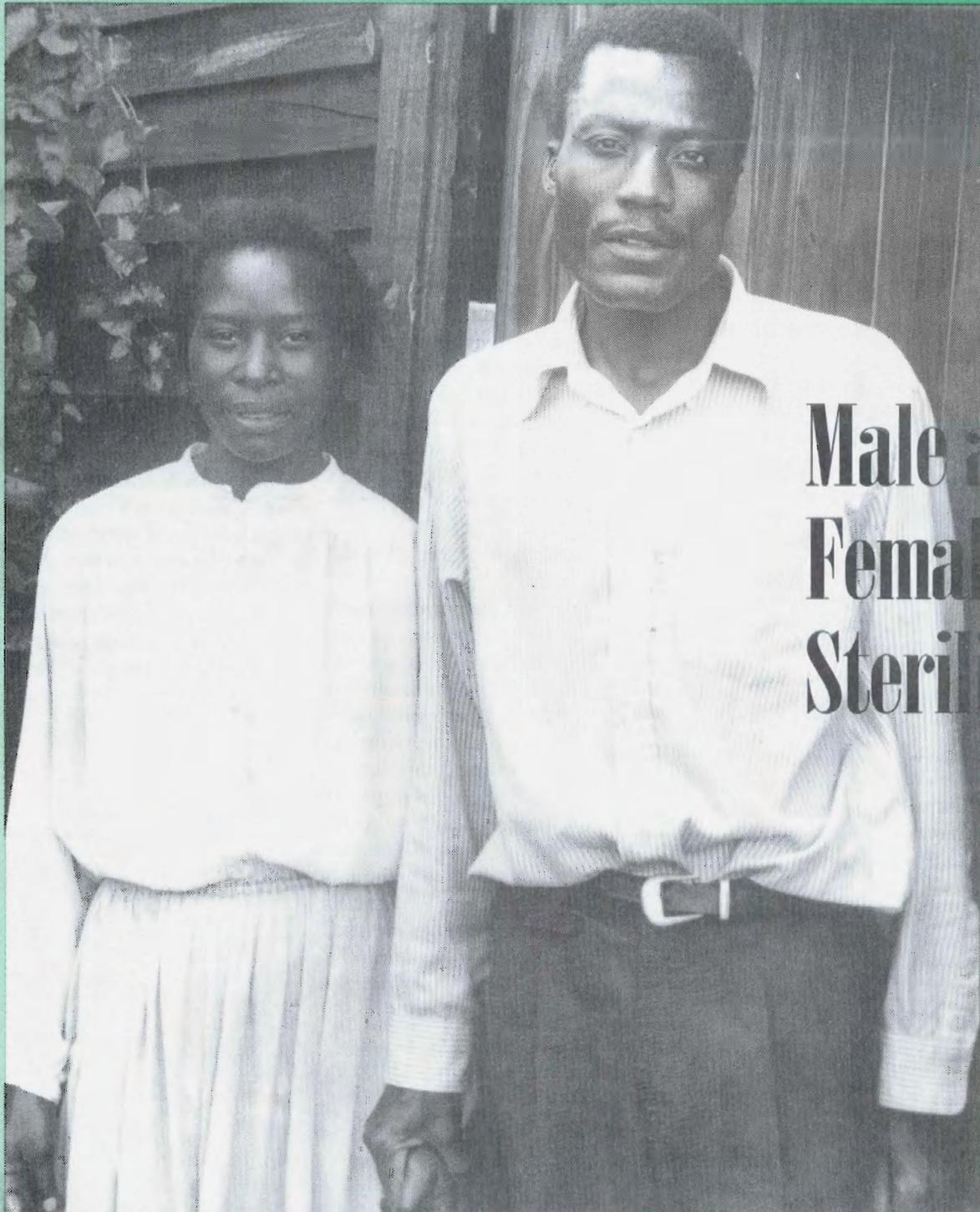


Network

FAMILY HEALTH INTERNATIONAL, VOL. 18 NO. 1, FALL 1997



Male and Female Sterilization

News Briefs

IUD USE AMONG HIV-INFECTED WOMEN

The intrauterine device (IUD) may be an appropriate contraceptive choice for HIV-infected women, according to recent research.

Findings by FHI and the University of Nairobi, presented during the August congress of the Fédération Internationale de Gynécologie et d'Obstétrique (FIGO) held in Denmark, are based on research at two family planning clinics in Nairobi, Kenya. No difference in the rates of complications was observed between 156 HIV-infected and 493 uninfected IUD users. During four months of observation, those with HIV infections showed no increased risks of pelvic inflammatory disease (PID); IUD removals for pain, infection or bleeding; pregnancy; or expulsion compared with the uninfected women.

"Preventing transmission of HIV from mother to infant is extremely important," says Dr. Charles S. Morrison, an FHI epidemiologist who directed the study. "Providing safe and effective contraceptive options is important because that will enable HIV-positive women to prevent unwanted pregnancies."

Currently, World Health Organization guidelines advise that IUDs usually should not be recommended to HIV-positive women based on theoretical concerns about increased risks of sexually transmitted diseases and PID because of suppressed immunological response.

The FHI-University of Nairobi data show that IUDs do not increase complications among HIV-infected women in the short-term. Two-year data are being collected to examine long-term complications associated with IUD use among HIV-infected women, but other long-term studies are needed to determine if IUD use affects the progression of the virus and other health concerns. The study is financed by the U.S. Agency for International Development and the American Foundation for AIDS Research.

POSTPARTUM BLEEDING LASTS A MONTH OR MORE

Vaginal bleeding or spotting after childbirth may last longer than commonly thought, a recent FHI study shows.

Women are often advised to expect postpartum bleeding for about two weeks, but new research shows most breastfeeding women bleed for about a month after pregnancy, and many bleed for six weeks. "Women can expect to bleed for longer than is generally advised," says Cynthia M. Visness, FHI research associate and lead author of the study. "It is also quite common for the bleeding to stop and start again."

Visness followed 477 breastfeeding women, from 18 to 35 years old, in the Philippines for one year after delivery. On average, postpartum bleeding lasted for 27 days, and the duration of bleeding ranged from

five to 90 days after childbirth. Also known as lochia, postpartum bleeding is associated with the normal healing process and typically stops prior to the return of menstruation.

Many providers regard postpartum bleeding longer than two weeks as an indication of medical complications. While prolonged bleeding may indicate a retained placenta or infection of the endometrium, many women do not have health problems, Visness says.

The study, supported by the U.S. Agency for International Development, also confirms that bleeding in the first eight weeks after pregnancy does not usually indicate a return to fertility among women who are fully breastfeeding. Among 126 women who experienced such bleeding, it represented the start of a normal menstrual cycle in only 10 women. Most fully breastfeeding women developed amenorrhea that lasted for five to 12 months and none conceived in the early postpartum months.

This information supports current guidance to women using the lactational amenorrhea method (LAM), a natural family planning approach that uses the contraceptive effects from fully breastfeeding during the first six months after delivery, provided a woman's menses has not resumed. Women who use LAM are advised not to consider bleeding during the first eight weeks as a return of menses. The study was published in the February 1997 issue of *Obstetrics & Gynecology*.

MANY WOMEN ABUSED BY PARTNERS

One-fourth to one-half of all women worldwide have been physically abused by their husbands or sexual partners, according to a recent report by the United Nations Children's Fund (UNICEF).

A section of the report, *Progress of Nations 1997*, uses data from a World Bank analysis of 35 studies. Catharine Way of UNICEF, editor, notes that reliable and complete data are scarce, and that such abuses often go unreported.

Fatal examples of abuse include "honor killings," in which husbands in some societies are permitted to beat or kill their wives for being disloyal or disobedient, and "dowry deaths," the killing of women by their husbands or in-laws because their dowries are considered inadequate. Violence also includes forced sexual intercourse by an abusive partner.

Very few abused women are believed to report domestic violence, and abuse may also jeopardize the well-being of children, says the report.

Network is published quarterly in English, Spanish and French by Family Health International and is distributed without charge. Periodicals postage is paid at Durham, NC and additional mailing offices. POSTMASTER: Send requests, queries and address corrections to:

Network

Family Health International
P.O. Box 13950
Research Triangle Park,
North Carolina 27709 USA

To obtain a free subscription, please write to Ms. Debbie Crumpler at the above address.

Phone: (919) 544-7040
Fax: (919) 544-7261
Home page: <http://www.fhi.org>

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Family Health International is a nonprofit research and technical assistance organization dedicated to contraceptive development, family planning, reproductive health and AIDS prevention around the world.

Network is supported in part by the U.S. Agency for International Development. The contents do not necessarily reflect FHI or USAID policy.



ISSN 0270-3637
USPS 696-610

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Printed on recycled paper

Network

FAMILY HEALTH INTERNATIONAL, VOL. 18 NO.1, FALL 1997

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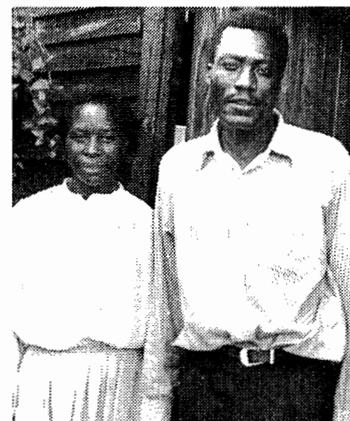
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A couple from a settlement on the outskirts of Harare, Zimbabwe are portrayed in the cover photograph by Dr. Cynthia Waszak of FHI.



Contraceptive Needs after Age 40

As they pass the age of 40, women and men continue to be fertile and sexually active, and up to half of women are able to become pregnant until well into their fifth decade.¹ But pregnancy-related risks rise as much as 50-fold for this age group compared with women in their twenties.²

"The risk of hemorrhage is higher during and after delivery" for women over 40, says Dr. Judith Fortney, an FHI research scientist who studies maternal health. "And some women this age have chronic underlying conditions, such as hypertension, diabetes and heart disease" that make their pregnancies riskier. Late pregnancy can be dangerous for the fetus and infant as well. Women over 40 are more likely to miscarry or to bear children with birth defects, including Down's syndrome (a form of mental retardation), and infants born to older women have a higher perinatal mortality rate. The risk of birth defects in an infant also increases with the age of the father, and with an older woman it is more likely that her partner will be older.

Women typically reach menopause — the end of their menstrual periods and child-bearing capacity — between the ages of 45 and 55. While their fecundity declines after age 35, "plenty of women do get pregnant," Dr. Fortney says. "There is a huge variability in individual fertility" among women.

Although there is a trend in developing countries toward postponing childbearing, an unexpected pregnancy late in life is an unwelcome event for many women. Women over 40 are more inclined to choose abortion when they find they are pregnant than those in their twenties and thirties. In 1992, more than a third of pregnant U.S. women between the ages of 40 and 44 chose induced

abortion, a higher rate than any other age group except for pregnant women 19 and under, says Dr. Stanley Henshaw, deputy director of research at the New York-based Alan Guttmacher Institute.

"Women over 40 are still in need of effective contraception," says Dr. Carlos Huezo, medical director of the International Planned Parenthood Federation (IPPF), based in London. "Providers should be prepared to assist these women in making an appropriate method choice according to their circumstances and needs." Men can also play a vital role, he says, by supporting their partners in choosing good options or by practicing contraception themselves. For men, fertility continues through most of their adult lives. While they can keep using the four contraceptive methods available to them — condoms, vasectomy, periodic abstinence and withdrawal — they face different issues as they grow older.

The risk of birth defects in an infant also increases with the age of the father, Dr. Huezo says. "And with an older man, it is more likely that his partner will be older" so the couple must take into account the health restrictions on certain contraceptives, he says.

Providers must screen carefully for health conditions that may increase the risk of using a contraceptive method, Dr. Huezo says. For example, high blood pressure, diabetes, smoking and a history of cardiovascular disorders increase the risk of using hormonal contraceptives containing estrogen (combined oral contraceptives and certain injectables). Unexplained bleeding is particularly important, because it could be a symptom of endometrial or ovarian cancer, which become more common as women approach menopause.

In addition to looking at health factors, family planning providers should address other issues. What is the couple's preference for a contraceptive method? Have they finished adding to their family? Are they interested in a permanent or temporary method of contraception? How sexually active are they? What contraceptives have they used in the past, and what has been their experience? What is their risk of sexually transmitted diseases (STDs)?

"People make assumptions about older couples — that women quit having sex at 40, or that women over 40 are at no risk of STDs — but that is not true," Dr. Fortney says. "Providers should always ask."

METHODS FOR OLDER COUPLES

In general, perimenopausal women — those approaching menopause — have a broader range of contraceptive methods available to them than younger women, Dr. Fortney says. First, they are more likely to consider permanent methods, such as surgical sterilization. Second, methods that might not be appealing in youth because of their higher failure rate — barrier methods, for

example — become more suitable because of older women's low fecundity. But because of the physical changes associated with menopause, certain contraceptive methods have specific advantages and disadvantages.

In the perimenopause, a woman's ovaries slow estrogen production, leading to widespread physical changes. Her menstrual periods may become irregular — either lengthening or shortening, and increasing or decreasing in blood loss. Even with irregular periods, a woman can still become pregnant. And such irregularity makes natural family planning difficult to use.

A woman may also experience other symptoms as menopause approaches. Her vagina may lose lubrication, she may find that intercourse becomes painful, and she may begin to experience urinary incontinence, hot flashes or other symptoms. In addition, the loss of estrogen causes less obvious internal shifts. The bones may begin to thin, and heart disease becomes more prevalent. Quitting smoking, getting regular exercise and eating a nutritious diet can help a woman prepare for menopause.³

For older men or women who have completed their families, surgical sterilization is an excellent contraceptive method. In the United States, about 47 percent of women at risk of pregnancy between 40 and 44 choose it.⁴ It is very effective for all age groups, and the failure rates are lowest for older women, according to a recent study of more than 10,000 women by the U.S. Centers for Disease Control and Prevention and Princeton University.⁵ Women sterilized at age 34 or older were less likely to become pregnant than those who were sterilized between 28 and 33, even after adjusting for sterilization method, race and study site, the researchers found. However, if sterilization fails, a woman and her provider need to be aware of the possibility of ectopic pregnancy.

Surgical sterilization protects against ovarian cancer, a concern for older women. Poststerilization regret is also less likely for these women, says Dr. Sangeeta Pati of AVSC International.

Still, surgery carries a slight risk, which should be balanced against the number of years a woman will benefit from the procedure. For example, if she is in her late forties, another method might be more suitable.

"Long-term non-surgical methods like the IUD are also good options for the extremely obese, those with respiratory problems and others who are not good surgical candidates," Dr. Pati says. But women with these characteristics should not be ruled out automatically as candidates for surgery, she says, because unintended pregnancy may carry even higher risks than surgery for them.

Vasectomy is even safer and easier, and recovery is quicker, than with female surgical sterilization. Vasectomy can be done in an office setting with a local anesthetic and without an incision. "Surgical male and female sterilization should be considered permanent procedures and are not good options for those who are unsure, in unstable relationships or in a midlife crisis. Assessing this should be part of standard counseling," Dr. Pati says.

IMPACT VISUALS/SONJA ISKOV



WOMEN APPROACHING MENOPAUSE GENERALLY HAVE MORE CONTRACEPTIVE OPTIONS THAN YOUNGER WOMEN.

IUD

For an older woman who wants a long-term method but doesn't want to undergo surgery, an IUD may serve well, as long as she faces no risk of STDs. IUDs have few systemic effects, and some Copper T IUDs work for up to 10 years. A woman who chooses this method past age 40 can consider it permanent because it likely will carry her through menopause.

One drawback of the IUD, however, is that it can increase bleeding. Such bleeding must be examined, especially in older women, because it can indicate a reproductive tract cancer or other disorder. For women who risk anemia and who have increased bleeding not due to cancer, iron supplements are an important adjunct to IUD use. Providers also must screen IUD users to be sure they do not have uterine fibroids — benign growths that can distort the shape of the uterus and prevent proper IUD placement.

IUDs that release levonorgestrel can decrease bleeding. These IUDs also appear to reduce uterine fibroids and the risk of hysterectomy when compared with copper IUD use, says Irving Sivin, a Population Council senior scientist.⁶

BARRIER METHODS

Women who have not completed their childbearing, or who have sexual intercourse infrequently and want a coitus-dependent method, might find barrier methods a good option. "Barrier methods have few medical contraindications," says Dr. Paul Feldblum, an FHI researcher who studies these methods. Diaphragms and condoms are about twice as effective for women over 35 as for younger ones, he says. Still, barrier methods do have a higher failure rate than most other contraceptives.

Besides their safety, barrier methods have non-contraceptive benefits. The spermicides used with diaphragms, and on some lubricated condoms, can substitute for the vaginal lubrication that diminishes as women age. Barrier methods also protect against STDs, which may be a concern for some older men and women.

One drawback with diaphragms is that if women have borne many children or are beginning to lose vaginal muscle tone because

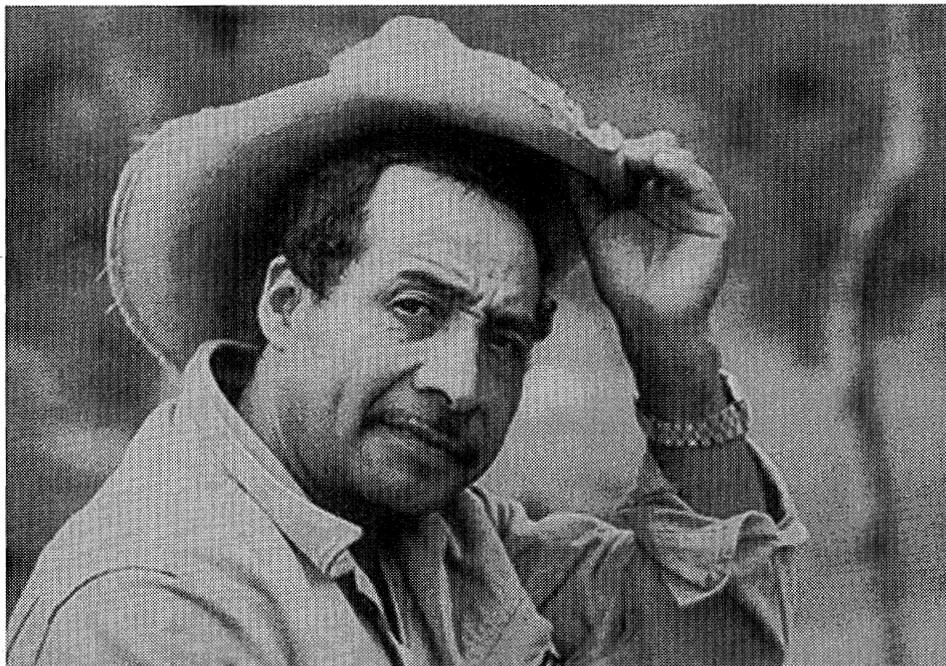
of perimenopausal changes, diaphragms do not fit as well and may dislodge. Women who have urethral problems due to estrogen loss can develop infections when using a diaphragm.

As men age, they sometimes have a more difficult time attaining and maintaining an erection, so they may not use a condom as effectively. A condom must be placed on an erect penis and the erection must be maintained, otherwise the condom can slip off. Another difficulty for older men is that condoms can decrease penile sensitivity, which also declines with age.

Women with existing cardiovascular disorders, high blood pressure, long-term diabetes and some other conditions should not use methods containing estrogen.⁸ In the past, all older women were discouraged from using combined hormonal methods because of an increased risk of cardiovascular disease.

More recent studies have shown that, while such problems become more frequent as women age, the greatest increase is among heavy smokers and those with pre-existing cardiovascular disorders. "However, if [women over 35] do not smoke and have no other risk factors for cardiovascular disease, such as hypertension and diabetes, the

INTER-AMERICAN DEVELOPMENT BANK/DAVID MANGURIAN



MEN PLAY A VITAL ROLE BY SUPPORTING THEIR PARTNERS' NEED FOR APPROPRIATE CONTRACEPTION, WHICH COULD INCLUDE THE USE OF MALE METHODS.

HORMONAL METHODS

Combined pills and injectables are highly effective for older women. In addition, they offer many non-contraceptive benefits. They prevent endometrial and ovarian cancer, pelvic infection and ectopic pregnancy; reduce benign growths in the breasts, ovaries and uterus; and cut back on bleeding and pain during menstruation. Combined pills prevent bone loss.⁷

increased risk is very small," according to an IPPF statement on contraception for women over 35.⁹ While there are no large-scale studies looking at combined injectables and cardiovascular disease risk, laboratory studies indicate they have little effect on metabolism or coagulation factors, the IPPF statement says.

Another question about combined hormonal methods is whether they increase the risk of breast cancer. A recent analysis of 54

studies including 153,536 women from around the world indicated that those who use combined hormonal contraceptives have a slightly increased risk of breast cancer during use and for up to 10 years after they stop.¹⁰

This finding is of particular concern to older women, because they have an increased absolute risk of breast cancer due to age. However, for younger women, the added risk from hormones is relatively small. For all women, these concerns must be balanced against the higher risks of unwanted pregnancy. Also, tumors in oral contraceptive users are more likely to be confined to the breast, and so are less dangerous than those that have spread elsewhere in the body.¹¹

One advantage of combined pills for perimenopausal women is that they contain similar combinations, although greater amounts, of hormones given to women after menopause to prevent osteoporosis, reduce the risk of heart disease and treat menopausal symptoms. Some companies and non-profit organizations are working to develop combined hormonal pills that could be used for contraception during perimenopause and continued for hormone replacement after the last menstrual period, says Dr. Michael Edwin Kafrissen, vice-president of Ortho-McNeil Pharmaceutical, based in New Jersey.

Women who cannot use estrogen for health reasons, or who prefer not to because of certain side effects, can use progestin-only methods. These methods, including pills, injectables, and implants, are very effective for older women, and apparently do not carry the risk of heart disease due to estrogen. However, irregular bleeding caused by these methods can mimic gynecological disorders.

Progestin-only pills are a good choice for women who like using oral contraceptives but cannot use estrogen. For women ages 40 to 44, the pregnancy rate is less than one per 100 woman years of use — about as effective as combined pills for a 25-year-old.¹² POPs contain a very small amount of progestin, even less than is in the combined pills. They must be taken faithfully at about the same time every day, or a pregnancy can result.

Depot-medroxyprogesterone acetate (DMPA or Depo-Provera) is a popular method for older women in many developing countries, says Dr. Olav Meirik, chief of the World Health Organization unit of epidemiological research in reproductive health. The three-month injectable is effective, discreet and simple to use. However, at least one study indicated that DMPA may reduce bone density, an important consideration for women as they approach menopause.¹³ This study included largely younger women, and more research is needed to examine the relationship between DMPA use and bone density in all women, Dr. Meirik says.

Norplant may serve as a "permanent" method for some older women, because it works for five years. No studies have indicated that Norplant causes problems with loss of bone density, Dr. Meirik says.

Besides learning which methods are most suitable, clients over 40 also need to know when to stop using certain methods. Hormonal methods, for example, can mask the onset of menopause.

IPPF recommends that women stop taking combined pills at age 50 and then, when possible, receive a follicle stimulating-hormone (FSH) test three months later. Levels of FSH, a hormone that triggers a complex hormonal cascade governing the menstrual cycle, increase after menopause. POP users over 45 should continue taking pills until their menstrual bleeding stops. Then they should have an FSH test to determine whether they have reached menopause. If not, they should resume taking pills. IUDs should be removed after menopause, to keep them from being lodged in the uterine wall because of changes brought on by dropping estrogen.

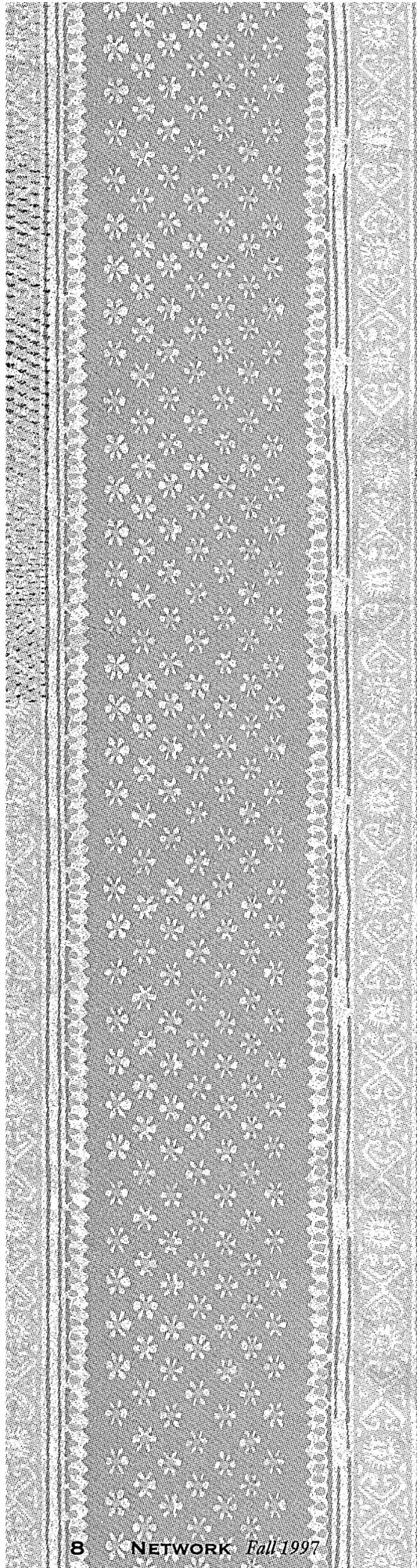
Providers can help women prepare for menopause by letting them know what it involves and that it is simply a stage of life. Many providers are not accustomed to answering questions about older women's physiology, says Dr. Huezio of IPPF. "It is important to educate them so they can make the methods as safe as possible," he says. "They can assess the risks and benefits jointly with the client, and then allow the client to take the lead in deciding."

— Carol Lynn Blaney

Carol Lynn Blaney, a former Network staff writer, is a science writer based in San Jose, CA, USA.

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Female Sterilization Safe, Very Effective

While new data suggest rare pregnancies occur years later, sterilization remains highly effective.

Compared with other contraceptive methods, voluntary female sterilization is highly effective and convenient. It is also popular, being the most widely used contraceptive method worldwide with more than 150 million users.¹

Sterilization is free from the side effects associated with most temporary methods, does not interfere with sexual intercourse, and does not require routine follow-up care or prescription refills. Yet, because this method is permanent and involves surgery, it is not appropriate for every client. Long-term reversible methods, such as the intrauterine device (IUD), injectables or implants, allow couples the opportunity to have children in the future and may be just as desirable or convenient for some women. Clients interested in sterilization should compare this permanent method with reversible options and be encouraged to select the most appropriate method for their circumstances from a range of contraceptive choices.

Sterilization counseling must be done carefully and may require more time than counseling for other contraceptive methods. Young women, in particular, may need extra time considering future life goals and alternative contraceptive options to avoid the possibility of regret later in life. Young women are more likely than older women to be unhappy later about their decision to terminate fertility.²

"Each case has to be taken on an individual basis," says Dr. Sangeeta Pati, medical associate at AVSC International (AVSC), a New York-based nonprofit organization

that works worldwide to improve reproductive health care, with extensive experience in helping providers to maintain quality sterilization services. "If you look at the data, women sterilized at a younger age have much higher rates of regret and pregnancy. Now, knowing what we know, AVSC is recommending that in counseling women under 35, one has to think seriously about whether another long-term method, such as the IUD, is a better option. The most important thing is that the client has choices."

LONG-TERM EFFECTIVENESS

While female sterilization is generally very effective, a few sterilization clients experience unintended pregnancies. New data show this method is slightly less effective than previously thought.

Scientists once thought that the risk of pregnancy virtually disappeared within a year or two after sterilization, but a recent study sponsored by the U.S. Centers for Disease Control and Prevention (CDC) shows the risk of pregnancy continues for years. The combined 10-year pregnancy rate for various methods of tubal occlusion used by 10,685 women in the United States was 1.8 per 100 women,³ comparable to the 10-year pregnancy rate for the copper T IUD of 2.0 pregnancies per 100 women.⁴

However, long-term effectiveness differs among specific categories of sterilized women. For women 34 and older, sterilization is one of the most effective of all contraceptive methods, with a 0.7 percent failure rate over

10 years. But younger women, ages 18 to 33, have more than three times that pregnancy risk, at 2.6 percent over 10 years of use, according to the CDC study. Also, among six ways to perform a tubal occlusion that were followed in the study, the use of spring clips (like the Hulka clip) showed the highest pregnancy rates after 10 years, at about 3.7 percent for all women. The study noted that the higher failure rate underscored the need for proper technique in applying clips on the fallopian tubes.

"We have been underestimating the likelihood that pregnancy will occur years after sterilization. It does not change our understanding that this is a very safe and effective procedure," says Dr. Herbert Peterson, principal investigator of the long-term efficacy analysis and chief of women's health and fertility at CDC in Atlanta. "It does tell us that failures, including ectopic pregnancies, can occur many years after sterilization."

While the long-term pregnancy rate for female sterilization is higher than previously believed, this method is at least as effective as most reversible long-term contraceptives. About one in 200 sterilized women become pregnant during the first year after the procedure, or 0.55 pregnancies per 100 women. This compares favorably with the under 1 percent one-year pregnancy rates for the subdermal implant Norplant, the three-month injectable depot-medroxyprogesterone acetate (DMPA) and the copper T 380 intrauterine device.

RISKS

When sterilized women do get pregnant, there is a high risk that pregnancies may be ectopic. Counseling should encourage sterilized women to seek medical attention promptly if they suspect they have become pregnant, since an ectopic pregnancy can be fatal. Signs of ectopic pregnancy include missed menstrual periods, reduced menstrual flow, fainting, or lower abdominal pain. Women sterilized under age 30 are at least twice as likely as women over 30 to have an ectopic pregnancy, probably because their fecundity leads to more method failures.⁵

While female sterilization is generally very safe, rare fatalities or long-term injuries occur due to surgery. About five per 100,000 sterilized women die in developing countries.

The primary causes of death are cardiac or respiratory arrest resulting from anesthesia problems or unintended injury during surgery. In a retrospective study examining female sterilization services in 50 countries from 1973 to 1988, general anesthesia was found to be the most common cause of sterilization-related mortality, followed closely by deaths from intestinal injuries and deaths from infection. Other leading causes were deaths from abdominal hemorrhage, dehydration or allergic reactions to sedatives.⁶

"To improve safety, the emphasis should be on using local anesthesia whenever appropriate, instead of general anesthesia," says Dr. David Sokal of FHI, who has analyzed sterilization research data extensively. "Local anesthesia minimizes the potential for complications." However, local anesthesia is not appropriate for all women. Some women are allergic to local anesthetics, and obese women typically require general anesthesia because the operation is more difficult to perform on them.

The increased use of local anesthesia and improved infection control in many countries during the 1980s significantly reduced fatality rates associated with sterilization. Other improvements have included the establishment of safe upper limits of the dose for common anesthetics, better ways to monitor vital signs, and increased training in the management of cardiorespiratory depression.

However, local anesthesia can also involve complications. A sedative used with local anesthesia to reduce pain or discomfort may be incompatible with a patient's medical history or may be given in too large an amount. Risks are lower when local anesthesia is used without additional sedatives and providers closely monitor vital signs.

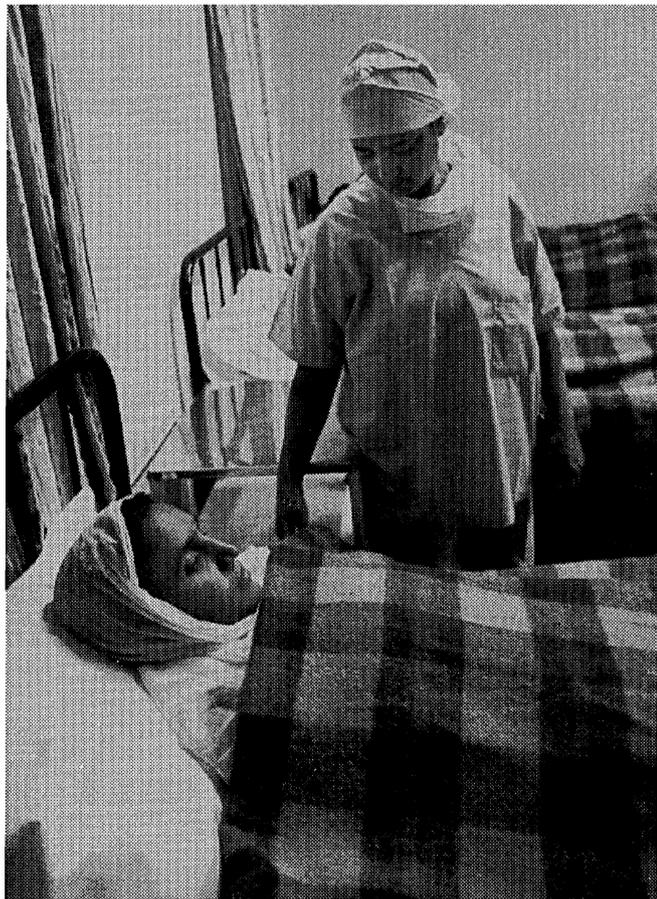
As with all surgery, tubal ligation exposes patients to a slight risk of unintended injury to nearby organs. For female sterilization, bowel injury is one of the most serious, since injuring the bowels allows bacteria to

enter the abdominal cavity, causing severe infection (peritonitis). Fortunately, the rate of bowel injury has decreased in recent years due to improved surgical techniques and training. For example, unipolar coagulation, which uses electrical current to burn the tubes closed, is rarely performed because this procedure increases the risk of bowel injury. It has been replaced by the safer bipolar technique.

Other injuries that can occur during female sterilization are perforation of the uterus or the accidental cutting of a major vessel. If severed, the vessel can cause internal hemorrhaging. If not treated, hemorrhaging can lead to shock or death. If the uterus itself is punctured, the organ will normally heal on its own. Profuse bleeding can result if a provider fails to close the fallopian tubes securely.

Infections of the abdomen, pelvic area or wound can be prevented by screening clients for pre-existing infections and using good hygiene in the operating room. When infections do occur, most can be treated with antibiotics. Patients should see their doctor if they have serious abdominal pain, fever or

IMPACT VISUALS/SEAN SPRAGUE



A WOMAN RESTS AT A HOSPITAL IN PAKISTAN FOLLOWING STERILIZATION SURGERY.

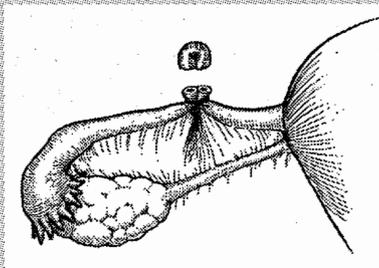
FEMALE STERILIZATION OCCLUSION TECHNIQUES

Female sterilization prevents pregnancy by occluding or mechanically blocking the fallopian tubes. There are several different occlusion techniques — tubes can be tied or “ligated,” blocked with mechanical devices such as clips or rings, or scarred closed with electric current.

Gaining access to the tubes typically involves one of two types of incisions or approaches — minilaparotomy or laparoscopy.

Minilaparotomy, or minilap, the most common approach, involves a 5 cm incision in the abdomen. The fallopian tubes are accessed through this small incision. Minilap is easier to provide in remote clinics or health centers because it does not require any special equipment.

AVSC INTERNATIONAL/D. ROSENZWEIG



POMEROY METHOD

Laparoscopy involves using an instrument called a laparoscope, inserted into the abdomen to see the tubes and guide the occlusion. The incision is much smaller, only

about 1 cm. Using the laparoscope, a narrow stainless-steel tube with a fiber-optic cable, requires more extensive medical facilities.

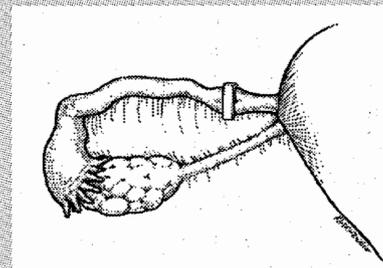
Four occlusion methods are widely performed, typically on the isthmus portion of the fallopian tube, the thin portion of the tube closest to the uterus:

Partial salpingectomy — In partial salpingectomy, the most common occlusion method, the fallopian tubes are cut and tied with suture material. The Pomeroy technique, a widely used version of partial salpingectomy, involves tying a small loop of the tube and cutting off the top segment of the loop. Partial salpingectomy is considered safe, effective and easy to learn. It does not require any special equipment to perform; it can be done with only scissors and suture. Partial salpingectomy is not generally used with laparoscopy.

Clips — Clips block the fallopian tubes by clamping down and cutting off the blood supply to a portion of the tubes, causing a small amount of scarring or fibrosis that prevents fertilization from occurring. The two most common clips are the Filshie clip, made of titanium, and the Wolf clip (also known as the Hulka clip), made of plastic. Clips are simple to use, but each type requires a special applicator.

Silicone rings — Tubal rings, like clips, also block the tubes mechanically. A very small loop of the fallopian tube is pulled through the stretched ring. When the ring is released, it stops the blood supply to that small loop. The resulting scarring blocks passage of the sperm or egg. The Yoon Ring, made of silicone, is widely used.

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CLIP METHOD

Electrocoagulation — Electrocoagulation uses electric current to coagulate or burn a small portion of each fallopian tube. Unipolar coagulation passes current through the forceps applied on the tubes, and the current leaves a woman's body through an electrode placed under her thigh. This technique is rarely used because it is associated with a higher risk of organ injury. In bipolar coagulation, current enters and leaves a woman through two ends of the forceps. Bipolar coagulation is safer, but slightly less effective than unipolar coagulation.

— Sarab Keller

Sources:

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foul-smelling discharge from the wound soon after surgery or if they start bleeding or swelling around the incision site.

Female sterilization offers at least one substantial health benefit — protection against ovarian cancer. One large-scale prospective study that followed more than 396,000 women for nine years found that women with tubal ligations had 30 percent less risk of developing ovarian cancer than women who were not sterilized.⁷ Precisely why sterilization protects women against ovarian cancer is not well understood.

Sterilization should be considered permanent because reversal surgery is difficult, expensive and not widely available. Reversal involves a major abdominal incision and delicate surgery on damaged fallopian tubes.

RESTRICTIONS

Most international family planning organizations oppose regulations that deny sterilization to clients below a certain age or with fewer than a specified number of children, since such blanket restrictions may

limit access to some who could benefit from sterilization. “Although a couple may be young, age does not matter if the decision is correct in their case,” says Dr. Marta Durand-Carbajal of the Instituto Nacional de la Nutrición Salvador Zubirán in Mexico City, who has performed sterilizations and helped conduct research on regret. “It’s not the age, it’s how the decision is made. As a provider, I can help young couples think about the future.”

Women who might be interested in sterilization may hesitate to use this method due to a number of misunderstandings and myths. Some women fear that sterilization will cause them to be less feminine, gain weight or lose their sexual desire. Providers should explain that sterilization does not affect normal sexual function, weight or femininity in any way, and can even improve a couple's attitudes toward sexual intercourse by reducing anxieties about unwanted pregnancies.⁸

"Many women think they will gain weight," says Dr. Kamal Hazari, assistant director at the Institute for Research in Reproduction in Bombay, India, who has studied the medical sequelae of female sterilization. "Because they come to get sterilized in their late 30s or early 40s, they are likely to gain weight anyway. We need to explain to them that this is part of the normal process of aging, rather than the procedure." Other misunderstandings are that eggs build up in the body, or that the tubes are simply "tied" and can easily be "untied" to restore fertility. Providers should explain that the tubes are generally cut as well as tied, and that reversal is a very complex procedure that often fails.

Other questions surrounding the health effects of sterilization stem from scientific debates. Some scientists believe that sterilized women are more likely to experience menstrual irregularities, sometimes termed "poststerilization syndrome." But recent research does not show any difference in menstrual disorders between sterilized women and those who are not. Researchers hypothesize that it is not sterilization, but the normal aging process or the discontinuation of cycle-regulating contraceptives, such as oral contraceptives, that cause some sterilized women to experience more menstrual irregularities.⁹

Others have questioned whether hysterectomy (the surgical removal of the uterus) is more common among sterilized women. A 1990 study found no difference in hysterectomy rates between sterilized and non-sterilized women over age 30, but younger sterilized women were three times more likely to have hysterectomies than their non-sterilized peers.¹⁰ Researchers postulated that young women who are sterilized may be more likely to consider having hysterectomies to cure menstrual irregularities because they are not worried about losing their fertility and have completed their child-bearing.

FEW CONTRAINDICATIONS

Unlike hormonal contraceptive methods that are contraindicated for women with certain health conditions, sterilization is safe for women with nearly any medical condition, as long as providers treat or stabilize the condition prior to surgery. For example, providers must try to be sure a woman is not pregnant before performing sterilization. If they suspect pregnancy, the procedure should be delayed.

The postpartum period is often a convenient time to perform sterilization, since many women are rarely in contact with health services except when giving birth. Care should be taken to counsel pregnant women about sterilization in advance of labor or delivery (see related article, page 18).

Postpregnancy procedures are safe, as long as the client's most recent delivery or abortion proceeded smoothly. Pregnancy-related conditions that warrant a delay in the procedure include severe pre-eclampsia; prolonged rupture of the membranes prior to delivery; infection; fever; severe hemorrhage or acute hematometra — a collection of blood in the uterus. Women who experience severe trauma to the genital tract, uterine rupture or perforation during delivery should also wait.

Postpartum women must have time to receive counseling and think over their decision. If the decision delays a procedure by more than seven days after delivery, the World Health Organization (WHO) recommends waiting at least six weeks to perform the procedure, until the uterus returns to its normal size.

Voluntary female sterilization is safe for women with a wide range of health conditions, according to WHO. There is no reason to deny sterilization to women with malaria; abnormal changes in cervical cells; tuberculosis (without pelvic infection); simple goiters; or an HIV infection. The sterilization procedure is still safe, but requires extra preparation and precautions, when performed on women with mild hypertension (blood pressure between 140-159/90-99); non-vascular diabetes; mild valvular heart disease; sickle cell disease; or thalassaemia, an inherited disorder of hemoglobin metabolism. Providers should take precautions when clients have kidney disease; benign or malignant liver tumors; mild cirrhosis; or complicated schistosomiasis. Precautions

should also be used with women who are obese or malnourished because they have an increased risk of wound infection.

Some women can safely be sterilized, but require special care, says WHO. Sterilization should only be undertaken in a hospital setting, with an experienced surgeon and staff, access to general anesthesia services and back-up medical support, if women have the following conditions: severe hypertension (above 160/100); vascular diabetes; coagulation disorders; pelvic conditions, such as endometriosis or an immobile uterus; or chronic respiratory problems, such as lung infections, asthma, bronchitis or emphysema. AIDS-related complications, severe cirrhosis, hyperthyroid condition, and abdominal wall or umbilical hernias also require special care.

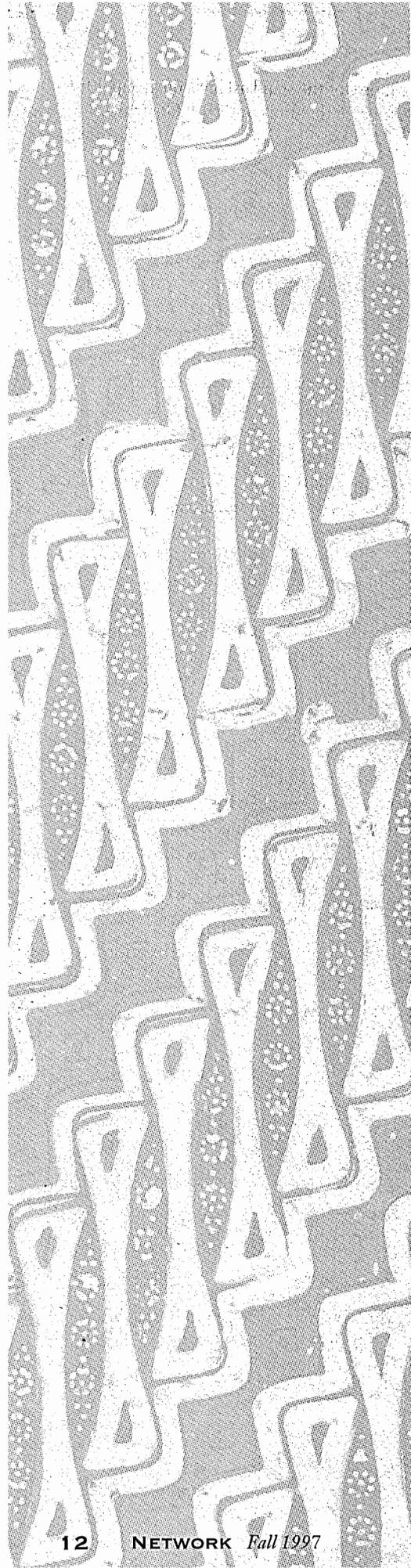
Other women need to delay sterilization until their current health conditions stabilize or improve. This category includes women with deep venous thrombosis; pulmonary embolism; ischemic heart disease; pelvic inflammatory disease; current STDs (other than HIV); abdominal infections; systemic infections; gastroenteritis; active hepatitis; acute respiratory disease; severe iron deficiency anemia; and current biliary tract disease. Women with cervical, endometrial or ovarian cancers may not need to have the procedure because the treatment regimens for these cancers often render women infertile. Unexplained vaginal bleeding, a common sign of cervical cancer, should be evaluated prior to sterilization.

— Sarah Keller

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Continued on page 20



Vasectomy Offers Many Advantages

While male sterilization is safe and effective, incorrect information and unfounded fears limit use.

Vasectomy is surgical sterilization for men, a contraceptive method that is considered permanent. It is very safe, has few side effects, and has reported annual pregnancy rates of less than 1 percent.

Despite its many advantages, vasectomy is widely used in only a few countries, including China, India, Thailand, Korea, the United Kingdom, Canada and the United States. About 45 million couples worldwide rely on vasectomy for contraception, compared with about 150 million female sterilization users,¹ even though male sterilization is safer and easier to perform.

In many developing countries, the procedure is not widely available. Even if it is available and men have heard of it, many believe incorrectly that the procedure affects a man's sexual functioning and weakens his strength. Campaigns to improve access to vasectomy highlight important lessons: that enough providers need to be trained so that services are readily available; that sustained promotional campaigns encourage use; and that male clinics or other features that make men feel comfortable help promote its use. Competent counseling is also essential to success.

"With a lot of effort providing all of these elements, we have seen slow but encouraging progress," explains Evelyn Landry of AVSC International (AVSC) in New York, which has worked to expand vasectomy services in developing countries for more than 20 years. Nevertheless, even in Brazil, Colombia, Kenya and Mexico where model programs have been conducted, the

proportion of married couples of reproductive age using vasectomy, while increasing, is still 1 percent or lower.

Although vasectomy is considered one of the most effective contraceptive methods available, there have been no long-term effectiveness studies, similar to research available on female sterilization. Couples who rely on vasectomy must use another method for many weeks after the procedure, until sperm are no longer present in the man's ejaculate. A semen sample after vasectomy can help determine when this occurs.

Recent small studies raise questions about how long it takes after a vasectomy for a man to achieve azoospermia (absence of living sperm in a man's semen) and indicate that there is a wide variability in time to azoospermia (see article, page 15). Providers should advise clients that vasectomy, like other contraceptive methods, is not perfect and that failures can occur.

MYTHS AND FACTS

Men are often reluctant to consider vasectomy because of inaccurate information and myths. A study in Colombia found that both men and women still believe, incorrectly, that vasectomy affects a man's sexual performance.² Vasectomy does not affect production of male hormones that control the sex drive, erection, or masculine features, such as facial hair or muscle tone. The method simply prevents sperm from being in the ejaculate. In the procedure, the provider cuts the *vasa deferentia*, through which sperm travel from the testicles to the

urethra during ejaculation. After vasectomy, the testicles continue to produce sperm that eventually degenerate and are excreted, like other body cells.

Until recent years, many men in developing countries had not heard of the procedure. In 1988, for example, only 35 percent of men and 20 percent of women in Kenya knew about it, according to Demographic and Health Survey, a U.S.-based program that assists developing countries in conducting surveys on fertility, family planning, and maternal and child health. Five years later, after promotional campaigns and provider training by AVSC and others, 56 percent of men and 41 percent of women knew about vasectomy, and most knew where services could be obtained.³ "Men were more interested in learning about family planning, including vasectomy, than we thought they would be," says Joseph Dwyer, director of AVSC's eastern and southern African programs. "Men have eagerly attended educational sessions and snapped up the pamphlets."

After learning about the method, men need services that are sensitive to their needs. While clinics are making progress in serving men, it takes time to adjust to male clients. A recent study in Kenya found that when men sought information about having a vasectomy, about half of the clinics visited were not adequately prepared for male clients. "Provider discomfort about vasectomy itself was quite apparent," the study reported, and the clients felt "as if they had invaded women's space." The counselors who were rated poor or fair in attitude were all women. "This comes from a lack of experience with vasectomy as a family planning method, limited experience in counseling men, and little chance to talk openly about such issues with any man," the report concluded.⁴ In the study, done in conjunction with several family planning agencies, four men trained in good counseling techniques and vasectomy made a total of 14 visits to seven different clinics. The clinics did not know that the men were pretending to be clients as part of a study.

In deciding to have a vasectomy, couples need information about the important role vasectomy plays within a range of family planning options. Interviews with 218 couples in six countries found that "both men and women cited concern for the woman's health as a principal reason" for having a vasectomy. The report thus

concluded that "encouraging men to have vasectomy for their partner's sake and stressing that it is a man's 'turn' to take responsibility for family planning may be effective promotional strategies."⁵ The study was done by AVSC in Bangladesh, Kenya, Mexico, Rwanda, Sri Lanka and the United States.

Another theme throughout the study was the value of friends helping to inform couples. Word of mouth from satisfied clients and formal advertising and promotion are the factors most important for expanded use in Sri Lanka, says Dr. Sriani Basnayake, medical director of the Sri Lanka Family Planning Association.

NO-SCALPEL APPROACH

The "no-scalpel" approach to vasectomy (NSV), first developed in China during the 1970s, has rapidly expanded throughout the world. Using a forceps-like instrument to puncture the scrotum instead of making an incision with a scalpel, NSV helps to reduce fears and makes the operation quicker, easier, safer and less painful than the traditional incision approach. In a traditional vasectomy, a provider makes one or two incisions, each 1 cm to 2 cm long, in order to reach the two *vasa*. With NSV, a clamp holds the *vasa* in place just under the skin, so that the forceps can puncture the skin, grasp a *vas* and pull it out to be cut and occluded. Both approaches into the scrotum require local anesthesia with a needle, but NSV needs only one-needle insertion instead of two or more with the standard incision.

NSV is less painful and causes fewer bleeding problems. In an FHI-sponsored multi-country randomized trial among 1,428 men (705 having NSV and 723 with the standard incision), the NSV group had only 10 men with hematomas (blood clots) compared with 67 in the standard group, and just one with infection at the entry site compared to eight who had incisions. The NSV group also reported significantly less pain.⁶

The study found other benefits. The NSV men resumed intercourse sooner than did the other group. Also, the operating time for the majority of NSV men was six

minutes or less, compared with seven minutes or more for the standard incision group. FHI conducted the study in Brazil, Guatemala, Indonesia, Sri Lanka and Thailand. The men were asked to return twice to discuss complications or complaints, between three and 15 days postvasectomy and at 10 weeks, when a semen sample was tested. In Thailand, a limited study of about 1,200 men served by the Population and Community Development Association at the 1987 King's Birthday Vasectomy Festival found far fewer complications among the NSV group.⁷

"Now we know that with the no-scalpel approach, men recover faster, hurt less and have less chance of bruising and infection," says Susan McMullen of FHI's clinical trials division. "Plus, it is just as effective and men do not have to worry about an incision."

Other than fear and temporary discomforts, health concerns are relatively rare. While questions remain about whether vasectomy may increase the risk of prostate or testicular cancer, recent research findings indicate that there is no link between cancer and vasectomy.⁸ When concerns were first raised, a panel of experts appointed by the

BERYL GOLDBERG



A FATHER AND HIS CHILDREN IN BANGLADESH.

U.S. National Institutes of Health concluded that providers should continue to offer vasectomy, that reversal should not be attempted to prevent prostate cancer, and that screening for prostate cancer should not be any different for men who have had a vasectomy.⁹

PROMOTIONAL CAMPAIGNS

Recent campaigns have sought to expand and improve vasectomy services, especially in Latin American countries. An analysis of six vasectomy expansion projects in Brazil, Colombia and Mexico concluded that vasectomy promotion is more successful if it involves wives. "For example, vasectomy might be presented to women as an alternative to female sterilization — especially when they would be most receptive to such information, such as in the postpartum period," concluded Ricardo Vernon of the Population Council. Involving men who have had a vasectomy to encourage use among other men helps to develop an interest in the procedure, and having a staff well-trained in identifying and counseling potential clients for referrals is important, the study found.¹⁰

The study also found mass media promotion to be useful, especially in cities where access to the method is better. The Asociación Probienestar de la Familia Colombiana (Profamilia), the largest family planning provider in Colombia, conducted a five-month radio and newspaper campaign to promote men's services, including vasectomy, as an experiment for four clinics in four mid-sized cities. Each clinic also hired a promoter to give talks in the clinics and in the communities. Two Profamilia clinics used for comparison in the study did not use media promotion. In the clinics using promotion, the number of vasectomies more than doubled in one year (from an average of 57 to 125 per clinic), compared with a significantly smaller increase in the two control clinics (40 to 63 per clinic).

Mass media campaigns are expensive to sustain, however. The Profamilia study and a similar one conducted by the Brazilian agency, Promocão de Paternidade Presponsavel (PROPATER), found that the social and demographic characteristics of the men who learned about vasectomy through the media campaigns were similar to those who learned about it through other

sources, such as word of mouth. "Mass media that reach the largest number of potential acceptors should be emphasized," reports Vernon.

The PROPATER project estimated that the cost of each additional vasectomy acceptor recruited by a magazine advertising campaign to be U.S. \$39, or \$3.12 per couple-year of protection, assuming an average of 12.5 couple-years of protection for a vasectomy. Profamilia, using similar assumptions and methodology, estimated that each additional couple-year of protection cost U.S. \$7.50. A thorough cost analysis would need to account for longer time periods and other factors, such as the cumulative

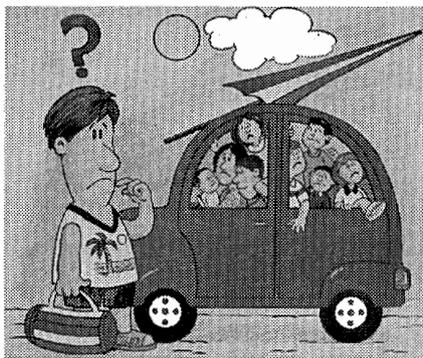
are skeptical about the procedure or fear that it is some sort of a conspiracy feel vindicated when the campaign suddenly stops."

The use of male clinics or separate waiting rooms for men may encourage use. "Profamilia made large gains in promoting vasectomy when it started two male clinics in Bogotá and Medellín in 1985," report Vernon and his colleagues in an analysis of four clinics designed to serve men. "Using the completely segregated approach of these clinics might be successful in conservative cultures where vasectomy remains an unknown and little requested method."¹¹

During the past decade, Instituto Mexicano del Seguro Social (IMSS), Mexico's largest provider of family planning services, has focused on improving access to vasectomies. The number more than tripled in six years, from 6,100 in 1988 to 20,000 in 1994 and continues to grow. IMSS followed a four-part strategy. It adopted NSV as the program's standard and trained doctors in NSV, which triggered a new interest in vasectomy among doctors. Second, it used a comprehensive approach in training all personnel involved in providing vasectomy, encouraging them to work together as a team. Third, IMSS is making vasectomy available at the primary-care level, with plans to provide vasectomies at 260 of its 1,500 clinics. Finally, it is providing ongoing supervision and technical support to the service delivery sites, including assistance with mass media and interpersonal promotion efforts.¹²

— William R. Finger

Una vasectomía a tiempo....



...Hubiera evitado este momento

La vasectomía es un método permanente de planificación familiar para el hombre

INFORMESE AQUI

AN AVSC POSTER SAYS A TIMELY VASECTOMY COULD HAVE HELPED PREVENT SUCH A LARGE FAMILY.

effects of referrals made by satisfied vasectomy acceptors and the cost of additional staff training.

"AVSC's experience in Kenya suggests that mass media should ideally be sustained longer than a year," says Mary Nell Wegner, director of AVSC's Men as Partners program. In a focus group of eight Kenyan men who had chosen vasectomy, "they mentioned that short-term mass media campaigns can be detrimental because those who

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TIME TO AZOOSPERMIA MAY BE LONGER THAN OFTEN ASSUMED

Vasectomy takes weeks to become effective, since sperm remain within a man's reproductive tract long after the procedure. Recent research suggests that it may take longer than previously thought for sperm to disappear completely, and that some men rebound to high sperm counts after sperm counts decline.

While guidelines vary, couples are often advised to use another method until 20 ejaculations or 12 weeks have passed. However, in a recently completed study by FHI and AVSC International (AVSC), 44 of 198 men did not achieve azoospermia during 24 weeks of follow-up after their vasectomies. Also, there was more variability in the time and number of ejaculations before men reached azoospermia than had been anticipated. Most of the 44 men, however, had very low sperm counts by 12 weeks, probably low enough to prevent pregnancies.

Another group of 18 men in the same study were considered, based on semen samples, to be vasectomy failures. Sixteen of the 18 men had low sperm counts or no sperm during the early period of follow-up, but later rebounded to higher counts. These findings suggest that the *vas* may grow back together in some men, a process called recanalization.¹

"Couples who are considering vasectomy should understand that it may take a long time to become effective and failures do occur," says Dr. Laneta Dorflinger, FHI vice president for research and development. "While this study is relatively small and more research is needed to resolve many important questions, our current advice is to be sure clients do not get the mistaken impression that vasectomy is effective immediately and is always perfect, that it never fails."

Currently, couples are told that vasectomy has a reported failure rate of less than 1 percent. Thus, if a woman married to a vasectomized man gets pregnant, some people

might assume that the woman has been unfaithful. Women who become pregnant due to a vasectomy failure could be physically harmed or ostracized by husbands or family members who think incorrectly that vasectomy always prevents pregnancy.

While it is premature to recommend any changes in current guidelines for clinical practice, Dr. Dorflinger says providers not already doing so may wish to consider two options. Where practical, taking one or more semen samples at different times following the procedure may help determine whether a man's vasectomy was successful, she says, and the chance of recanalization may be lessened by the use of fascial interposition, where the fascia is folded back over the *vas* to separate the two cut ends.

In another small study, to be published in the journal *Contraception*, four of 38 men did not reach azoospermia within 24 weeks. A fifth man who had been azoospermic at weeks two, three and four following the vasectomy reported that his partner became pregnant after the study ended. At the end of the study, there were three vasectomy failures. "The high rate of vasectomy failure may have occurred due to the fact that neither fascial interposition nor cautery of the *vas* were used," says a report on the study, which was coordinated by FHI and AVSC.²

In a vasectomy, the *vasa deferentia* are cut, keeping sperm from going from the testicles to the urethra during ejaculation. Various techniques are used to close the *vas* (occlusion). Most doctors in developing countries, where the two studies were done, are trained to use ligation and excision, a tying of the *vas* using thread or sutures and removal of about 1 cm of *vas*. Other techniques, which may close the *vas* more thoroughly, include fascial interposition; electrocautery, which requires a tool not normally available in resource-poor settings; and titanium clips. In

developed countries like the United States, urologists generally use one or a combination of these other techniques. Well-controlled clinical trials comparing the effectiveness of different occlusion options have not been done.

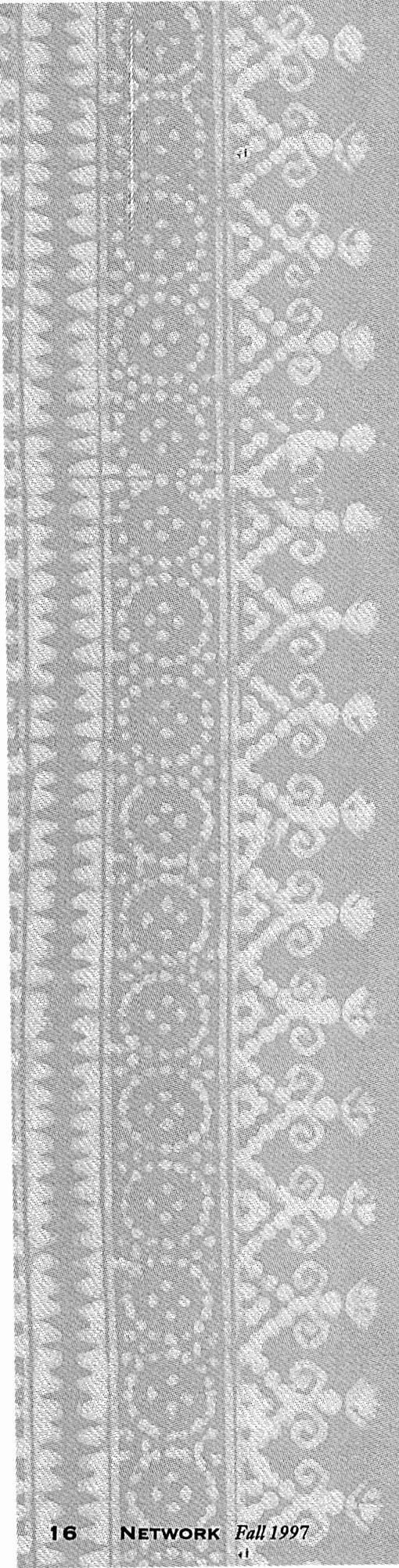
"Research should pursue several possibilities to address concerns raised by these studies," Dr. Dorflinger says, including an evaluation of occlusion procedures being used and the relationship of low sperm counts, sperm viability and sperm motility to pregnancy rates, since azoospermia (the complete absence of viable sperm in ejaculate) is probably not necessary to achieve effective contraception.

One study has examined the risk of pregnancy among men with low sperm counts who used an experimental male hormonal contraceptive. The World Health Organization found that following weekly injections of testosterone enanthate, partners of men with between 100,000 and 3 million sperm per milliliter of ejaculate (called oligospermia) had a pregnancy rate of 8.1 percent, similar to some other contraceptive methods. Partners of men who were azoospermic had a pregnancy rate of zero.³ Further studies are needed to establish a long-term pregnancy rate after vasectomy.

— William R. Finger

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Search for Nonsurgical Sterilization Continues

Innovative ideas for nonsurgical sterilization show promise, but are years away from general use.

For years, researchers have worked to develop nonsurgical female and male sterilization methods that would be inexpensive and easy to administer. While some methods currently under study hold promise, none are likely to be widely available in the near future.

For women, possible nonsurgical sterilization methods include adhesives or chemicals that could be inserted via the cervix to block the fallopian tubes. For men, nonsurgical sterilization techniques include the injection of silicone, polyurethane or other substances to block the *vas deferens*.

Experts say that, particularly in developing countries, a nonsurgical method of male or female sterilization would be beneficial for several reasons. Shortages of facilities, physicians and anesthesia specialists in rural areas create a barrier to surgical sterilization.

In addition, a nonsurgical method might help allay concerns of men and women who fear surgery, cannot afford hospitalization, or who cannot find transportation or child care during surgery and recovery.¹ For example, FHI studies in Brazil, Honduras and Guatemala found that surgery costs, travel time and family-related constraints were among the reasons couples did not seek sterilization.²

QUINACRINE

One of the most widely studied chemicals for female nonsurgical sterilization is quinacrine hydrochloride, a drug once used to prevent malaria and other parasitic diseases. Quinacrine pellets are inserted

through the cervix using a modified IUD inserter or similar device. As the quinacrine dissolves, the fallopian tubes become inflamed, resulting in scarification and closure of the tubes. Up to three insertions may be necessary to achieve complete tubal closure.

Extensive data show quinacrine has promise as a nonsurgical method. However, most international reproductive health organizations have recommended that quinacrine for sterilization not be used in humans until its safety can be established through animal carcinogenicity and toxicology studies, and through epidemiologic studies in women who have been sterilized using quinacrine. FHI fully supports this position.

There are several unresolved safety concerns, including the long-term risks of cancer, potential damage to a fetus if inadvertently administered to a pregnant woman and the possible increased risk of ectopic pregnancy. In addition, participants at a 1994 meeting on female sterilization, organized by the World Health Organization (WHO), recommended that any future studies consider the drug's mechanism of action and standard dosage, as well as the impact of age and parity on efficacy and quinacrine's effects on upper genital tract infections.

During the 1970s and 1980s, FHI researchers helped develop quinacrine pellets and worked with in-country scientists to conduct clinical trials in Chile, India and the United States. In 1990, FHI discontinued prospective quinacrine studies after eight

cancer cases were identified during long-term follow-up of 572 Chilean women who had received quinacrine pellets. FHI carried out a retrospective follow-up study of 1,492 women in Chile who received quinacrine from 1977 to 1989 and found no link between quinacrine use and cancer, but additional follow-up studies were recommended.³

In 1994, at the request of the Vietnamese government, FHI began an ongoing retrospective study of a sample of 31,781 women who had been sterilized with quinacrine in Vietnam. FHI also collected data from a randomly selected sample of 1,800 women sterilized with quinacrine to compare their perceptions, experiences and satisfaction levels with women who used IUDs. FHI continues to follow these women.

OTHER FEMALE METHODS

Other methods of female nonsurgical sterilization under development use different blocking agents — such as iodine and silicone — and other delivery systems to reach the fallopian tubes, such as hysteroscopes and balloons.

In Europe, researchers are exploring the use of Ovabloc, silastic plugs that block the fallopian tubes, as a possible method of

reversible female sterilization. Using a hysteroscope (a device used for direct visual examination of the uterine cavity), liquid silicone is placed in the fallopian tubes, where it hardens within five minutes. Studies are under way in the Netherlands, where some 90 plug insertions are performed annually. No pregnancies have been reported to date, although 8 percent of women experienced migration of the plugs away from the original placement.⁴

Also, researchers in Sweden have investigated P-block, a water-based gel that is inserted by hysteroscope and expands to block the fallopian tubes. There have been problems with expulsion, and pregnancy rates are high. Another method, the Hamou tubal plug, blocks the tubes with a nylon or plastic thread. Again, there have been problems with plugs migrating or breaking.

Researchers also are exploring the use of an intrauterine balloon, which would be used to deliver the tissue adhesives into the fallopian tubes, and technologies now used to help couples conceive — methods that clean debris from the fallopian tubes, break down adhesions or place egg, sperm or embryos in the tube — that might be used to deliver devices or drugs to prevent conception.

MALE METHODS

While female methods involve placement of chemicals or other substances to block the fallopian tubes and form a barrier to conception, male methods involve the injection of chemicals or other substances directly into the *vasa deferentia* in the scrotum, which transport sperm from the testicles. The chemicals cause scarring that blocks the *vas* or form plugs, which become a mechanical barrier to prevent passage of sperm. Researchers are looking for new male techniques that are less obtrusive than current procedures or may improve prospects for reversal.

One study involved 456 men in China who received a single injection of a carbolic acid mixture. Ten years after the injections, the azoospermia rate among study participants was 95.6 percent.⁵

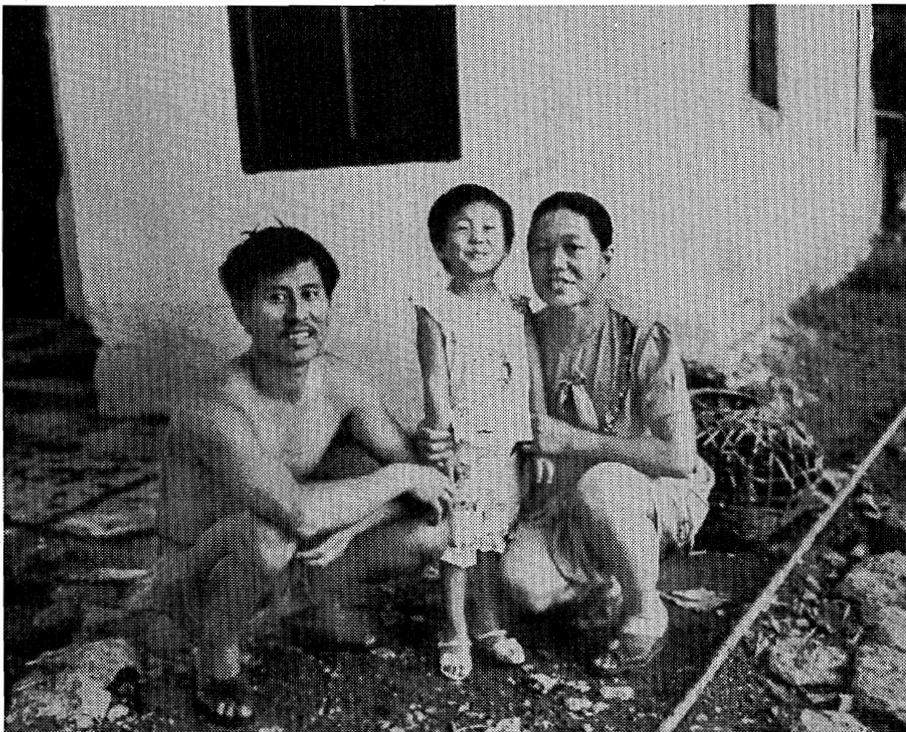
Researchers also have explored injection of medical polyurethane (MPU) solution, which hardens to form plugs in the *vas*. Some 300,000 procedures have been performed in China, achieving a 98 percent azoospermia rate.⁶ A study of 12,000 men, conducted by the Sanxi Provincial People's Hospital in Taiyuan, found a 98 percent azoospermia rate after three years.⁷

In Indonesia, a WHO-supported study found high success rates in the use of silicone plugs to block the *vas deferens*. A small study of the efficacy of silicone plugs, conducted by WHO and AVSC International, is now under way in the Netherlands.

Currently, a 10-center study involving more than 3,500 men is under way to compare three methods of male nonsurgical sterilization: injections of polyurethane plugs or the chemical methylcyanoacrylate to occlude the *vas* and traditional ligation by no-scalpel vasectomy. Six months following the procedure, the azoospermia rates were 97 percent for men who had undergone no-scalpel vasectomy; 89 percent for chemical occlusion; and 68 percent for silicone plugs. At 24 months, the azoospermia rate was 98 to 99 percent for all groups. The study is being conducted by WHO and the State Family Planning Commission of China, with some funding from the United Nations Population Fund.⁸

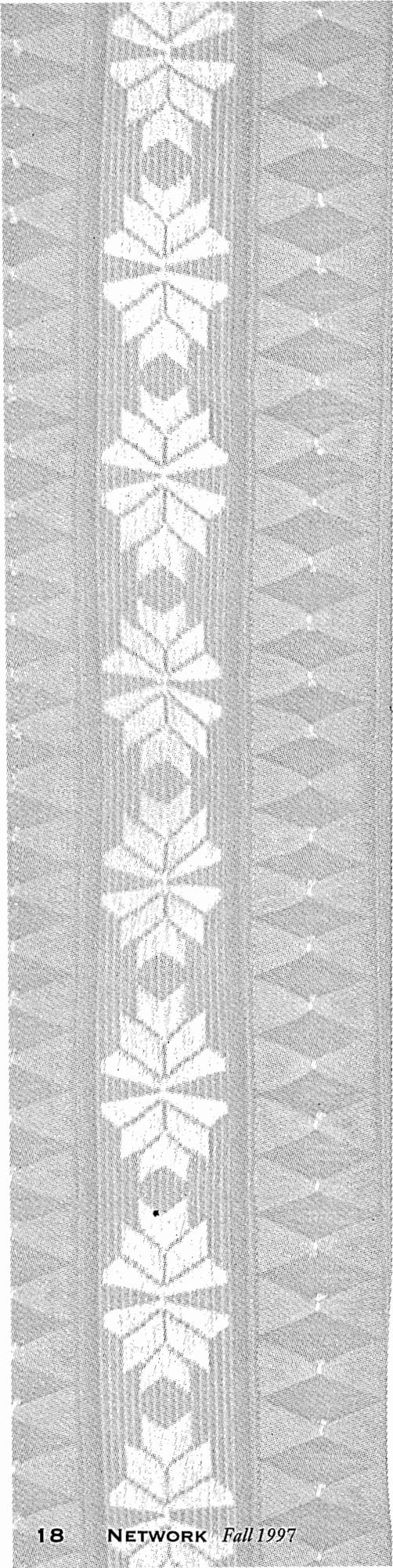
— Barbara Barnett

BERYL GOLDBERG



PARENTS AND CHILD IN A REMOTE AREA OF CHINA.

Continued on page 20



Counseling Encourages Voluntary Choice

Counseling serves many purposes, including careful consideration by clients at risk of regret.

Because male and female sterilizations are permanent, it is especially important to counsel clients interested in these methods carefully and allow them to make voluntary, informed choices. Even the mildest forms of pressuring a client to accept the method should be avoided.

Most men and women are satisfied with voluntary sterilization, but some clients will eventually regret their decision to end fertility. Counseling can help reduce the rates of regret.

Sterilization counseling should involve one-to-one discussions covering the nature of the procedure, its permanence, possible complications and benefits, and failure rates. Clients should be informed about alternative long-term methods, and should choose the most appropriate method for their circumstances. The World Health Organization reports that sterilization can be used safely at any age, but recommends spending extra time in counseling younger people.¹ Because of the higher risk of regret and greater likelihood of method failure among young sterilized women, reversible long-term methods may be more appropriate for couples under age 30.

If sterilization is selected, several topics need to be covered extensively during counseling, including the risk of complications, how and when to seek emergency treatment, and the need to use barrier methods to protect against sexually transmitted diseases (STDs).²

REGRET FACTORS

A 1994 FHI review of numerous studies found that estimates vary widely on how many women will later regret having been sterilized. One study, for example, gave an overall global range of from 2 percent to 13 percent regret from six months to six years after the procedure. Levels of regret varied by country and region in the 21 studies analyzed, typically higher in North America than in developing countries.

However, in contrast to the range of estimates on how many women eventually regret sterilization, key factors associated with regret were remarkably consistent among the studies. Young age (under 30) was an important factor in nearly all of the studies. Allowing others to make the decision, such as a husband or medical personnel; being sterilized immediately after delivery; a new marriage; and death of a child were also frequently mentioned factors.³

"You can identify clients who are more likely to experience regret before doing the procedure," says Dr. Ellen Elizabeth Hardy of the Universidade Estadual de Campinas in Brazil, who is studying the impact of sterilization on women's lives as part of FHI's Women Studies Project. "The most important variable in regret is age." In Brazil, Dr. Hardy and her colleagues interviewed 432 sterilized women and concluded that requests for reversal operations were very strongly associated with being young (under 25) at the time of sterilization.⁴

Women are more likely to be satisfied with sterilization if they are age 30 or older at the time of sterilization, started having children at a young age, have a desired number of children, have at least one child of each sex, and are in a stable marriage or partnership.⁵ Studies on vasectomy show that regret among men is also most strongly correlated with having the procedure done at a young age.⁶

Counseling can encourage careful decisions by clients, helping men and women to evaluate how they may feel about sterilization in the future if they get divorced, remarry or lose a child.

"If there is any doubt, providers should encourage couples to go home and think about it," says Anne Wilson, a Washington-based vice president of the Program for Appropriate Technology in Health (PATH), which seeks to improve health, especially the health of women and children. "On the other hand, there are some couples who feel absolutely sure that sterilization is right for them."

Screening clients for risk of regret does not mean providers should categorically deny sterilization services to any group of clientele. Sterilization may be appropriate for some young men and women, and may be their best option, even if not ideal.

"No provider can predict the client's values," says Dr. Amy Pollack, president of AVSC International (AVSC), an organization based in New York that provides technical assistance to family planning programs worldwide. "A client's decision depends on who the client is, her access to resupply [of such contraceptives as the pill], the couple's circumstances and how they live."

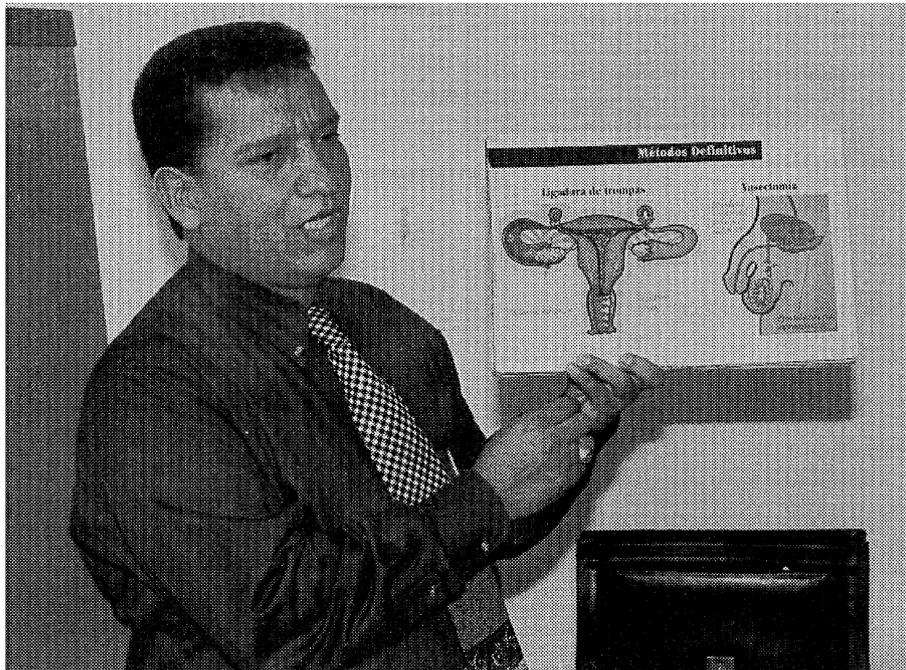
A RANGE OF OPTIONS

Thorough counseling should place a high priority on each client's right to a voluntary choice from among several good contraceptive options.

Some family planning programs or governments reward couples who select sterilization with job preference or savings accounts for daughters.⁷ However, incentives to encourage sterilization may interfere with choice.

"If a provider suspects a client is not making a free, informed decision, he or she should recommend a long-term reversible method, such as an intrauterine device (IUD), Norplant or an injectable," says

ROQUE CARVAJAL



FOR MEN, GOOD VASECTOMY COUNSELING REPLACES MYTHS WITH FACTS. A PROFAMILIA COUNSELOR IN CALI, COLOMBIA, DISCUSSES MALE AND FEMALE STERILIZATION.

Dr. Sangeeta Pati, medical associate of clinical services at AVSC. Sometimes couples are not aware that other options are even available, adds Wilson of PATH.

However, ensuring that couples have fully considered other options can be difficult in settings where only a few methods are available. Lack of access to alternative methods can be a form of undue pressure to become sterilized.

The option of sterilization should not be brought up for the first time during labor, childbirth or abortion, but should be carefully discussed in advance. "We encourage women who choose sterilization during labor or immediately after childbirth to think it over carefully, because it is not a good time for them to make a decision," says Dr. Marta Durand-Carvajal of the Instituto Nacional de la Nutrición Salvador Zubirán in Mexico City, formerly a visiting researcher at FHI who has performed sterilization and helped conduct research on regret. "If they are having pain from childbirth, or if they have just undergone a lot of pain, they might think they do not ever want to go through that again."

Ensuring adequate time for decision-making is important with any client but may require more planning with postpartum women. In general, women who get sterilized during or soon after delivery are more likely to experience regret.⁸ A Danish study found that women who waited less time

between requesting the operation and getting it done were also more likely to regret the procedure.⁹

For men, counseling helps eliminate myths about vasectomy. Incorrect perceptions that vasectomy will cause impotence, cancer or other health hazards are widespread. Many men incorrectly equate vasectomy with castration or believe it will cause them to lose physical strength, develop a higher pitched voice or gain weight. Providers can explain that sterilization does not affect masculine physical traits or normal sexual function in any way, and can even improve sexual pleasure by reducing anxieties about accidental pregnancy or eliminating the need to interrupt lovemaking to use a barrier method.

A study of vasectomized couples conducted in six countries between 1992 and 1995 demonstrated how counseling can counter misunderstandings. Nearly all of the 218 men interviewed said their concerns about vasectomy were dispelled after talking to providers. Because most couples chose vasectomy during a pregnancy, the study indicated that a good time to counsel couples about this male method may be postpartum. Also, counseling women on vasectomy and teaching them how to discuss vasectomy with their partners in a non-threatening way may be useful.¹⁰

Counseling can also address unfounded fears or myths surrounding female sterilization. Many women believe that sterilization will cause them to be less feminine, lose their sexual desire, or gain weight. These myths may stem from the fact that sterilization is often used by women approaching menopause, a time in life when most women are likely to gain weight and stop menstruating.

AFTER A CHOICE IS MADE

Once the choice has been made, clients should read, discuss and sign a consent form prior to the procedure to indicate that they have made a voluntary and fully informed choice. Men and women should be able to change their decision at any point prior to surgery.

Clients should be informed that sterilization is permanent because reversal surgery for men and women is difficult, expensive, not widely available and success is not guaranteed.

Many clients are afraid of the sterilization operation and think it will be painful or unpleasant. People who know what to expect are more likely to be satisfied. Therefore, a thorough explanation of the procedure should be given to all clients, including what type of anesthesia will be used and whether they will feel any pain.

Instructions about what to do after surgery should explain when clients can return to work, resume sexual relations and when they need to return for a follow-up visit. One follow-up visit seven days following female sterilization surgery is generally recommended to check on healing and remove sutures, while no visits are required after vasectomy.

Providers should review the possibility of postoperative complications, such as wound infection, fever, pain, bleeding or suspected pregnancy, and instruct clients on what to do and where to go in the event that complications arise. All sterilization users should be encouraged to seek treatment immediately if they have any of these problems. At the Hospital Universitario del Valle in Cali, Colombia, providers give all clients printed forms explaining what to do in case of emergencies, including telephone numbers to call and report any problems.

Sterilized people who are at risk of STD infections should be encouraged to use barrier methods correctly and consistently, such as the latex condom. Among people who use one method for contraception and condoms or another barrier for STD protection, research shows that correct and consistent barrier method use declines as the effectiveness of the primary contraceptive increases.¹¹

— Sarah Keller

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Voluntary Sterilization: Six Lessons Learned

By Lynn Bakamjian
Vice President and Director of Field Operations
AVSC International

and Pamela Beyer Harper
Director of Communications
AVSC International

Because voluntary sterilization is surgical and intended to be permanent, it demands more from health-care providers than other contraceptive methods. In short, it requires more care.

The quality of sterilization services is often an indicator of the quality of other reproductive health services. Aspects of sterilization that are relevant to other reproductive health services include assuring voluntary decision-making, providing counseling services, preventing infection, maintaining clinical safety, reducing the discomfort and pain clients feel, establishing standards and guidelines for care, and providing follow-up care.

Good access to services is important, but sometimes access is mistakenly equated with quality. At other times, these two concepts are spoken of as if they were mutually exclusive. In fact, access and quality are inextricably linked. Increasing access to poor services does harm to people, and such services will ultimately fail because people will reject them. Access to a range of method choices, allowing each client to select the most appropriate method for his or her circumstances, is one important feature of all quality family planning services, including sterilization.

A review of international work in more than 50 countries during the past 25 years highlights six important lessons on how to

assure quality voluntary sterilization services: focus on the client, assure informed choice, support providers with training and other needs, build ownership in the community, use technology that is appropriate for the setting, and offer services within an integrated reproductive health program.

These vital lessons mirror the spirit of historic resolutions adopted by more than 180 countries during the 1994 International Conference on Population and Development in Cairo and the 1995 Fourth World Conference on Women in Beijing. What has been learned from providing sterilization services can be a guidepost for improving reproductive health services in general. An underlying principle for all of these lessons is that policy-makers and program staff must pay attention to quality in order to build a reproductive health program that serves people and meets their needs, as well as the program's goals.¹ There are no shortcuts: Sustainable service delivery systems that are of good quality and that achieve desirable results take long-term, steady work.

FOCUS ON THE CLIENT

Reproductive health services must start with the individual client as a whole person with changing needs over the course of a lifetime, and must include access to different contraceptive options throughout a person's

reproductive years. In some early family planning programs, the client was at the periphery, a number to be counted along the way to achievement of a demographic goal.

Some providers have focused too much on the medical status of clients and too little on clients' personal needs. The surgical nature of sterilization has led providers to dwell on clinical aspects, such as anesthesia and surgical technology, rather than the needs and desires of the individual person. Reproductive health choices are highly personal, and they take place within a web of relationships; with the partner, with the family, and with the community. As family planning providers begin to offer a broader range of reproductive health services, they need to take this lesson into account.

Effective client-provider interaction is crucial and proper consideration for the client is essential. Women should not be left lying naked on examination tables, with no respect for their privacy. Surgeons should involve the client when talking to associates in the client's presence, and should look at the client when possible. Every person who interacts with a client needs to show consideration and respect.

Understanding how clients make decisions about reproductive health has bearing on how services are delivered, and this decision-making varies from person to person. For instance, while most women or men who choose sterilization want to involve their partner in making this decision,



LYNN BAKAMJIAN

some choose not to. A woman may not tell her partner she has decided to have a tubal ligation because she knows he wants her to keep bearing children. In other cases, clients may lack a steady partner or have more than

one partner. Because of such differing individual circumstances, programs should not impose rigid requirements, such as spousal consent or couple counseling. Rather, providers should attempt to understand the special circumstances of each client that may affect how services are offered.

When services are isolated and fragmented, providers miss opportunities to provide much-needed care and follow-up.² Clients who want sterilization services, or any other reproductive health service, have other health-care needs. A woman may require screening for breast or cervical cancer; a man may need a prostate exam. Both of them may need assessment or treatment for sexually transmitted diseases (STDs). Yet in many countries, a client may only obtain sterilization at a sterilization clinic. Similarly, clients who seek other reproductive health services, such as cancer screening or STD treatment, may have family planning needs that should be addressed.

INFORMED CHOICE

When sterilization first became widely available as a contraceptive option, policy-makers and health-care professionals debated two questions: How was the decision to be made? Who had the authority to make it? Unfortunately, the history of sterilization includes noteworthy violations of individual rights.³ Although the world has made steady progress away from such abuses, the individual's right to an informed choice will always require vigilant attention.⁴

Because of concerns about rapid population growth and the strains such growth places upon limited resources, some sterilization programs in the past have offered providers and clients special incentives and payments. Furthermore, they have favored sterilization over other contraceptive methods because of its efficacy. Such practices undermine the client's right to choose. Demographic goals should not be imposed on family planning services in the form of targets or quotas, and incentives should not be given to providers, referrers, or clients.⁵

The role of counseling is critical. Women and men need to know their options and the real risks and benefits of any method or procedure; they must be treated respectfully and without moral judgments. They may need assistance as they make their decisions, but they do not need to be told what to do.

Decision-making about sterilization points to the broad context in which choices about reproductive health are made and to the critical role of the provider. The client is not simply choosing to have or not to have the procedure. Rather he or she is thinking



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about many private and, sometimes, sexual issues. What will my partner think? What about other family members? Will they disapprove? Which friends can I talk to about my choice? Will I be sad if I end my fertility? What will sexual intercourse be like after the surgery? Am I making this choice only because I cannot obtain another, more preferable method? Am I making this choice because the doctor is telling me to do so? The provider's role is to help the client navigate these often difficult waters.

It must also be remembered that denying sterilization or other reproductive health services unreasonably also violates informed choice. Irrationally strict eligibility requirements, excessive waiting periods, and mandatory spousal consent are three examples of ways in which access is hampered.⁶

PROVIDER NEEDS

The rights and needs of clients cannot be honored unless the needs of providers are adequately addressed.⁷ Most providers want to offer good services to clients, but all too often lack the support they need. Institutions and governments must serve the provider so the provider can serve the client.

In the 1970s and 1980s, AVSC International (AVSC) monitored medical quality in hundreds of service sites around the world. We learned over time that our approach was ineffective. An AVSC staff member or consultant would evaluate services,

leave recommendations and depart. Months later, a return inspection would typically show that very little had changed. From this monitoring, AVSC learned that providers must take responsibility for improvements, but to do so they must receive training and evaluation, and be rewarded accordingly. Whenever possible, they should learn new skills in the workplace, not in facilities markedly different from their daily surroundings.

Providers need clear guidelines and standards that are developed or adapted for the context in which they work. They need reliable and ongoing supervision that facilitates work, helps resolve problems, and develops their knowledge and skills. They must have the opportunity for special training when indicated. This requires strong in-country institutions that can deliver effective supervision, problem-solving, and training.

COMMUNITY OWNERSHIP

Before sterilization became more widely available, it was often controversial. New to many countries, it violated deeply felt beliefs and generations of culturally significant fertility practices.

AVSC staff would begin working in a country, firm in the belief that sterilization was a legitimate and safe contraceptive choice. But our belief was not enough. Until providers and clients in the country shared that conviction, we were unable to help establish services. We could not succeed unless we joined as partners with clients, with local leaders, and with local organizations. Ownership is achieved through participatory program development, in-country formulation of standards and guidelines, and local problem-solving approaches.

Medical standards and guidelines illustrate the necessity of local commitment. A broad international community of experts, including AVSC, has developed a consensus regarding safety standards for sterilization and other contraceptive methods. Support for the local application of these guidelines has also been essential. Each country should draw on internationally set standards to decide for itself what fits its own needs and circumstances, and this should be shaped by the needs and wishes of the women and men to be served.⁸

In recent years, much of the momentum supporting broader reproductive health services has come from the developing world. We all have much to learn from developing

countries, whose leadership is essential if the aspirations of Cairo and Beijing are to be met.

APPROPRIATE TECHNOLOGY

The technology must be appropriate to the setting — an old lesson worth remembering, especially as health-care institutions around the world expand reproductive health services. In the case of sterilization, the 1970s and 1980s were times of great debate: Which was best: laparoscopy or minilaparotomy; general anesthesia or local anesthesia? Of course, there were no simple answers to these questions. Technologies that offer the greatest benefit at the most reasonable cost, that can be sustained, that offer better safeguards for the client, that increase access without jeopardizing quality are the ones to use.

Too often, a program is designed around a single technology. In fact, what usually works best is an array of offerings, based on the variety of clients, facilities, personnel, and practices. Thus, laparoscopic sterilization may be appropriate in an urban hospital, while minilaparotomy may be the best procedure for a small rural clinic.

As reproductive health services expand, technological debates abound. What is the simplest and most effective way to screen for cervical cancer in low-resource settings, or to assess clients for STDs, or to treat incomplete abortion? In each of these instances, complex service-delivery issues interface with technology to make sustainability and quality significant challenges.

INTEGRATED SYSTEMS

In the developing world, sterilization services of the 1970s and 1980s were typically vertical programs; single-purpose and one-dimensional, often supported with donor funds and rarely integrated into the health structure of the country. The problems with this strategy are obvious. Personnel in such programs often had little connection with other reproductive health services. They were trained in sterilization, but lacked other important knowledge and skills. Clients were typically treated only in relation to their needs as a sterilization patient; other health concerns were marginalized. One of the hallmarks of the Beijing and Cairo resolutions was emphasizing the need to integrate services, growing out of a concern that an individual's needs are multi-dimensional.

Single-focus services and approaches often arise because the intervention is seen as a "magic bullet:" sterilization as a solution to population problems; syndromic charts as a sufficient tool for screening all STDs; or limited analytical approaches as a complete cure for a variety of management problems. Such thinking is simplistic and rarely addresses the multiple needs of the client.

To improve the reproductive health of women and men, a range of services must be available, supported by the necessary infrastructure and staffed by a cadre of well-trained professionals. Small doses of one-time-only training, quick infusions of money, and occasional inspection visits by supervisors do not build programs with the capacity or ability to sustain any level of quality that clients have a right to expect.

Millions of dollars have been invested to introduce and expand family planning services, yet we know that in many programs the potential from those investments is not fully realized. The resources and various components for a successful program may all be there, but there is widespread neglect of the everyday, routine systems for maximizing access, serving clients efficiently, catering to client needs and assuring quality.

Services must be developed in a phased manner, building on the success of pilot efforts and involving all health sectors, from nongovernmental organizations to private providers to major national health systems. Staff need continuous training and retraining — to replace personnel who have departed and to improve knowledge and skills. Services need to be assessed and evaluated, both by staff and by outside observers, to identify what is working and what is not. The holistic and ever-changing needs of individual clients must drive the design of service delivery.

AVSC has seen the value of "systems" thinking in something as basic as a counseling session. For several years, we focused on training cadres of staff identified as "counselors." Within months, the "counselor" would resign or be promoted, perhaps leaving a clinic without anyone who knew what counseling was or why it mattered. Today, we approach counseling differently. It is infused throughout our training and supervision work; our goal is to have every staff member of a clinic know what counseling is and why it is important. This approach is

Resources

SEATS MANUAL ON REPRODUCTIVE HEALTH

Integrating Reproductive Health into NGO Programs, Volume I, Family Planning, a workshop manual developed by the Service Expansion and Technical Support (SEATS) Project at John Snow, Inc., gives guidance to organizations considering the addition of reproductive health activities to existing programs. Single copies of the handbook are available in English for free. Write: Alix Grubel, Reproductive Health Integration Initiative of SEATS, John Snow, Inc., 1616 N. Fort Myer Drive, 11th Floor, Arlington, VA 22209, USA, or call (703) 528-7474, or fax (703) 528-7480.

ASSESSING QUALITY OF SERVICES

A handbook published by the Population Council helps family planning providers and managers evaluate the quality of their services. *The Situation Analysis Approach to Assessing Family Planning and Reproductive Health Services: A Handbook* provides specific guidance on data collection, such as interview schedules, observation guidelines and inventory checklists. The situation analysis approach examines a range of issues, including equipment and facilities, clinic management, commodities, provider knowledge and practice, client-provider interaction and client attitudes. Single copies, available free to reproductive health professionals and students, are available from the Population Council, Office of Publications, One Dag Hammarskjold Plaza, New York, NY 10017, USA, or call (212) 339-0514, or fax (212) 755-6052.

YOUNG PEOPLE'S SEXUAL HEALTH

Working with Young People on Sexual Health and HIV/AIDS, a handbook published by the Appropriate Health Resources and Technologies Action Group (AHRTAG), lists reproductive health resources available in Portuguese, Spanish and English, including training materials, videos, games and comics. A separate publication on discussing safe sex with young people, called *Starting the Discussion: Steps to Making Safe Sex Easier*, is also available. Single copies of either publication are free for people in developing countries. For others, the handbook costs U.S. \$10 and the discussion book is U.S. \$14. Write: Christopher Castle or Sian Long, AHRTAG, Farringdon Point, 29-35 Farringdon Road, London EC1 3JB, United Kingdom, or call (44) 171-242-0606, or fax (44) 171-242-0041.

more likely to ensure that counseling is sustained and that all staff support the ultimate goal; the client's informed choice.

These six lessons teach us that, in order to have lasting impact, programs need to "go slow to go fast." Implementing reproductive health services is multifaceted, and large health systems are slow to change. Sustainable programs take long-term, steady, evolutionary work. Service delivery systems that work efficiently and preserve resources and time, that involve and create job satisfaction for managers and providers, and are of good quality oriented to client needs are much more likely to endure. There are few shortcuts to providing good quality services — whether for voluntary sterilization or any other reproductive health service — if these are to be widely available and used by those who need and want them.

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