

Townsend, John W.; Khan, M.E.; Gupta, R. B.: The Quality of Care in the Sterilization Camps of Uttar Pradesh. In *Improving Quality of Care in India's Family Welfare Programme: The Challenge Ahead*. Edited by Michael A. Koenig and M. E. Khan. Population Council. 1999. P. 314-330. ISBN 0-87834-099-8.

The Quality of Care in the Sterilization Camps of Uttar Pradesh

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Sterilization for men and women is the most commonly used contraceptive method both in India at large and in Uttar Pradesh. In Uttar Pradesh (as well as nationally), three of every four contraceptive users have chosen sterilization, and about 13 percent of all married women 13-49 years of age have been sterilized. From the beginning of the public program in Uttar Pradesh in 1956 through 1994, a total of 8,136,167 sterilizations were performed. During the 1990s, the annual number of sterilizations performed in the state has averaged about 400,000, of which about 13 percent have been vasectomies and the remainder tubectomies (GOI, MOHFW 1994). About three-fourths of female sterilizations involve laparoscopy, and nearly all vasectomies involve a scalpel incision. No-scalpel vasectomy has only recently been introduced in India.

In recent decades the number of sterilizations performed each year has varied widely, depending upon the government's priorities for the organization of services (e.g., camps or facilities for postpartum women) and its policy on outreach and targets. During the 1980s, for example, the numbers in Uttar Pradesh ranged from a low of 78,438 in 1981 to a high of 751,600 in 1988. Nevertheless, the potential demand for sterilization services in the state is considerable. According to the National Family Health Survey, nearly one-third (31.4 percent) of married women in Uttar Pradesh want no more children but are not currently using any contraceptive method (IIPS 1994). Even among those women who intend to use spacing methods in the future, given their early childbearing, many will eventually choose sterilization to prevent additional births.

Public health care in India is designed to be a cascading system. Each district, containing about three million people, is served by a district hospital and a network of community health centers (CHCS) and primary health centers (PHCs). A CHC is a small hospital with inpatient facilities designed to serve a

population of about 100,000. A PHC is a primary care facility with two physicians and several nurses meant to serve a population of about 30,000. Postpartum centers (PPCs), which provide birthing care and family planning services for postpartum women, may be attached to a CHC or a large PHC. A camp is defined as any grouping of patients for a specific service, regardless of the site or quality. Operationally, even when services are provided at a health facility such as a PHC or postpartum clinic, the event is called a camp if either personnel (e.g., surgeons or an anesthesiologist) or materials (e.g., medicines or equipment) are supplied externally. In Uttar Pradesh an estimated 80 percent of sterilizations occur in camps organized by the Ministry of Health and Family Welfare (Kumar 1988).

The evolution of camps in India has paralleled the changes and development of sterilization services over time (Table 15.1). During the First Five-Year Plan (1951-56), no public sterilization services were proposed. Although India established an official, centrally sponsored family planning program in 1952, most of the services were provided in private clinics and hospitals. By the late 1950s, however, 61 government-sponsored stationary clinics and 16 mobile clinics were providing sterilization services. In Uttar Pradesh the first publicly supported sterilizations were conducted in 1956. The early 1960s witnessed the introduction of new networks, such as railway dispensaries for camps, and also incentives to private physicians to provide permanent contraceptive methods. Mobile services, however, continued to be emphasized because of the weak public health infrastructure.

Table 15.1: Chronology of sterilization camps in India

Period	Description
1951-56	No public sterilization service
1956-61	61 stationary and 16 mobile facilities
1961-66	Incentives to private physicians; railway camps
1967	Targets set; 1.6 million sterilizations to date (83% vasectomies)
1969-74	409 mobile clinics, 4,120 stationary clinics; compensation for mortality
1974-78	Emergency period; 8.3 million sterilizations to date (75% vasectomies)
1980-1985	Laparoscopic method introduced, but not in camps; 4.1 million sterilizations (14% vasectomies)

1985-90	Mini-laparotomy techniques introduced; 4.1 million sterilizations (6% vasectomies)
1990-95	2,328 CHCs, 21,254 PHCs identified as potential sites for camps; introduction of surgical standards

CHC = community health center; PHC = primary health center

In 1967, 15 years after the program's inception, the government set targets for specific methods within the public system. By this time 1.6 million sterilizations had been performed nationally, 83 percent of them involving vasectomy. In response to explicit method targets, the number and size of the camps increased dramatically. In Uttar Pradesh, for example, the number of sterilizations doubled between 1967 and 1968 to nearly 160,000, largely because of this focused effort. The move toward compulsory sterilizations during 1976, promoted by the government under Prime Minister Indira Gandhi, saw the number of cases of sterilization increase to 8.3 million, nearly five times the number only 10 years before. Family planning targets were dropped briefly after major public opposition in 1977, but were reintroduced in 1978. By the mid 1970s 409 mobile services and 4,120 stationary sites were providing sterilizations nationally. With the increase in volume, the incidence of postoperative deaths also grew, and the government began to provide compensation to families who experienced a death due to surgery.

During the 1970s, vasectomy was still the predominant contraceptive method in India, accounting for about 75 percent of all cases. With the introduction of laparoscopic surgery for women in the early 1980s, the percentage of vasectomy cases fell dramatically, to 14 percent nationwide by the mid-1980s. The health system's increasing emphasis on maternal and infant care narrowed the focus of the Family Welfare Programme to women as the demographic target group to reduce population growth. Another innovation in surgical technique in the late 1980s, mini-laparotomy, reinforced the focus on surgery for women. Myths and misconceptions grew about vasectomy, so that by 1993 that method accounted for only 5 percent of sterilization cases at the national level. In Uttar Pradesh; however, vasectomy still accounts for about 12 percent of all sterilizations.

Although the number of sterilizations appears to have stabilized nationally during the early 1990s at about 4 million per year, the number of potential sites for providing sterilization and follow-up services has continued to grow, reaching 2,328 CHCs and 21,254 PHCs by the end of 1994. Despite the large

number of potential service sites in Uttar Pradesh (213 CHCs and 3,716 PHCs) in 1994, only 41 percent of the PHCs had the necessary equipment and facilities to provide sterilization services, and only 14 percent of the state's medical officers had been trained to provide surgical services. The introduction of no-scalpel vasectomy in 1990 marked the first innovation in male contraception in nearly 40 years.

Only in 1991 did the Ministry of Health and Family Welfare promulgate standards for care (GOL, MOHFW 1991). Previously it had issued guidelines but placed much reliance on the skill of individual surgeons and camp organizers. Standards impose a higher level of demand on the system and begin to shift the focus from the number of cases to system readiness and quality. Camps have also changed in size over time. During the early years of the program, it was common for several hundred operations to be performed during a single camp, and surgeons often boasted about the large number of sterilizations they had performed. More recently, camps have become smaller, and a larger number of sites has been used to increase the accessibility of services.

The percentage of eligible couples sterilized has risen with time, not only because of the cumulative effect of sterilization acceptance, but also because the demand for limiting births continues to be high. According to the government's management information system, in Uttar Pradesh between 1988 and 1992 the percentage of couples sterilized rose from 17 to 20 percent. The rise in percentage sterilized in urban districts, such as Kanpur, was more rapid (from 18 to 26 percent) during that period, while the rise in rural districts, such as Sitapur, kept pace, but at a lower absolute level (from 15 to 18 percent).

Annual targets for Uttar Pradesh have varied in the 1990s from 650,000 to 820,000, but the achievement of state-level targets has never exceeded 60 percent in recent years. Target achievement has varied dramatically among state districts, moreover, ranging from 11 percent to more than 136 percent. In districts designated as target-free in 1995, 1994 target achievements for sterilizations ranged from 29 percent in Sitapur to 61 percent in Agra, where the targets were approximately 13,600 sterilizations for populations of about 2.8 million each. Moreover, in recent years about 34 percent of annual vasectomy cases and about 17 percent of annual tubectomies in Uttar Pradesh have been performed during the last month of the fiscal year (March), when pressures to improve the level of target achievement are often intensified.

How the Public Sector Recruits Sterilization Cases and Provides Its Services

Most sterilization services in Uttar Pradesh are conducted in the public sector (93 percent for females and 95 percent for males), and therefore the quality of public-sector services is the logical focus of analysis. The usual sites for sterilization camps are hospitals (about 60 percent) and PHCs (35 percent). Only 5 percent of sterilizations are still provided through mobile services. In the past, schools and other public buildings were sometimes used for camps, but because they were unlikely to have adequate facilities, the use of these sites has been gradually discontinued.

Both health and development-sector staff recruit sterilization cases, but sterilization services are the responsibility of the Ministry of Health and Family Welfare, regardless of the setting. Within the development sector, recruitment is handled by community development workers, who report ultimately to the district magistrate, the most senior government administrative authority within a district. Within the health system, the auxiliary nurse-midwife (ANM) and the male multipurpose worker (MPW) have principal responsibility for recruiting sterilization cases at the village level. Since little counseling is provided in the camps themselves, camp administrators assume that those two entities, the community development workers and the ANMs and MPWs, provide the information clients need for making an informed choice. They also assume that the health system provides the training needed by ANMs and MPWs for proper follow-up. However, clients recruited and brought to the camps by development personnel are less likely than those recruited by health personnel to have undergone adequate screening and counseling. Moreover, development staff are more likely to induce prospective clients to accept sterilization by telling them about monetary incentives, which they disburse. In 1994 the government of Uttar Pradesh allocated one-half of the targets for sterilization to non-health personnel in development agencies, rather than to health system staff.

In theory there is nothing inherent in a camp setting that limits the quality of care, as clients should receive counseling about available methods and their options before they arrive at a camp. In Tamil Nadu, for example, a women's health-advocate group provided diaphragms in a camp setting after providing extensive community education about contraceptive options, potential benefits and risks of method use, and follow-up (Ravindran 1995).

Quality of Care is Measured by Camp Infrastructure and Staff Competence

Although community education is of considerable interest, this chapter does not focus on that aspect of the quality of sterilization services in Uttar Pradesh. Rather, it examines two elements of quality that are under the control of camp organizers and surgeons: the readiness of the camp infrastructure to provide a standard quality of service and the technical competence of providers and their staff.

Data

We draw upon several sources of data. The first is the 1992-93 National Family Health Survey (NFHS), which posed a set of questions to a nationally representative sample of women who had undergone sterilization prior to the survey. The second is research conducted by the Indian Council of Medical Research (ICMR 1982,1991) on sterilization and quality of care in Uttar Pradesh. The third consists of primary data collected by a team of Population Council consultants using participant-observation techniques at three sterilization camps in Sitapur District in March 1995 (Gupta 1995). The Population Council team also conducted interviews with providers in the three camp settings: a PPC, a CHC, and a PHC. They observed some 30 women undergoing sterilization procedures, approximately 10 at each site. Five other women who sought sterilization were denied the service because of contraindications detected during preoperative examinations. The data from these three sources are interwoven in the following section to provide a more comprehensive picture of the quality in camps in Uttar Pradesh.

Results

First, a few facts about acceptors of vasectomy and tubectomy in Uttar Pradesh. They had an average of 3.8 living children in 1991, about 0.5 children more than the national average. The average age at which a woman receives a tubectomy in Uttar Pradesh is 32.8 years, three years higher than at the national level (GOI, MOHFW 1994).

Few data exist on the quality of sterilization services in Uttar Pradesh as perceived by female acceptors, but the NFHS asked women who had undergone sterilization about the problems they subsequently experienced. Whereas only 11 percent of vasectomy acceptors reported one or more problems, nearly 28

percent of women experienced one or more problems following tubectomy (Table 15.2). The most common complaint in both types of sterilization was post-operative pain or backache (20 percent for women and 7 percent for men). The second most common complaint was weakness or inability to work (10 percent for women, 4 percent for men). Given that women's work is central to the welfare of most families, a woman's inability to work even for a day or two can be a major family problem. Women considering the operation for themselves understandably pose such questions to health workers as "Who will care for my children?" and "Who will prepare meals and do the work in the fields?"

Table 15.2: Client's reports of problems with sterilization: Uttar Pradesh, National Family Health Survey, 1992-93

Problem	Percentage reporting problems related to	
	Female sterilization	Male sterilization
One or more problems	28	11
Pain or backache	20	7
Weakness or inability to work	10	4
Fever	3	2
Sepsis	1	<1
Failure; women became pregnant	<1	--
Loss of sexual power	<1	<1
Other	4	1
No problems	72	89
(No. of clients)	(1,287)	(151)

Source: IIPS 1994.

Their fears about sterilization are not unfounded. The Indian Council of Medical Research (ICMR) (1982) found that one month after the operation, pelvic infections afflicted 15.5 of every 1,000 Indian women undergoing the procedure,

and 84 of every 1,000 women reported problems with the wound. As with any major surgical procedure, sterilization carries with it mortality risk. According to the same review, mortality rates among postoperative women were 6.2 per 10,000 for sterilizations unaccompanied by a birth or abortion, 3.3 per 10,000 for post-abortion sterilizations, and 0.7 per 10,000 for postpartum sterilizations (ICMR 1982). Most sterilizations performed postpartum or post-abortion are conducted in PPCs, where staff and facilities are generally better prepared and equipped than elsewhere to provide this service. Mortality among vasectomy cases is virtually unknown, and morbidity following vasectomy is also lower than for female sterilization (ICMR 1982).

Recent data from Tamil Nadu indicate that death rates associated with female sterilization in the public sector are considerably lower there than in Uttar Pradesh (ranging from 1.0 to 1.8 per 10,000 sterilizations between 1989 and 1994), but still higher than reported for sterilizations conducted in private nursing facilities or by nongovernmental organizations (Ramasundaram 1995). Research in Karnataka suggests that self-reported symptoms of gynecological problems are significantly higher among women who have undergone a tubal ligation than among those using reversible methods of contraception or no method (Bhatia and Cleland 1995). Although there is still debate about causal mechanisms, these data suggest that adverse reactions to sterilization when it is performed under low standards of hygiene are not unique to Uttar Pradesh, but widespread.

Although sterilization is promoted as a permanent method, method failure is also a significant problem. In the ICMR study (ICMR 1982), method failure ranged from 1.1 per 1,000 for laparotomy to 5.9 per 1,000 for laparoscopy. Rates can be expected to vary according to the competence of the surgeon and the readiness of the camp to provide the support required for quality service. Such readiness should include, at a minimum, sufficient light, adequate surgical supplies (e.g., sutures, thread, needles), and equipment (e.g., autoclaves and laparoscopes) in working order.

In general, the data from the participant-observation study of the three sterilization camps in Uttar Pradesh (Gupta 1995) suggest major differences in readiness by type of facility (Table 15.3). The camp held at the PPC appeared to have adequate space, light, and water, as well as appropriate equipment and supplies (e.g., gloves and slippers). The CHC had a somewhat less adequate setting (no running water) but, like the PPC, it did have a considerable infrastructure and trained assistants for laparoscopic ligation. In contrast, the PHC had an operation theater (OT) in poor condition, inadequate lighting due to

irregular electrical supply, and equipment in poor condition, including evidence of rust.

Table 15.3: Infrastructure and equipment, by level of facility: Three campus in Sitapur District, Uttar Pradesh, 1995

Infra-structure or equipment	Condition recommended	Condition observed, by facility		
		PHC	CHC	PPC
Space	Space at least 3mX3m with one entrance and one exit	Small, inadequate, paint peeling	Fairly adequate	Adequate
Lights	Nonreflecting focus lamps; working generator (required)	Regular power source inadequate (power failure during observation); working generator available	Adequate	Adequate
Water	Running water available and basin present	No running water; basins present	No running water; basins present	Running water available
Equipment	BP instrument, D&C set, uterine elevator, scissors, scalpels, retractors, clamps, bowls, trolleys, stand and suction apparatus (all required)	BP instrument, D&C set, bowl, trolleys (in poor condition); instruments water-stained and rusting	BP instrument, D&C set, bowl, trolleys	BP instrument, D&C set, bowl, trolleys, suction apparatus
Anesthesia trolley	Anesthesia trolley or anesthetist with ether, endotracheal tubes and oxygen cylinders	Trolley not present; instead, oxygen cylinder plus key	Respirator bag, laryngoscope, and oxygen cylinders	Boyles apparatus present
Cleanliness	Clean toilets with running water	Toilets present but without water	Dirty toilets, no water	Dirty toilets
Gloves	100-200 pairs of sterile gloves	Present	Present	Present

Staff assisting in ligation	for	Trained assistants	Not trained	Trained	Trained
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BP = blood pressure; CHC = community health center; B&C = dilation and curettage; PHC = primary health center; PPC = postpartum center.

Although water should be available in every camp setting, of the three sites visited, only the PPC had running water. Trained assistants were available at the CHC and the PPC, but the assistants at the PHC camp were not actually trained for laparoscopic ligation and needed constant instruction on procedures from the surgeon. The condition of toilet facilities was a problem in all three camps. The Ministry of Health and Family Welfare has promulgated recommendations for the proper maintenance of toilet facilities at the camps, but those recommendations were not being heeded. Ramachandar and Barge (Chapter 13) and Mavalankar and Sharma (Chapter 14) have observed a similar lack of consistent hygienic standards at sterilization camps in Madhya Pradesh and Gujarat, respectively.

Readiness for quality goes beyond a camp's infrastructure and includes willingness on the part of staff to comply with standards of care set by the institution. Table 15.4 contrasts the practices observed in Sitapur District with the standards defined by the Ministry. For example, at the PPC, the OT is supposed to be fumigated weekly; but according to interviews with staff, it is fumigated fortnightly. Clients are asked to arrive early in the day so that clinical and laboratory tests can be done, but then they must often wait hours for the surgeon, who may be delayed when several camps are scheduled on the same day. Camp personnel are supposed to give clients preoperative instructions, but in practice clients receive little information or reassurance about what will happen to them before, during, or after the procedure. They are merely instructed to do what they are told. Prior to the operation, a woman's pulse and blood pressure (BP) should be checked, a pelvic examination done, and blood and urine samples taken and analyzed. In its study of camps in Uttar Pradesh, the ICMR found that BP was checked in 89 percent of the cases, blood was tested for anemia in 88 percent, and urine tested for diabetes in 95 percent (ICMR 1991). The camps usually performed pelvic examinations, but it is unclear why 1 in 10 cases did not get all the laboratory tests that are a prerequisite for this service.

Table 15.4: Mandated versus observed operative procedures for sterilization: Three camps in Sitapur District, Uttar Pradesh, 1995

Operative procedure	Mandated	Observed
Fumigation of OT (PPC)	Weekly	Fortnightly
Instructions to clients	Preoperative instruction	Little information or support
Physical examination and lab tests	Pulse, blood pressure, pelvic exam, blood, urine	Completed but irregular reporting
Sterilization of reusable needles	20 minutes	5-10 minutes
Time between injection of anesthetic and sterilization (CHC)	30-60 minutes	Variable, sometimes, hurried
Disinfection of laparoscope (CHC)	15 minutes	5-8 minutes
Postoperative care	Discharge after 6 hours; medicines, instructions	Discharge after 3-4 hours; medicine given, limited advice
Follow-up	In 7-30 days	At 2, 4, and 7 days for dressings and antibiotics

CHC = community health center; OT = operation theater; PPC = postpartum center.

In the cases observed in Sitapur, all the required examinations were completed. However, the results of the laboratory tests were sometimes reported incorrectly. In a review of the registers, we found that identical levels of hemoglobin were recorded for most of the women, and one woman whose hemoglobin level was low according to the test was reported as having an adequate level. Clinic staff told us that about 70 percent of pregnant women and women with infants were anemic. One nurse commented that if all the women with anemia were considered ineligible for sterilization, the camps would have no clients. Besides, she added, after an ANM spent a great deal of time motivating women to be sterilized, if the women were then denied the service, the ANM would no longer be welcome in the community.

As all ANMs from the area are required to attend the camps, whether they have recruited a case for sterilization or not, the number of health staff at a camp is sizable. During the camps, most ANMs engage in conversation with one another and have little contact with their clients. In recent years, tents have been set up at larger camps so that camp personnel can provide information to clients' family members and other visitors, but the long delay before the surgeon's arrival is not used for counseling or providing other services. For example, if a woman accompanying a sterilization client to the camp would like to have an intrauterine device (IUD) inserted or begin to use oral contraceptives, those services are not immediately available. She will be referred to the PHC or given an appointment for a later date, even though ANMs and medical officers are present. If, however, the camp is held at a PHC or CHC and IUDs are readily available, women wanting to use this method are usually accommodated right away.

The 1991 study by the ICMR on sterilization camps reports that 97 percent of women opting for sterilization completed the required consent forms, in return for which they received an incentive payment of Rs. 145. In 72 percent of the cases, the client's privacy was respected during the preoperative examination, but only 11 percent of the clients were given a change in clothing for the operation. Only 87 percent of the cases were provided with premedication, and 94 percent were provided with local anesthesia. The laparoscope was properly sterilized in only 73 percent of the cases, and in 9 percent of the cases it was not sterilized at all.

The support services observed in 1995 were also deficient in quality, as evidenced by improperly sterilized equipment and discomfort reported by clients. The Ministry's standard requires reusable needles to be sterilized in an autoclave for 20 minutes. In practice, needles were usually left in the autoclave for only 5-10 minutes (Table 15.4). Injections of anesthetics are supposed to be given 30-60 minutes prior to surgery. In practice, because the arrival time of the surgeon was uncertain, the injections were given either too soon or, in some cases, in a hurried fashion just prior to the sterilization procedure, with the result that many clients experienced pain.

In our view and that of the staff we interviewed, the surgeons are generally competent to perform the sterilization procedure. The weakest component of care is the support provided by the health system. Camp surgeons complain bitterly about the problems of support, aware that equipment is often not sterilized according to prescribed standards and that tests are sometimes not completed. At times they feel overwhelmed by the system, which is driven by

acceptor targets. If a surgeon complains to his superiors, he can expect little help in resolving the immediate problems and is identified as an uncooperative member of the team. As the person with ultimate responsibility, for the quality of care in the camp, the surgeon is in a difficult position.

Postoperative care is an important link between the camp service and follow-up care within the community. The Ministry recommends that patients be discharged after six hours of rest, and that they be given such medicines as analgesics before departing from the camps. Patients are to be instructed about the proper care of the wound, and the local PHC is to provide follow-up from 7 to 30 days after the operation. In practice, patients are often discharged only three to four hours after the operation. ANMs feel responsible for the relatives who accompany the patients, often providing them with food and transport. The families also desire early discharge so that they can reach their villages during daylight hours. The Revenue Department often provides transportation home for patients. Government ambulances are available in only a few sites and are not generally used for patient transport. In addition, many ambulances are not suited for rural roads.

Patients receive little advice at the camps, although ANMs provide consistent follow-up care in the community. A verification study of sterilization acceptors indicated that 80 percent received follow-up services at home (Sawhney 1986). According to recent in-depth interviews, ANMs make home visits to women who have undergone sterilization at intervals of two, four, and seven days after the procedure, to change dressings and provide antibiotics if they find evidence of infection. Sometimes the ANM pays for the antibiotics herself to ensure a client's satisfaction because an unsatisfied client makes recruitment of subsequent sterilization cases more difficult. ANMs report spending about Rs300 on each case to provide tea to family members during the long day at the camp and to purchase medicines for the client.

The ICMR found that only about 11 percent of sterilized women in Uttar Pradesh were afforded a postoperative recovery period of more than six hours (ICMR 1991). Ninety-five percent of the cases received the minimum postoperative advice about care of the wound and follow-up, and 97 percent received medicines. A trolley or stretcher was used to transport the clients to the postoperative care room in only 73 percent of cases. In other cases, the women were carried by a camp assistant or were asked to walk.

Issues of Methodology

Despite the apparent clarity of these results, several methodological issues may affect the conclusions arising from this analysis. The issue of standards is perhaps the most important one. The fact that the Ministry of Health and Family Welfare has developed and published standards of care at the central level does not necessarily mean that those standards are known to district-level staff. For most staff, they were neither a part of their preservice nor in-service training, and it is unclear whether the standards would even be acceptable to frontline providers. At the point of care delivery, all standards are local. One cannot expect care to be uniform in all settings, and certainly the data we have presented are consistent with the variability one expects between PPCs and PHCs.

The fact that we observed only three camps in this study is not problematic from a methodological perspective. The presence of service-delivery problems in those sites indicates the need for action, although it in no way implies that similar conditions are present in other districts. It does suggest, however, that an effort should be made to determine whether similar problems exist elsewhere. Similar studies in Bihar ([Parveen 1995](#)), Gujarat (see Chapter 14), and Madhya Pradesh (see Chapter 13) indicate that an unsatisfactory level of services at such camps is widespread. Anecdotal evidence from numerous camps also suggests that staff and clients alike would welcome more attention to quality.

Another common issue is the reliability of the observer in complex and often crowded camp settings, which can be reduced to two questions: Would a different observer witness the same events during the same session, and would the same observer see the same problems over time in the absence of intervention? In the present case, the observer was a physician who had provided services in similar sites. One would expect that the measurement of some routines, such as the sterilization of instrument, would be more reliable than observations about, for example, the arrival time of the surgeon.

Of equal concern is the issue of validity. The physician-observer was accustomed to the problems of lack of running water, less than ideal conditions in the OT, and the disorganization of sterilization camps. Because of this, he may have been less critical of the inadequacies observed than another observer might have been. Additional methodological studies are required to better define the parameters for data collection on the quality of services, particularly indicators and the use of observations.

Conclusions

What does quality have to do with the number of sterilizations and the achievement of targets? Program managers interpret quality of care in different ways, depending upon the outcome they desire. Those managers who are concerned primarily about limiting population growth tend to associate it with motivating clients to accept a particular contraceptive-usually a permanent or long-acting method-rather than offering a range of methods; and they often limit follow-up to managing complications, rather than providing information to acceptors about care or support for method switching. Such managers often regard quality as a feature of the "contraceptive hardware" or of the age or parity characteristics of the acceptor, rather than as an essential element of the service provided.

The data we have presented indicate that the quality of care is a multifaceted phenomenon. Readiness to provide quality services varies by level of facility. Basic infrastructure (electricity, water, and sanitation) is lacking in most PHCs and even in some CHCs. Although the technical competence of the surgeon may be good or even excellent, the support systems that would allow the surgeon to provide a high quality of service are often lacking. Support deficiencies include untrained assistants at the PHCs, improper procedures used by even trained staff to sterilize equipment, incomplete coverage during preoperative screening tests, and inadequate follow-up for controlling infection and treating complications.

The issue of standards is an important one for program managers and staff alike. Standards define what is expected of service providers. If they are consistently not met, the health system has several options: it can change the standards, withdraw the facility's authorization to provide the service (as has happened in the case of medical terminations of pregnancy), or replace the workers. More commonly, program managers make adjustments in training, supervision, operating budgets, and inventory to ensure that locally acceptable standards are met.

The size and location of a camp affect the management of quality. An urban PPC with an established system for patient flow and a functioning laboratory is better prepared to deal with the demands of large case loads than is a PHC, which normally has fewer cases and infrequent contact with surgical cases. Large camps (those with more than 20 cases) place a major administrative burden on PHC staff and facilities.

The role of the Revenue Department in recruiting cases and supporting the operation of camps also remains controversial. Revenue Department staff are interested in recruiting sterilization cases to meet targets and all too often have little or no concern for the long-term welfare of the clients or their families.

Given the large demand for sterilization services, the Indian government's strategy of relying on camps is likely to continue as long as local government staff and facilities are unable to provide sterilization services without external assistance, and as long as sterilization targets require the recruitment of large numbers of clients at the end of each fiscal year. Given that reality, policies and practices are needed that make an increasing commitment to quality. District authorities must make a commitment to provide the facilities, equipment, trained staff, and procedures necessary to ensure that basic quality is guaranteed to clients seeking sterilization. Given the large number of sites, external quality-assurance efforts are unlikely to meet with much success. It is in the long-term interest of both clients and the health system that quality be a concern at all times, not just after quantitative goals are achieved. The basic and essential elements of improved health services in Uttar Pradesh are an awareness of standards, a focus on the system's readiness to provide quality, and proper financing to ensure that promised care is delivered. At the district level, research has a role to play in monitoring the quality of care for program management. It is essential that the health system monitor services and measure results. Currently the system measures outputs in terms of the number of users but invests little effort in monitoring the inputs or the quality of care being provided.

Improved quality is one of the promising goals of India's new population policy. But changing priorities means changing those processes that lead to poor quality and the underutilization of health services in states like Uttar Pradesh. The large unmet need for limiting births identified in the National Family Health Survey, particularly in settings where the health system has traditionally provided monetary incentives to clients and providers alike, is evidence that poor care results in underutilization of family planning services. Over time, national, state, and local authorities have made efforts to reduce the obstacles to quality in camps. Nevertheless, experienced observers of the program in Uttar Pradesh have noted how the obstacles faced by providers in the early 1970s seem remarkably similar to those confronting providers today. If the national program is to meet both its goals and clients' needs, it must make a renewed commitment to improving the quality of the services it provides.

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