the pills. The risk was more than 11 times greater for high-dose users with five blood relatives with breast cancer. The results are similar to previous findings that link women with a family history of breast cancer to a higher risk of breast cancer from pill use.[2]

The women found at most risk of breast cancer were sisters or daughters of women with breast cancer. Granddaughters, nieces and women related by marriage to women who developed breast cancer were not at a significantly greater risk even if they had used higher dose pills prior to 1975. In other words, a family history of breast cancer alone does not necessarily mean increased risk. However, there is a possibility that rates of breast cancer among granddaughters may have been lower because these women were at a younger age when studied, and breast cancer typically develops later in life.



JHU/CCP

HIGH-DOSE "BLUE LADY" CONTRACEPTIVE PILLS, WHICH ARE NO LONGER PRODUCED.

PROTECTIVE BENEFITS

Other research has shown that oral contraceptives provide protection against ovarian cancer. Ovarian cancer is harder to detect in the early stages than breast cancer and is often fatal. The protective effect against ovarian cancer may last as long as 15 years after stopping pill use. Women who have used combined oral contraceptives for four years are 30 percent less likely to develop ovarian cancer than women who have never used the pill; women using pills five to 11 years are 60 percent less likely; and for 12 or more years of use they are 80 percent less likely.[3]

Because of protective effects, some women with a family history of ovarian cancer take the pills to reduce their risk of ovarian cancer. There is also evidence that the pill protects against cancer of the uterine lining (endometrial cancer).[4] Pill use also has other health benefits. Pills protect against ectopic pregnancy and may protect against fragile bones (osteoporosis) and endometriosis.[5]

Some women, however, should not use combined oral contraceptives. Some examples include women who are heavy smokers and are over 35 years old; women who have high blood pressure; women who have a history of deep-vein thrombosis, heart attack or stroke; or women over 35 years old who experience severe headaches with focal neurological symptoms (such as visual disturbances). Moreover, pill use is not recommended for women who have certain preexisting conditions such as current breast cancer, benign liver tumors, liver cancer or active viral hepatitis.[6]

— Ellen Devlin

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News Briefs

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PROTECTAID SPONGE AVAILABLE IN EUROPE

In October 2000, the Protectaid contraceptive sponge became available in the United Kingdom and Spain, the first European countries where it is sold. The device has been available previously in Canada and Hong Kong.

The sponge contains three spermicides used in relatively small concentrations: nonoxynol-9, sodium cholate and benzalkonium chloride. Because sponges can be inserted hours in advance, they appeal to some users. Protectaid must be inserted at least 15 minutes prior to intercourse for correct use and is effective for up to six hours. It can be left in place for up to 12 hours and used multiple times. Like other sponges, Protectaid blocks the cervix and traps sperm, in addition to releasing spermicides.

Resources

Gender Perspective Training Manual

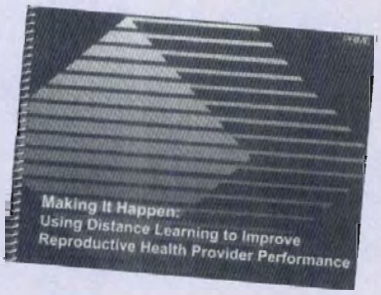
Rethinking Differences and Rights in Sexual and Reproductive Health is a training manual designed to improve the quality of sexual and reproductive health care. It provides a conceptual framework and four practical modules, each of which takes about four hours to complete. The modules include discussions of gender; sexual and reproductive health and rights; compassionate and quality care; and institutional management of sexual and reproductive health programs. Made available in English and Spanish by the Bolivian Center for Information and Development of Women (CIDEM) and FHI, the manual is free. To obtain a copy, please contact: Publications Coordinator, Family Health International, P.O. Box 13950, Research Triangle Park, NC 27709, USA. Telephone: (919) 544-7040. Fax: (919) 544-7261. E-mail: publications@fhi.org.

Revised Medical Reference Book

The third edition of *Diagnosis and Management of Sexually Transmitted Diseases in Southern Africa* is available. The new edition, by the Reference Centre of the South African Institute for Medical Research, offers color photographs depicting clinical diagnostic procedures for sexually transmitted infections (STIs). In addition to chapters on the management of specific diseases, it includes information about the interaction of HIV with other STIs. A copy costs R 30, plus postage of R 5 for orders inside South Africa and R 80 for airmail postage outside South Africa. For instructions on how to order, including payment, please contact: Glenda Fehler, STD Reference Centre, South African Institute for Medical Research, P.O. Box 1038, Johannesburg 2000, South Africa. E-mail: glendaf@mail.saimr.wits.ac.za.

WHO Reproductive Health Library

The third CD-ROM in the World Health Organization's library on reproductive health in developing countries is available. *The WHO Reproductive Health Library No. 3* contains 51 reviews of evidence-based solutions to reproductive health problems. Topics include: emergency contraception, antibiotics for incomplete abortion or before cesarean section, and treatments for very high blood pressure during pregnancy. The diskette requires a computer with a 486SX processor or higher, at least 8 MB of RAM, at least 8 MB of free space on the hard disk, and Microsoft Windows 3.0 or higher software. Available in English and Spanish, it is free to health workers in developing countries by contacting Jitendra Khanna at karnerc@who.ch. Fax: (41) 22-791-4171.

Guide to Distance Learning

Making It Happen: Using Distance Learning to Improve Reproductive Health Provider Performance presents a step-by-step explanation of distance learning for reproductive health providers, with detailed examples from program experiences in developing countries. Produced by Intrah and the PRIME Project at the University of North Carolina, it seeks to improve programs in low-resource settings and is free. To obtain a copy, please contact: Intrah, University of North Carolina, 1700 Airport Road, Suite 300, Chapel Hill, NC 27599-8100, USA. E-mail: intrah@intrah.org. Available on-line at *http://www.intrah.org* or *http://www.prime2.org*.