

# Outlook

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## Choosing Male Sterilization

Engaging men in their reproductive health—and that of their partners—can be a formidable challenge. In many parts of the world, it is extremely difficult for men and women to discuss issues such as sexual health and family planning (see box, page 2). The vast majority of contraceptive methods were developed for women and are only available at maternal and child clinics or other woman-focused clinics. The only contraceptive methods available for men are male condoms and vasectomy, complemented by the less effective techniques of periodic abstinence and withdrawal. In most developing countries, less than 5 percent of couples rely on the male methods of condoms and vasectomy for contraception.<sup>1</sup>

There are other reasons why male involvement in contraception is not proportional to men's share of the world population. According to surveys conducted in 46 developing countries since 1990, men who do not wish to use contraception say they want more children or believe that their partner is unlikely to become pregnant; others cite opposition

to family planning itself (for religious or other reasons) or say that they don't know enough about contraception.<sup>2</sup> Family planning providers often focus on the health needs of women and inadvertently send the message to men that they are not welcome in clinics where contraceptive services are available. Many men are resistant or even hostile to the idea of taking responsibility for contraception.

In addition, the male reproductive system is a complex target for contraceptive intervention, which explains why the options for men are limited despite decades of male contraceptive development research. Unlike the periodic production of eggs by the ovary, sperm are continually produced; the processes of spermatogenesis, sperm maturation, and transport, and the interaction between sperm and eggs do not yield easily to fertility control efforts.<sup>3-5</sup>

One contraceptive intervention that does work is vasectomy. This issue of *Outlook* will examine a range of topics related to vasectomy, including the no-scalpel vasectomy technique; choosing sterilization as a contraceptive method; cost, availability, and usage in developing countries; side effects and complications; and reversibility. Also included is a brief overview of other strategies for permanent male contraception.

## Vasectomy

Vasectomy is a relatively simple procedure, usually conducted under local anesthesia. First, the provider identifies the vas deferens, the tubes in the scrotum through which sperm travel from the testes. In a conventional vasectomy, the surgeon then makes a small incision (1–2 cm) on each side of the scrotum, or sometimes a single incision in the center. A small section of each vas deferens is then pulled through the incision, 1–2 cm of the vas is usually removed, and the two cut ends are tied off, cauterized, or clamped with a surgical clip. After vasectomy, the sperm can no longer pass through the vas deferens (see Figure 1, page 3).<sup>6-8</sup>

## No-scalpel vasectomy

Vasectomy has been used to sterilize men since the late nineteenth century and gained popularity as a contraceptive method after World War I.<sup>9</sup> In 1974, Dr. Li Shunqiang in Sichuan Province devel-

oped the no-scalpel vasectomy (NSV) technique with the goal of increasing vasectomy use in China. In 1986, the Association for Voluntary Surgical Contraception (AVSC, now called EngenderHealth) played a key role in introducing NSV to the rest of the world. Since then, the main efforts to improve and promote vasectomy have focused on training additional surgeons in the no-scalpel technique, increasing acceptability, perfecting methods of reversing vasectomy, and accumulating better data on the effectiveness of different vas occlusion techniques.<sup>10–13</sup>

Since Dr. Li introduced NSV, more than nine million men have undergone the procedure. Using NSV, the surgeon locates the vas deferens and manipulates it beneath the skin of the scrotum until it is under the midline scrotal raphe (ridge). Local anesthesia is applied, then the surgeon grasps the vas with a fixation-ring clamp. With a dissecting forceps, a single puncture is made in the scrotal skin, instead of the incision(s) required for conventional vasectomy (see Figure 2, page 4). The vas is pulled through the opening and can be occluded with the same techniques used for conventional vasectomy, e.g., ligation or cautery. The same opening is used to occlude the second vas. The opening is so small that there is usually no need for sutures, nor does the site generally bleed.<sup>14</sup>

### NSV versus conventional vasectomy

No-scalpel vasectomy presents the clear advantages of a single, virtually bloodless puncture (usually requiring no sutures) over the more invasive incision(s) used in conventional vasectomy. NSV has fewer side effects, results in less pain, and provides a quicker return to sexual activity. In a recent systematic review of 31 comparative studies, the authors concluded that NSV appears to be the safer approach, with a lower risk of surgical complications.<sup>15</sup>

A randomized, controlled study conducted from 1988 to 1991 at eight sites in Brazil, Guatemala, Indonesia, Sri Lanka, and Thailand also supports NSV over conventional vasectomy. In the course of the study, 1,429 men were assigned to receive one of the two procedures. Results showed that the techniques were equally effective, but within the NSV group operation time was shorter, complications and pain were less frequent, and the men resumed intercourse sooner than in the comparison group.<sup>16</sup> Another study, conducted between 1993 and 1995 in the form of a questionnaire, queried 256 men who had undergone either a no-scalpel or a conventional vasectomy at one of two hospitals in Denmark. The study found that men who had NSV experienced less pain after the first week, used fewer analgesics, had fewer

infections, and met less often with their physicians. There was no significant difference between the two groups for pain and discomfort during surgery and in the first week after vasectomy, and no appreciable difference in physical complications, pain during activity, absence from work, vasectomy failure (as measured by sperm analysis), or satisfaction with the appearance of the vasectomized area.<sup>7</sup>

It should be noted that NSV is a more difficult technique to learn (15–20 supervised procedures are needed, according to Dr. Li). Nonetheless, many non-surgeons around the world have been trained in this technique. Because it takes practice to perfect NSV, it may not be the appropriate method for surgeons who perform relatively few vasectomies.

### Occlusion of the vas deferens

With either NSV or the conventional technique, several methods assure that the vas will be permanently occluded. The most common vas occlusion/vas ligation methods include:

- Removing a segment of the vas so there is space between the severed ends.
- Ligating each severed end with either suture or clips (while ensuring that a small distance separates the ends to prevent them from growing back together).

## Men's involvement in reproductive health

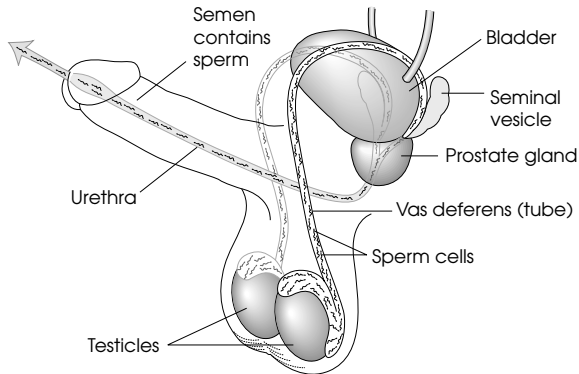
Successful efforts to increase the acceptability of vasectomy, particularly in developing countries, often entail increasing men's involvement in reproductive health through promoting shared decision-making, helping men take responsibility for health issues that affect both men and women, and expanding reproductive services available to men.

In most societies, men's traditional roles do not include seeking health care for themselves or their families. The imbalance in reproductive health involvement is compounded by the tendency of many health care services to focus on women and children and of family planning clinics to cater primarily to women.

In La Paz, Bolivia, two nongovernmental organizations—CISTAC (Centro de Investigación Social, Tecnología Apropiada, y Capacitación) and EngenderHealth—teamed up to examine and improve men's involvement. They presented a workshop to health care program managers about the links between gender issues and men's participation in reproductive health. Training focused on male reproductive health, mental health, alcohol abuse, domestic violence, determinants of male behavior, and delivery and usage of reproductive health services, including family planning. Participants developed action plans to work with policy-makers and administrators to create a more balanced gender perspective in health care and to increase the availability of reproductive health services for men. The training helped many of the men see themselves in a new way—as users of family planning, as partners in reproductive health, and as decision-makers in family health matters.<sup>17</sup>

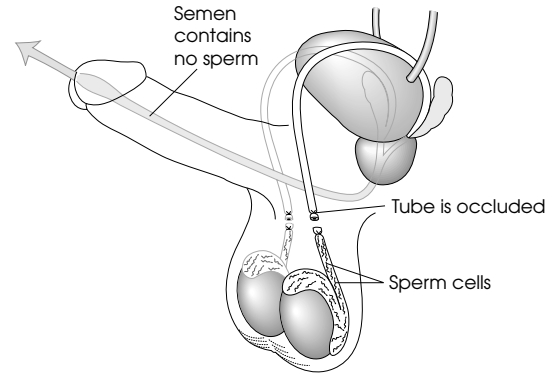
**Figure 1. Before and after vasectomy.**

**Before vasectomy**



*Sperm pass freely through the reproductive tract.*

**After vasectomy**



*The tubes are closed and sperm are prevented from reaching and joining female egg cells.*

Source: AVSC International.<sup>18</sup> Reprinted with permission.

- Using fascial interposition, in which the ends are tied and the thin layer of tissue that surrounds the vas (the fascial sheath) is sutured over one end of the cut vas so that the two ends are in different layers.
- Folding the ends into a U-shape and tying them in that position. This technique is not as widely used as the others, as most surgeons consider it more traumatic and time consuming than other techniques.<sup>6,8</sup>
- Using cautery, a technique by which surgeons burn or coagulate the inside surfaces of the severed ends of the vas either with a hot wire (thermal cautery) or through insertion of a needle electrode into the vas lumen (electrosurgical cautery).<sup>19</sup>

In recent years, there has been considerable debate about the most effective vasectomy occlusion technique. The only published large, randomized control trial of its kind shows that adding fascial interposition improves the chances for successful vasectomy when ligation and excision are used. The trial, in which 841 men participated, took place from December 1999 to June 2002 in eight outpatient clinics in seven countries of Asia, Latin America, and North America. Results based on semen analyses showed

that vasectomy failure dropped from 12.7 percent with other ligation and excision techniques to 5.9 percent with the use of fascial interposition.<sup>20</sup> Another recent study, carried out in Brazil, Canada, the United Kingdom, and the United States, found that cautery is a highly effective occlusion technique for vasectomy. Semen analysis of 378 participants showed a failure rate of less than 1 percent after 12 weeks of follow-up.<sup>21</sup> Both studies were done using similar protocols and were led by the same research team. In both studies, most vasectomies were performed using the NSV approach. A comparative analysis of data from the two studies suggests that cautery is more effective for vas occlusion.<sup>22</sup> Finally, a 2004 systematic review found that the effectiveness of fascial interposition appears to be improved by combining it with cautery.<sup>15</sup>

**Verifying the effectiveness of vasectomy**

Vasectomy is a highly effective though not perfect contraceptive method. Its rate of success is reported to be as high as 99.8 percent, but the rate can be lower depending in part on the occlusion technique used.<sup>23</sup> In the United States, about 50 percent of unwanted pregnancies after vasectomy are due

to early unprotected intercourse; in developing countries, most are probably due to early recanalization (a reversal of the vasectomy after sterility has been established by semen analysis).<sup>24,25</sup>

After undergoing a vasectomy, a man does not become sterile immediately. To avoid pregnancy, he and his partner must continue to use a contraceptive method until all of the sperm within his vas deferens die or are ejaculated. There is a controversy about whether the number of ejaculations following vasectomy (15–20, according to some sources) is more important than the passage of time. A study focusing on that issue found that waiting 12 weeks after vasectomy rather than counting the number of ejaculations may be a more dependable measure for beginning to rely on vasectomy as contraception, particularly when ligation and excision is the occlusion method used. This finding was confirmed by the recent study of fascial interposition and is especially significant for low-resource countries, where semen analysis may not always be practical or accessible.<sup>22,26</sup> In addition, the World Health Organization now recommends waiting three months before relying on vasectomy for contraception.<sup>27</sup>

For confirmation of azoospermia (the absence of motile sperm in his

semen) or severe oligospermia (less than 100,000 non-motile sperm/mL, a measure that many clinicians consider a good indicator of vasectomy success), a man who has undergone a vasectomy presents one or two semen specimens for laboratory analysis. Sperm continue to be produced following successful vasectomy, but they degenerate and are absorbed into the body.<sup>21,28</sup> Vasectomies do not provide protection against sexually transmitted infections, including HIV/AIDS (see box, page 5).

### Choosing vasectomy

What issues should couples consider when choosing between vasectomy and female sterilization? Ultimately, all couples must make this decision for their own reasons. There is, however, evidence that for many couples, male sterilization is a better choice. Female sterilization is a more invasive procedure and is much costlier than male sterilization. Complications, both minor and major, are much more likely to result from female sterilization than from vasectomy.

Although it is considered a minor surgical procedure, vasectomy is a serious step for a man and his partner to take. There are several viable reasons for choosing vasectomy:

- Agreeing with your partner that you do not want any (more) children.
- Wanting to use a one-time, permanent contraceptive method.
- Not wanting to use other methods because of an existing medical condition or because of concerns about possible side effects.
- Pregnancy would threaten your partner's health.
- Wanting to enjoy sex without causing pregnancy.
- Sparing a partner the surgery and expense associated with female sterilization.<sup>8,29</sup>

### A permanent contraceptive

It is important that men and their partners consider vasectomy as a permanent contraceptive. While procedures to reverse vasectomy do exist (see page 5), they are complicated, expensive, and

not always successful. A man should not choose vasectomy if he wants to have a child in the future or feels he is under pressure from others to undergo the procedure. Vasectomy is not a solution to marital, sexual, or financial problems.<sup>8</sup>

### Counseling

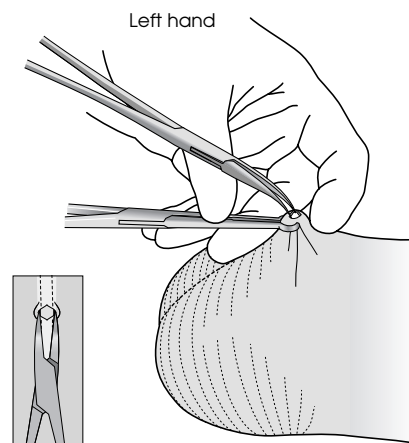
Counseling from family planning providers and others can help men and their partners decide whether vasectomy is right for them. Vasectomy counseling, however, is not always available or comprehensive. A study conducted in Kenya revealed a high level of provider discomfort when men asked about vasectomy. When vasectomy counseling is available, it is important that men and their partners fully understand the procedure, the process leading to azoospermia, and the possibility of vasectomy failure.<sup>3,24</sup>

### Cost of vasectomy

The costs associated with vasectomy vary widely. One recent article exploring the cost and the health effects of several contraceptive methods set the average cost of vasectomy in the United States at \$644. (The average cost of female sterilization was \$4,627.) The article also placed the health cost benefits of vasectomy at \$17,300 over a five-year period, representing savings on the potential cost of pregnancy and pregnancy-related complications.<sup>30</sup> A study from 1995 estimated the cost of vasectomy as ranging from \$353 to \$755, and considered that the procedure would save \$13,373 in health-related costs over a five-year period.<sup>31</sup>

In 1994, the United Nations Population Fund estimated the total cost of commodities associated with vasectomy in developing countries to be \$10.35 per procedure. EngenderHealth estimated

**Figure 2. No-scalpel vasectomy technique.**



*Note the left hand is used to spread the tissues, making a skin opening twice the diameter of the vas.*

Source: EngenderHealth 2003.<sup>19</sup> Reprinted with permission.

that the cost of the same procedure in 2000 would have been \$11.63. These estimates do not take into consideration numerous other costs, including those for additional supplies, as well as building, equipment, and other infrastructure costs.<sup>23,32</sup>

### Vasectomy in developing countries

Vasectomy is not yet widely available in most developing countries. Even among more developed countries, it is only in the Netherlands, New Zealand, and the United Kingdom that vasectomy is performed more often than female sterilization. In developing countries, statistics are generally unavailable, but it is clear that vasectomy remains uncommon (though it does play an important role in some family planning programs; for example, in China, India, Thailand, and Mexico).<sup>23,33</sup> This is partly due to misconceptions about vasectomy: for example, many men believe that the procedure makes a man “weak” or impotent. Finding innovative and effective ways of promoting vasectomy can help address this problem (see boxes, pages 6–7).

In 1997, an article reported on the results of a qualitative study implemented in five developing countries (Bangladesh, Kenya, Mexico, Rwanda, and Sri Lanka), as well as the United States. Researchers conducted 218 in-depth interviews with couples who had chosen vasectomy. One significant trend emerging from the study was that both men and women named concern for the woman's health as an important reason for choosing vasectomy. Many couples favored vasectomy over female sterilization based on faster recovery time and fewer medical risks. Another strong reason for choosing to have a vasectomy was economic: a number of couples, particularly those in Bangladesh, Rwanda, and Sri Lanka, cited the difficulty of supporting themselves and their existing children. By the same token, many of the poorer respondents in Bangladesh, Rwanda, and Sri Lanka felt that vasectomy was a more affordable long-term contraceptive method than others available to them.<sup>4</sup>

A study in Nepal concluded that vasectomy failure rates in low-resource settings may be higher than elsewhere. Researchers hypothesize that this is due to the use of ligation and excision alone (rather than including fascial interposition or using cautery of the vas ends) and the lack of availability of semen analysis to verify the success of vasectomy procedures.<sup>24</sup>

### Possible side effects and complications

Vasectomy is generally a simple, effective procedure with a low incidence of resulting problems, but postoperative complications can occur.

Pain following the procedure is one of the most common complaints among men having undergone vasectomy, but this postsurgical discomfort usually subsides within 1–2 weeks. A few men have longer-lasting pain in the scrotal area that appears immediately or several months after the vasectomy, but generally the pain is described as mild or moderate and is usually not a source of regret. Causes of chronic

pain following vasectomy are not well understood, but may be due to congestion in the epididymis, an inflamed sperm granuloma, and/or nerve entrapment at the vasectomy site.<sup>34,35</sup> There is debate about its frequency, but one recent prospective study found that about 3 percent of men reported at least one recent episode of mild or moderate scrotal pain at the 12-month follow-up visit.<sup>22</sup> Methods such as scrotal support, non-steroidal anti-inflammatory drugs, and spermatic cord block (a pain-relieving injection) can help alleviate the pain. Hematoma (bruising) is another relatively frequently occurring side effect (in up to 18% of cases).

Serious complications are rare but include epididymitis (inflammation of a duct behind the testis), abscess, infection, hydrocele (a collection of watery fluid around the testicle), and spontaneous late recanalization. Sperm granuloma—small, inflammatory nodules that form when sperm leak from the vas deferens or epididymis—are a more common side effect of vasectomy, but are painful in only 2–3 percent of men.<sup>23</sup>

Researchers have speculated about a link between vasectomy and heart disease, testicular cancer, or prostate cancer, but no link has been confirmed. No association between vasectomy and either heart disease or testicular cancer has been found. For example, one cohort study of more than 73,000 men found no increased risk of testicular

cancer following vasectomy. In the early 1990s, several studies claimed to have found a link between vasectomy and prostate cancer, but later studies and reviews questioned the methods of the earlier studies and found no causal link.<sup>15,36,37</sup>

### Regret

The possibility of future regret is an important aspect to consider for men or women planning to undergo a sterilization procedure. Regret occurs more frequently in men who have a vasectomy while in a volatile relationship, men under the age of 31, men who have no children or very young children, and men who decided on vasectomy during a financial crisis or because of a pregnancy.<sup>23</sup>

Both men and women should give serious consideration to the permanence of sterilization before choosing to undergo the procedure. In addition to the factors just cited, unpredictable events such as divorce or the death of a spouse or child can lead to regret following sterilization.<sup>38</sup> The following section examines what men can do when regret or a change of circumstances leads them to consider reversing vasectomy.

### Reversibility

Although vasectomy clearly should be viewed as a permanent procedure, much of the recent literature about male sterilization has focused on vasc-

## Preventing HIV and other STIs after vasectomy

An important component of vasectomy promotion and counseling is the prevention of sexually transmitted infections (STIs), including HIV, following male sterilization. The concept of dual protection (the use of one or more methods that provide protection against both pregnancy and STIs) is especially critical for couples considering vasectomy. If one or both members of a couple are unsure of their HIV status or of their partner's sexual activity, male or female condoms can help protect against STIs when the man has had a vasectomy.<sup>4</sup>

A study conducted in Thailand concluded that vasectomy does not decrease the infectiousness of HIV-positive men for their sexual partners, since semen devoid of sperm can still contain high levels of the virus. Vasectomized men are also at risk of HIV infection from their partners, unless both parties are HIV-negative and monogamous.<sup>39</sup>

tomy reversal. In the United States, about 6 percent of vasectomized men seek a reversal related to the desire to have another child. The most frequent reason is divorce and remarriage. Other reasons include a child's death, a change in religious beliefs, or a simple change of mind. Very rarely, chronic pain may lead men to seek a reversal of vasectomy.

Vasectomy reversal can be achieved through two methods. The surgeon first applies local anesthesia, makes a unilateral or two bilateral incisions, then isolates and removes the scarred ends of the vas deferens. The excised ends of the vas closest to the testicles must then be examined for sperm content and fluid quality. If sperm are found in the vas fluid, the surgeon usually performs a vasovasostomy, in which the two ends of the vas deferens are reconnected. If no sperm are found or if the fluid is

opaque rather than clear, indicating rupture or blockage of the epididymal tubes, the surgeon usually opts for vasoepididymostomy. This procedure connects the vas deferens to the epididymis in a location allowing sperm to travel directly from the epididymis into the vas deferens.<sup>40</sup>

The time that has elapsed since vasectomy is a major factor in whether reversal is successful. A study on the interval between vasectomy and pregnancy found that in men who had vasectomies for less than 3 years, 76 percent achieved pregnancy with their partners after vasectomy reversal. Those who had vasectomies for 3–8 years had a 53 percent success rate; those who had vasectomies for 9–14 years had a 44 percent pregnancy rate; and those who had vasectomies for more than 14 years were able to achieve pregnancy in 30 percent of cases following

surgery.<sup>41</sup> Spousal age also appears to be an important predictor of pregnancy following vasectomy reversal, with younger female partners achieving higher rates.<sup>42</sup>

### Other strategies for male sterilization

With the exception of male condom use, vasectomy—performed with or without a scalpel—remains the only effective technique currently available for male contraception. Other techniques for sterilization, however, are under study or development.

Pre-formed silicone plugs have been studied for a long time and are currently under a renewed development effort. These plugs (the Intra vas device or IVD) have nylon tails to anchor them to the vas and are inserted through no-scalpel surgery. Minor surgery is required for their removal.

## A successful vasectomy program in Brazil

A project that began in 1994 in Santa Barbara d'Oeste, Brazil, provides some important lessons for increasing acceptance of vasectomy within public health care services. Especially significant is the role that former patients can play.

The Center for Research on Maternal and Child Health launched a vasectomy project to improve quality of care, reproductive choice, and client access to public health services. A baseline survey indicated that men and women wanted greater access to family planning and reproductive health services. Men asked for an increased focus on their reproductive health needs and wanted to share in decision-making about contraception.

The project began by inviting women to bring their partners to reproductive health consultations, encouraging men to participate in educational sessions on contraception and STIs, and distributing condoms to men at municipal health centers. Then the project organized vasectomy services, beginning with meetings with the municipal secretary of health to garner political support. Using an existing health center, they created a model reproductive health referral center, trained key staff, and equipped them with five vasectomy surgical kits. Training focused on the characteristics of a high-quality family planning service-delivery system, counseling and communication skills, an update on contraception, and the provision of vasectomy. The team also received training on sexuality, gender issues, and STIs, including HIV.

Men who attend the referral center and request vasectomy must meet several requirements. They must be at least 30 years old, have lived with their current partner for at least five years, and have two or more living children over one year of age. After their request, they must wait at least 60 days to undergo the procedure, during which time the center provides a method of contraception. Each man must attend at least one of two educational sessions and pass a psychological screening interview (along with their partner) to ensure that he is a viable candidate for vasectomy. Finally, couples must sign an informed-consent form, asserting that they realize the procedure is permanent and are aware of other options. Following surgery, the center requests that men return in 2–3 months (or after 25–30 ejaculations) to ensure azoospermia.

Between June 1996 and March 1999, 888 men requested vasectomy from the referral center; 535 men met all eligibility criteria, had a vasectomy, and completed follow-up. Only 11 men did not attain azoospermia; they had the procedure a second time. Four pregnancies took place after vasectomy. A study of the project reached several significant conclusions. First, it is possible to introduce reproductive health services for men in a small city of Brazil. Second, the focus on quality of care and reproductive choice was important to the program's success. Third, vasectomy and other reproductive health services for men can be incorporated into a women's health program. Fourth, promoting community and political support contributed to the project's sustainability. Finally, men who have undergone vasectomies have played a key role in positive promotion of male sterilization and increasing men's involvement in reproductive health.<sup>33</sup>

Styrene maleic anhydride (SMA) is a compound that causes infertility when injected into the vas deferens, as demonstrated by animal testing. SMA impairs the transport, viability, and function of sperm, leading to infertility. This method was developed by Sujoy Guha and colleagues in India, where it is currently under study.<sup>43</sup>

These and other novel techniques require further study and trials, and none is close to regulatory approval.<sup>5,23,44</sup>

## Conclusion

Health care providers and researchers have made great strides in minimizing the invasiveness of vasectomy as a surgical procedure and in improving the results of vasectomy reversal. Furthermore, vasectomy is a less invasive, less costly procedure and has a faster recovery time than tubal ligation for women. Yet the number of female sterilizations performed continues to outnumber vasectomies in all but a handful of countries worldwide.

Despite this disparity, the no-scalpel technique has figured prominently in the popularization of vasectomy in specific cases. In 1989, the Instituto Mexicano del Seguro Social, the largest provider of health care and family planning services in Mexico, launched a program to expand the number of vasectomies performed in the country. Strategies included adopting NSV as the program's standard technique, offering on-site training for all staff involved in vasectomy services, providing vasectomy services at the level of primary care, and continuing supervision and technical support for staff at service delivery sites. Within two years of the program's launch, the number of vasectomies performed in Mexico more than doubled, with continued increases in ensuing years.<sup>45</sup> In a similar effort, in the late 1990s, Indian authorities conducted a major effort to train surgeons in NSV in order to improve the availability and acceptability of vasectomy.<sup>46</sup>

It is notable that men who chose vasectomy in a six-country study mentioned concern for the health of

## Promoting vasectomy

Programs in Latin America have demonstrated effective ways to promote vasectomy in some settings. A study of six vasectomy expansion projects in Brazil, Colombia, and Mexico found that vasectomy promotion works best when female partners are involved. This arrangement allows men and women to discuss their contraceptive options together. Men who have had a vasectomy are also very important to promotional efforts. They can participate in peer-education programs to reach other men to discuss the repercussions and benefits of vasectomy.

Mass media, including newspapers, radio, and television, can also be effective in promoting vasectomy, particularly in areas where large numbers of people have access to the procedure. Colombia's largest family planning provider, Profamilia, more than doubled the number of vasectomies in two of its clinics through a five-month radio and newspaper campaign. In Kenya, a mass media program increased the number of vasectomies performed by 125 percent after six months. In some cultures, male clinics or separate waiting rooms for men may help increase the acceptability of vasectomy. Mexico's largest family planning provider, Instituto Mexicano del Seguro Social, more than tripled the vasectomies it performed (from 6,100 in 1988 to 20,000 in 1994) through an approach that included making NSV available at the primary-care level and providing ongoing supervision and technical support to service delivery sites.<sup>3,47</sup>

their female partner as a reason for choosing the procedure.<sup>4</sup> Family planning programs that offer men counseling, outreach, and education can help them take greater responsibility for reproductive health, value the health of their female partners, consider vasectomy as a viable contraceptive option, and share in decision-making about contraception and reproductive health in general.

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