

## Syndromic Diagnosis of Reproductive Tract Infections Leads to Substantial Unnecessary Treatment in Vietnam

Current strategies to diagnose reproductive tract infections (RTIs) in resource-poor settings by relying on presumptive diagnoses may be leading to considerable overdiagnosis and overtreatment. According to a study of 600 clinic users in Hue, Vietnam, the percentage of women with any RTI based on clinicians' presumptive diagnosis reached 62%, whereas only 21% had an infection that was etiologically confirmed.<sup>1</sup> Five percent of the women had a confirmed sexually transmitted infection (STI), and 1% a cervical infection. Applying the syndromic algorithm developed by the World Health Organization (WHO) may reduce the amount of potential overtreatment for vaginal infections, but the algorithm would need to be adapted to local epidemiologic conditions to increase the accuracy of diagnoses of cervical infection.

The data for the analysis come from a survey conducted among clients of the Maternal-Child Health and Family Planning (MCH-FP) Center in Hue, Vietnam. All nondelivery clients were eligible to participate and a total of 600 visitors to the clinic (e.g., the first five such clients of the day) from May through October 1996 were enrolled. Participants responded to a structured questionnaire that asked about their personal and medical histories. For the RTI diagnoses, clients underwent a thorough pelvic examination, during which vaginal and cervical specimens were taken. When possible, these specimens were tested not only at the MCH-FP Center (using simple techniques and materials appropriate for resource-poor settings) but also at the nearby Hue Central Hospital, which provided gold-standard testing and served as a reference laboratory. Clinicians were asked to make presumptive diagnoses of vaginal or cervical infection after they had physically examined their clients but before they performed any laboratory-based diagnostic tests.

The overwhelming majority of the study participants were married (97%). On average, these women were in their mid-30s (mean age, 36 years), had had 2.7 births and had been 24 years old at first sex. More than one-half (54%)

had had a primary education or less. Some 87% were currently practicing contraception, including 31% who were using the condom, 26% withdrawal, 19% the IUD, 3% the pill and 8% other methods.

On the basis of etiologic diagnostic criteria, 21% of the clients had one or more RTIs; of these accurate diagnoses, roughly 75% were endogenous (naturally occurring) infections and the remainder were STIs. There was no significant difference between asymptomatic and symptomatic women in the proportion with an etiologically diagnosed RTI (19% vs. 21%). Overall, 17% of the study women, regardless of symptoms, were found to have endogenous infections (12% had candidiasis and 6% bacterial vaginosis) and 5% had an STI (trichomonas, syphilis, chlamydia or gonorrhea). Thirteen women (2%) had two RTIs. None of the clients' social and demographic characteristics were associated with the diagnosis of infection.

When the results from tests conducted at the MCH-FP center were evaluated against the results of the gold-standard tests performed at the hospital, the center proved better at detecting bacterial vaginosis and candidiasis than at diagnosing trichomonas. The center failed to detect only 13% and 8% of cases of bacterial vaginosis and candidiasis, respectively, but it missed 60% of the trichomonas cases that were identified by the reference laboratory.

Presumptive diagnoses led to substantial overdiagnosis and, presumably, to unnecessary treatment: Overall, 21% of women had etiologically diagnosed RTIs, but 62% received a presumptive RTI diagnosis. The levels of etiologic and presumptive diagnoses differed more for cervical infections (1% vs. 44%) than for vaginal infections (20% vs. 43%).

Three clinical signs were positively associated with the odds that a woman would receive a presumptive RTI diagnosis—vaginal discharge (odds ratio, 19.3), redness of the cervix (2.7) and bleeding of the cervix when touched (1.6). The only clinical sign significantly associated with actual infection, however, was the presence of vaginal discharge (8.3).

The researchers analyzed the usefulness of these clinical criteria in presumptive diagnoses among the 480 women (80%) who reported vaginal discharge. This symptom correctly identified only 35% of infected women, but its absence correctly ruled out infection in 98% of cases.

The researchers also assessed whether applying WHO's syndromic management guidelines would reduce the amount of overdiagnosis among women with vaginal discharge. Using the WHO guidelines instead of clinicians' presumptive diagnoses lowered the percentage of women with "diagnosed" vaginal infections, from 45% to 17%, close to the 21% with an etiologic diagnosis. However, both application of the WHO algorithm and use of clinical signs resulted in about half of women with vaginal discharge (49% and 48%, respectively) receiving a diagnosis of cervical infection, although only 1% actually had such infections.

The researchers assert that given the moderate rates of non-sexually transmitted RTIs and the especially low rates of vaginal and cervical STIs in Vietnam, "case-management efforts for symptomatic women should focus on the more common endogenous infections, as opposed to mounting more costly, difficult, and largely unsuccessful attempts to provide presumptive treatment for cervical infection." According to the researchers, the findings for vaginal infections suggest that MCH-FP clinicians could be trained to diagnose them with simple microscopy tests, provided that the necessary investment in training and diagnostic facilities is not prohibitively high. The investigators conclude that the current overdiagnosis and overtreatment of RTIs could be addressed by relying less on presumptive diagnoses and more on the standardized WHO guidelines for management of vaginal infections, and that the section of the guidelines dealing with cervical infections be dropped in areas with a low prevalence of STIs.—L. Remez

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## Although Abortion Is Highly Restricted in Cameroon, It Is Not Uncommon Among Young Urban Women

In Cameroon, where abortion may be performed legally only in cases of medical necessity or rape, a high proportion of young urban women have had at least one abortion.<sup>1</sup> One in five 20–29-year-old women surveyed in Yaoundé in 1997 said that they had had an abortion. Four-fifths of the procedures they reported had been performed by a physician or nurse, but the methods used were not always the safest ones, and complications were common. Men in the sample also reported a substantial level of involvement in pregnancies ending in abortion; they were less likely than women to say that the procedure had been performed by a trained practitioner. The odds that a pregnancy would end in abortion were sharply elevated among women who were in school, were in consensual unions or had been involved with their partner for a year or less; the odds were reduced if a woman had no children.

The sample was drawn from among women and men in their 20s living in randomly selected households in Cameroon's capital. During in-person interviews, participants—180 women and 204 men—were asked about their background characteristics, sexual partners, reproductive history and experience with abortion. The questionnaire and the interview process were designed to encourage open discussion about abortion.

Twenty-one percent of women reported having had an abortion; among these, 40% had had two or more. Men's responses regarding their partners' experiences were fairly consistent with the women's reports: Twenty-nine percent said that they had ever been involved in a pregnancy that ended in abortion; 32% had had at least two such experiences. Overall, 35% of reported pregnancies had ended in abortion.

Women who had ever had an abortion were about the same age as those who had not (23–24 years), but they were more likely to be employed (37% vs. 17%), to be single (76% vs. 53%) and to have been pregnant more than twice (50% vs. 16%). On average, they had first had sex at a younger age than women who had never had an abortion (16 vs. 17 years) and had had more partners (seven vs. four).

Fewer differences distinguished men who had been involved in a pregnancy that ended in abortion from others: Both groups report-

ed an average age of about 23 years and relatively high levels of education; the majority were either in school or working and were single. However, men with any abortion experience reported an earlier age at sexual initiation (15 vs. 16 years) and more partners (21 vs. 12); 73% of men with no abortion experience had never made a woman pregnant.

Overall, 67% of reported abortions (84% of procedures reported by women and 56% of those reported by men) had been performed by a physician or nurse. Larger proportions of men than of women said that the abortion had been performed by a traditional practitioner (14% vs. 8%) or by a friend, a relative or the woman herself (21% vs. 8%). Ten percent of men did not know who had provided the abortion.

Despite women's reliance on trained professionals, abortions in Yaoundé are not always performed by the safest methods. One in three abortions had been accomplished by means of dilation and curettage or aspiration, but one in five had involved riskier techniques using a catheter or an injection. Virtually all women knew what method had been used, and 44% reported safe methods. By contrast, nearly four in 10 men did not know how the abortion had been achieved, and only three in 10 reported the safest methods.

One in four respondents—21% of women and 28% of men—reported that an abortion had been followed by complications. Ten percent of men did not know if their partners had suffered any complications. Reported complications were less common after procedures performed by physicians (22%) or nurses (14%) than after those obtained from other sources (41–43%). The most frequently reported complications were abdominal pain (18%), abnormal bleeding (16%), fatigue (13%) and infection (10%).

According to the women, 19% of their abortions had been performed without their partner's knowledge, 31% had occurred with his knowledge but without his consent, and 50% had been obtained with his agreement. In 77% of cases, women reported that the decision to obtain an abortion had been theirs alone; they said that 19% had involved joint decision-making and 3% had been their partners' decision. Nevertheless, women said that their partners had paid for more than half of reported abor-

tions (55%), while they had paid for 31% and their families or friends had paid for the rest.

Men's description of their partners' experiences give a somewhat different impression of their involvement in abortion decision-making. They reported not knowing about 13% of abortions at the time the procedures occurred, objecting to 23% and supporting 65%. Men said that more than half of abortion decisions (55%) had been made jointly and one-third (34%) by the woman alone; they reported that they had made the decision in 7% of cases and other people had done so in the remaining 5%. According to men's reports, they, their partners and a variety of other sources had been about equally likely to pay for the abortion.

For women, the main factors motivating the decision to terminate a pregnancy were the desire to complete their education (mentioned by 26% of respondents) and the sense that their relationship was unstable (23%). Substantial proportions considered themselves too young to have a child or feared their parents' reaction (19%), or cited a need to space their births (15%). Economic constraints and health concerns motivated the decision for 10% and 5%, respectively; 3% said the decision had been forced on them. By contrast, among men who had agreed with the abortion decision, the primary motivations were financial concerns (45%) and the feeling that they were too young (39%). Small proportions of men had been concerned about the woman's well-being (7%), the stability of the relationship (5%), the number of children they already had (2%) or other factors (2%).

The researcher conducted logistic regression analyses to determine which characteristics of the women, their partners and their sexual relationships were independently associated with the likelihood that a pregnancy would end in abortion. These analyses revealed that abortion was significantly more likely if a woman was in school than if she was out of school or unemployed (odds ratio, 7.5) and less likely if she had no children than if she had two or more (0.1). Partners' characteristics, which were significant at the univariate level, were not associated with the odds of abortion when all factors were considered simultaneously. Two relationship characteristics had significant effects: The odds of a pregnancy's ending in abortion were higher among women in consensual unions than among those who were legally married (5.3), and were elevated if the couple had been involved for one year or less (4.2).

Summing up her findings, the investigator notes that in Yaoundé, where modern contraceptive use is uncommon, “induced abortion seems...to play a major role in the postponement and regulation of childbearing among adolescents and young adults.” She suggests that data from a more diverse sample would be useful for evaluating intergenerational and life-course variations and rural-urban differences among women with regard to abortion practices, decision-making processes, risk and motivations.—*D. Hollander*

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## Bangladeshi Women Weigh A Variety of Factors When Choosing a Contraceptive

Bangladeshi women’s choice of a contraceptive is influenced not only by their personal characteristics but also by their assessments of available options. For example, pill users choose their method, among other reasons, because of its convenience, availability and cost, but these factors do not play a significant role in condom users’ method choice. Users of oral contraceptives, long-term reversible methods and, especially, condoms are influenced by concerns about the side effects of other methods. These are among the findings of an analysis of 1996–1997 Demographic and Health Survey data, undertaken to examine a range of factors that were previously overlooked in studies of the determinants of method choice in Bangladesh.<sup>1</sup>

Survey participants were a nationally representative sample of women between the ages of 10 and 49; the analyses of factors affecting contraceptive choice were based on the 3,510 respondents who were married, were not pregnant and were using a modern method of contraception at the time they were interviewed. The great majority lived in rural areas and were Muslim (86% and 88%, respectively); most of the women (79%) and their husbands (66%) had less than a complete primary education. On average, the women were nearly 30 years old and had 1.5 living sons; one-third had lost a child.

By far the largest proportion of women (50%) were using the pill. Substantial proportions relied on female sterilization (18%)

and injectables (15%); the remainder were protected by condoms (9%), IUDs (4%), their husband’s vasectomy (3%) or implants (fewer than 1%).

The main reasons pill users gave for choosing their method (cited by 35–41%) were that it is easy to use, a field-worker had delivered it to their home and they had concerns about other methods’ side effects. Concern about the side effects of other contraceptives and ease of use were the most frequently mentioned reasons for using IUDs or implants (33–44%) and injectables (38–48%); a substantial proportion of IUD and implant users also cited the desire for a very effective method (27%). Condom users most often mentioned side effects of other methods and their husbands’ preference (54% each). Women who had been sterilized were likely to say they had wanted a permanent method (77%); those whose husbands had had a vasectomy most often said that his preference drove the choice (66%). Some 10–16% of users of sterilization and long-term reversible methods (IUDs, implants and injectables), and smaller proportions of pill and condom users (8% and 3%, respectively), cited a family planning worker’s recommendation as a reason for their method choice; cost was a factor in 2–8% of choices.

The analyst used logistic regression to examine the effects of six types of variables on modern contraceptive use. The variables reflected women’s reproductive-related characteristics and goals, women’s and their husbands’ education, women’s evaluation of available methods, accessibility of contraceptives, women’s residence and their exposure to a family planning program.

According to the multivariate results, pill use is influenced by a wide variety of factors. Among variables related to reproductive goals, an increasing number of living children is associated with an increasing likelihood that a woman will choose the pill, whereas the longer a woman has been married, the more sons she has and the older she is, the less likely she will be to opt for the pill over other modern methods. A woman’s education is not significantly associated with her choice of the pill, but if her husband has at least a complete primary education, she has an increased likelihood of choosing this method. Assessments of contraceptives and the accessibility of methods are important factors in a woman’s method choice: Women who are concerned about side effects of other methods, find the pill convenient to use and consider it easy to obtain have an elevated like-

lihood of choosing the pill. The pill is distributed at no cost in Bangladesh; this factor also increases the likelihood of choosing the pill. Rural women and those who have had a recent visit from a family planning worker are more likely to choose the pill than other methods.

Results for long-term reversible methods are somewhat similar to those for the pill. An increasing number of living children, concerns about other methods’ side effects and convenience of use are associated with an increased likelihood that women will choose these methods over other modern contraceptives, and women become less likely to adopt long-term reversible contraception as they get older. Having a husband with a primary school or higher education, however, reduces the likelihood of choosing these methods, as does being non-Muslim.

The determinants of choosing condoms vary considerably from those for the more effective methods. The choice of this method is predicted by a lower number of living children, shorter duration of marriage and older age. Both a woman’s and her husband’s level of schooling influence condom use; the likelihood of choosing this method is elevated if either spouse has a primary education or more. Concern about possible side effects of other methods is a significant factor in the choice to use condoms, and the effect is larger than that for the pill or other reversible methods. Non-Muslim and rural women have a reduced likelihood of using condoms.

Sterilization is the only method whose choice is affected by the experience of having lost a child; women who have suffered such a loss have a reduced likelihood of choosing permanent contraception. The choice of this method also becomes less likely as a woman’s number of children declines, and it becomes more likely as her age and duration of marriage rise; if either partner has at least a primary education, sterilization becomes a less-likely choice. In contrast to the results for other methods, the findings for sterilization reveal a negative effect of concern about other methods’ side effects and of the convenience, cost and availability of the procedure. Non-Muslim women are more likely than Muslims to opt for sterilization rather than another modern method.

While acknowledging that a lack of appropriate data prohibits exploration of several attitudinal and behavioral factors that may affect women’s contraceptive method choice, the analyst contends that by including attributes of methods as possible factors, this study

broadens the understanding of Bangladeshi women's contraceptive decision-making. He urges the inclusion in future surveys of a wider range of variables to help elucidate women's method choice, and stresses the importance of programs' offering safe, effective contraceptive methods that are suitable to clients' attitudes, behavior and reproductive goals. —D. Hollander

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## Genital Cutting May Alter, Rather Than Eliminate, Women's Sexual Sensations

Nigerian women who have undergone female genital cutting are as likely as those who have not to achieve orgasm during sexual intercourse, but are significantly more likely to have recurrent symptoms of reproductive tract infection. In a study comparing women who had experienced genital cutting—mostly the less-severe types—with women who had not, 66% of the cut women and 59% of the uncut women said they usually or always had an orgasm during intercourse.<sup>1</sup> Cut women, however, were more likely than uncut women to consider their breasts, rather than their clitoris, the most sensitive part of their body. Cut women were significantly more likely than uncut women to report symptoms such as yellowish and bad-smelling vaginal discharge (odds ratio, 2.8), white vaginal discharge (1.7) and lower-abdominal pain (1.5). The study was conducted in Southwest Nigeria, where approximately 45% of the female population has undergone female genital cutting, usually in infancy.

The researchers recruited women at urban and rural antenatal clinics and family planning clinics in Edo State, Nigeria, in 1998–1999. A structured questionnaire, administered by a trained nurse or midwife, was used to obtain data on the participants' social and demographic characteristics, sexual activity and obstetric and gynecologic history. A physical examination was performed by a physician to determine the type of circumcision, if any, that the women had undergone.

The study sample comprised 1,836 women, most of whom were married. Some 55% of participants had not undergone female genital cutting; 32% had undergone type I genital cutting

(at least partial removal of the clitoris), 11% type II (at least partial removal of the clitoris and labia minora) and fewer than 2% type III (at least partial removal of the external genitalia and stitching or narrowing of the vaginal opening) or type IV (any other genital cutting).

In response to questions about sexual behavior, 56% of cut and 47% of uncut women reported that they had had sexual intercourse in the previous week; the proportions for the previous month were 81% and 71%, respectively. About one-third of each group reported that they were easily “turned on” during sexual intercourse (33% and 35%), and about two-thirds said they usually or always experienced orgasm during intercourse (66% and 59%). Most of the women in each group reported that their partner was sometimes or always the initiator of sexual intercourse (96% and 87%); more than half said that they themselves initiated sex at least some of the time (58% and 53%). When asked to name the most sensitive part of their body, 63% of cut women and 44% of uncut women cited their breasts; 11% and 27%, respectively, named their clitoris; and 26% and 29%, respectively, identified other parts of their body.

Multivariable logistic regression models showed that cut women were significantly more likely than uncut women to report that they initiated sexual intercourse with their partner at least some of the time (odds ratio, 1.3). Compared with women who had not experienced genital cutting, women who had were significantly more likely to consider their breasts the most sensitive part of their body (1.9), and they were significantly less likely to cite their clitoris (0.4).

The mean age at menarche was similar for cut and uncut women (14.6 and 14.4 years, respectively), but cut women had been younger at first intercourse (19.0 vs. 20.7 years), first pregnancy (22.1 vs. 24.3 years) and first marriage (22.9 vs. 25.8 years). After adjustment for confounding variables, however, only the difference in age at first pregnancy was statistically significant: For cut women, the risk of getting pregnant at a given age was approximately 1.3 times that for uncut women.

Reports of recurrent symptoms of reproductive tract infections were more frequent among women who had undergone genital cutting than among women who had not. For example, 17% of cut women reported experiencing lower-abdominal pain, compared with 11% of uncut women. In addition, the proportion reporting yellowish, malodorous vagi-

nal discharge was three times as high among cut women as among uncut women (6% vs. 2%), and the proportion reporting white vaginal discharge was more than twice as high (12% vs. 5%). A greater proportion of cut women than of uncut women also reported itching sensations in the genital area (14% vs. 8%), pain while urinating (4% vs. 2%) and pain during sexual intercourse (4% vs. 2%). Small proportions of women in each group reported genital ulcers (slightly more than 2% of cut women and fewer than 1% of uncut women). After controlling for potentially confounding factors, women who had been cut were significantly more likely than uncut women to report lower-abdominal pain (odds ratio, 1.5), yellowish and malodorous vaginal discharge (2.8), white vaginal discharge (1.7) and genital ulcers (4.4).

According to the investigators, these findings contribute to a better understanding of sexuality outcomes in cut women and provide evidence to negate the argument of female genital cutting proponents that cut women experience reduced sexual sensation (which is expected to make them less likely than uncut women to become sexually promiscuous). In fact, this study found that women who had undergone genital cutting were just as likely as those who had not to report having had recent sexual intercourse and were more likely to report at least sometimes initiating sexual intercourse with their partner. Moreover, women who had been cut were at least as likely as uncut women to report regularly having an orgasm during sexual intercourse; however, they were less likely to cite the clitoris, and more likely to identify their breasts, as their most sensitive body part. Thus, according to the authors, the results of this study suggest that genital cutting does not eliminate a woman's sexual sensation, but instead “shift[s]...the point of maximal sexual stimulation from the clitoris...or labia to the breasts.”

The authors assert that their data also are useful in disproving the argument that “genital cutting...enhances the reproductive health of women.” Instead, the authors conclude, their results “suggest that genital cutting may predispose women to adverse sexuality outcomes.”—C. Coen

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## Offering a Woman Sterilization During an Emergency Cesarean Section May Sometimes Be Appropriate

High-parity Zimbabwean women who accepted surgical contraception during an emergency cesarean section were no more likely to regret having done so than similar women who underwent the procedure during an elective cesarean (2.5% vs. 3.2%). According to data collected from the women an average of 32 months after they gave birth,<sup>1</sup> emergency cesarean patients who had not been offered a tubal ligation were six times as likely to be unhappy about their fecundity status as those who had been offered the procedure. In resource-poor settings, the researcher suggests, it may be unethical not to offer emergency cesarean patients of high parity a tubal ligation.

To examine the long-term reproductive satisfaction of high-parity women in a variety of birth circumstances, the researcher gathered retrospective data on the incidence of regret—both of having had a tubal ligation and of not having had one—among those who needed an emergency cesarean, those who had a planned cesarean and those who delivered vaginally. The researchers surveyed women who delivered at a tertiary hospital in Bulawayo, Zimbabwe, from December 1990 to July 2000; to be eligible for the study, women had to be giving birth to their fourth or higher-order child (or third or higher for women aged 30 or older).

The data, which were collected by mail or by in-person visits, if needed, were available for three groups of new mothers—418 women who had had an emergency cesarean section, 366 who had had an elective cesarean and 749 who had delivered vaginally. These sample sizes reflect varying attempts to contact sterilized and nonsterilized women for follow-up. (For example, 80% of sterilized women were successfully followed up, compared with 38% of nonsterilized women. Although the researchers tried to contact all nonsterilized cesarean patients of high parity, they attempted to reach a random sample of 20% of the far higher number of women who had delivered vaginally.) The mean length of time between the index delivery and completion of the study questionnaire was 32 months.

The women in the three delivery groups were further classified by sterilization status. Women in all six of the resulting groups were in their mid-30s (mean ages of 32–37). At follow-up, women who had delivered vaginally and elected a postpartum sterilization had the

most children (a mean of 6.0), whereas planned cesarean patients who chose sterilization had the fewest (a mean of 4.0). Moreover, the proportion of women whose last pregnancy had been unwanted ranged from 64% among sterilized women who had delivered vaginally to 9% among planned cesarean patients who had either declined or had not been offered a tubal ligation.

Among the 301 emergency cesarean patients who had been offered the option of a postpartum tubal ligation, 11% were unhappy with their situation at follow-up—8% regretted having declined it, 2% regretted their decision to accept it and 1% were unhappy because the clinician had forgotten to perform the requested ligation. On the other hand, 64% of the 117 emergency cesarean patients who had not been given the option of sterilization regretted not having had one. Thus, women who had not been offered sterilization were six times as likely to be dissatisfied as those who had.

Among the 346 patients with planned cesareans whose doctor had offered them a tubal ligation during the cesarean section, 4% were unhappy with their decision (3% regretted having accepted the procedure and 1% regretted having declined it), whereas 65% of the 20 women who had not been offered a tubal ligation regretted not having had one. Thus, among women having an elective cesarean, the risk of dissatisfaction was 15 times as high among those who had not been offered the option of sterilization as it was among those who had been offered the procedure.

Finally, among the 590 women who had delivered vaginally and had been offered a tubal ligation, 11% were unhappy with their subsequent fertility situation (97% of whom regretted having declined that offer), whereas 53% of 159 similar women who had not been given the option of sterilization regretted that omission. Thus, among women who had delivered vaginally, those who had not been offered postpartum sterilization were 4.7 times as likely to experience regret as those who had been offered the procedure.

The general rate of sterilization regret among women who had had the procedure was no higher among those who had had an emergency cesarean (2.5%) than among those who had had an elective cesarean (3.2%), although the proportion expressing regret was far lower

among women who had delivered vaginally (0.5%). (All sterilized women who regretted having had the operation were offered a reversal at no cost; 18 women accepted this offer. Finally, the proportion of nonsterilized women who regretted their lack of permanent protection was significantly higher among women who had had an emergency cesarean (56%) than among those who had delivered vaginally (45%) or by elective cesarean (35%).

The investigator acknowledges the limitations of a nonrandomized, observational study and the bias caused by the disproportionate loss to follow-up of nonsterilized women. He nonetheless asserts that the results show that deciding on a tubal ligation during a stressful situation does not necessarily lead to regret. Indeed, he suggests that the subject be broached in discussions of the possibility of an emergency section during a prenatal care visit.

Among emergency cesarean patients who had been offered a tubal ligation, the proportion who regretted having accepted it (3%) was far lower than the proportion who regretted having turned it down (40%). The researcher concludes that in settings with limited health resources and high levels of maternal mortality, especially deaths related to complications from repeat cesareans, “it is unethical not to offer tubal ligation [to] women of high parity at the time of an emergency cesarean section.” The author of a related editorial<sup>2</sup> agrees, pointing out that the limited availability of interval sterilization facilities, the scarcity of hospitals and the high rates of maternal morbidity and mortality in much of the developing world alter the traditional interpretation that offering postpartum sterilization to women having an emergency cesarean is necessarily unethical.—L. Remez

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