

The Challenge of Contraceptive Implant Removals in East Nusa Tenggara, Indonesia

By Terence H. Hull

Indonesia has the largest contraceptive implant program in the world, with a decade's experience in promoting the mass acceptance of the method.¹ Following five years of clinical trials, Indonesia approved the general use of implants in January 1986, and in the following year, more than 44,000 women nationwide obtained the method. In 1987–1988, the number of implant acceptors was 146,000; by two years later, the annual number of insertions reached 400,000.

This very rapid increase in insertions clearly placed strains on the systems for training staff, providing client information and monitoring users; consequently, after 1991–1992, the annual number of new acceptors fell to less than 300,000. In 1994–1995, the number had again climbed to more than 400,000, and a year later, the program provided implants to half a million women. In 1995, while exploring possible domestic production of implants using one or two rods, Indonesia considered increasing the capability of its health and family planning system to serve two million new implant acceptors a year in-country and to export implant kits to neighboring nations.

The contraceptive implant is a method of continuously delivering sufficient hormones into a woman's bloodstream to provide long-term protection from pregnancy. The hormone is packaged in six small plastic rods, which are inserted under the woman's skin, usually on the upper left arm. Its gradual release keeps the woman's total hormonal levels high enough to prevent ovulation and implantation. As the hormone in the rods is dissipated, the hormone levels in the bloodstream fall, and ovulation resumes. With the rods in place, the amount of time it takes for ovulation to resume depends on the woman's body mass and normal hormone production, but tests have shown that pregnancy rates begin to rise slowly after five years, and more quickly as time goes on.²

The recommended way of using the method is to leave all six rods in place for five years and then remove them. If the woman desires continued contraceptive protection, she can have another set of rods inserted immediately, or she can switch to any other method of birth control. A woman who does not have the rods removed after five years and does not adopt a supplementary form of contraception faces a growing risk of pregnancy (including ectopic pregnancy).³

Both the rapid growth in use and the plan to expand use in a major way (which has been halted by the economic crisis of 1997) raise questions about the capacity of the health and family planning system in Indonesia to guarantee the quality and efficiency of implant services. A number of research efforts on this topic are being carried out by the Indonesian National Family Planning Coordinating Board (BKKBN), with funding from the World Bank and the U.S. Agency for International Development, and with technical assistance from the Population Council.⁴

Studies focusing on single communities or even single provinces in Indonesia are unlikely to yield adequate insights into the dynamics of implant insertion and removal services on a national level, because practices vary widely. Studies of both quality of services and adequacy of follow-up care are particularly difficult to carry out, because women's clinical records frequently are lost or discarded during the five years after they obtain the method. Mass insertion campaigns are limited in geographic scope, and waves of training leave very heterogeneous legacies of knowledge and practice among providers, whose patterns of work rotation also disrupt efforts to trace the impact of special interventions. Thus, conclusive studies of implant services must, almost by definition, be national in scope and detailed, yet they will be subject to various biases and

errors, and quite expensive to carry out.

Although well aware of these constraints, a research team (of which the author was a member) from Australian National University and the Indonesian Institute of Science that was studying marriage and family planning decision-making in the province of Nusa Tenggara Timur in January 1996 gathered information on implant use recounted during interviews with providers, users and other community members in three communities on the island of Timor. Spontaneous comments and discussions about implant acceptance and, in particular, problems associated with timely removal led the team to look closely at information available from clinics to assess whether standard medical records were adequate to keep track of users over the five years following insertion.

Three clear points emerged from these investigations that may have applications locally, nationally and even internationally. First, implants were very popular, despite a few respondents' serious concerns about side effects and services. Second, providers and users alike lacked a full or clear understanding of how the method works and why it expires in five years. Third, many women do not obtain timely removals of their implants, but there is not enough information available to correctly assess the nature or magnitude of any problems these delays might produce.

Acceptance and Voluntarism

At first glance, a contraceptive method involving puncturing skin on the upper arm, inserting a stainless steel tube and injecting a "fan" of small plastic rods that remain vis-

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ible under the surface of the skin seems a very intrusive and discomforting thought. One might expect that many women would be afraid of the procedure and apprehensive about potential problems.

Yet the women we interviewed in households and clinics expressed more interest and enthusiasm than fear, even when they had misgivings about the conduct of the national family planning program—the major supplier of implants in the province. Women find the implant attractive because of its long-term effectiveness. In addition, the method appeals to them more than sterilization because it is reversible, more than the IUD because it does not require vaginal examinations and more than the pill because it does not require constant vigilance.

Women also like that the implant is under their control—i.e., that they can have it removed, and have their fertility restored, at will. However, the device is expensive to produce and insert, and in Nusa Tenggara Timur, these costs are borne by the government; thus, providers try to prevent frivolous or temporary considerations from precipitating requests for removal. As a result, economic factors often undermine voluntarism in the use or termination of the method.

Some respondents told of difficulties getting the devices removed, especially if they requested removal before five years were up. (The stories are similar for IUDs.) If a client goes to the health center for a removal, she is discouraged in a variety of ways—instructed to keep trying, given palliative medicines to treat bothersome side effects or told that removal is not immediately available. If she is persistent, she can achieve her goal by going to the midwife's afternoon (private) practice, where the service will be provided, but for a higher fee than is charged at government facilities.

One woman in Kupang, the provincial capital, related the difficulties experienced by a neighbor and a cousin when they felt unhappy with the implant. Both lost weight while using the method; the respondent described them as looking like skin and bones, even though previously they had been "robust" and had experienced no problems sleeping or eating. The problem was attributed to "*tidak cocok*," a mismatch, and the women had to force the midwife to remove the rods. As the woman expressed it: "Yes, we fought with her tooth and nail, until finally she did the removal."

Immediately afterward, she reported, they regained their lost weight. In the respondent's mind, the association was clear: Because the removal was followed by weight gain, the implant had caused

the weight loss. Nothing that the woman and her friends had heard from the service provider contradicted their interpretation. By making removals difficult to obtain, the provider had undermined their confidence that the health system was concerned about their welfare.

Many respondents noted that while the midwives' efforts in the clinics are aimed at ensuring that rods are retained, the same midwives may be willing to perform removals without question at their private practices. This does not surprise clients, since one of the major reasons for going to an afternoon clinic in a rural area is to get better service, as implied by the higher price and measured in terms of conformity with clients' wishes.

Another dimension of voluntarism is more difficult to study. When implants were first introduced into the Nusa Tenggara Timur program in the late 1980s, they were provided through regular special drives (also called safaris), which involved gathering women in groups to obtain services on one day. This approach economized on the time of the limited number of providers who were trained to insert implants, and it allowed more intensive supervision by senior BKKBN field staff who attended the event.

However, according to the accounts of clients and providers, the women received only limited information about the method, and many participated more out of a sense of duty to their community than out of specific interest in adopting the method. Some of these women (including the wife of one official) explained that they were "model users," who encouraged other women to adopt the method but had the rods removed after one or two years because of "dizziness" or other vaguely defined health problems.

Thus, the safaris backfired because the "models" were not strongly motivated to use implants over the long term, but were people of influence, whose experiences with "medical problems" and private removals were discussed widely in their neighborhoods. Safaris also suffered from problems of recordkeeping, since the services were provided outside the clinic, by staff brought in from city hospitals. All in all, the special implant drives of the late 1980s are remembered as times of questionable service quality.

Understanding of the Method

As part of the official family planning program in Nusa Tenggara Timur, the implant is introduced and discussed in a variety of meetings conducted by fieldworkers; both women and men seem to know the term

"implant." They also refer to the device as a "*susuk*," a word that the BKKBN has appropriated from Javanese, which originally referred to a piece of metal placed under the skin to magically enhance beauty or attractiveness. They know that something is put in the arm and that after five years it should be removed. They are less clear about why it should be removed.

As a result, many providers and users have little motivation to ensure that removals are carried out in accordance with the established procedures. Without a systematic and clear implementation of such procedures, it is easy to see how the program could be confused about the magnitude and causes of the problem of overdue removals, and why the simple repetition of rules will not overcome the difficulties.

The most common misconception is that the number of rods is linked to the duration of effective protection. Many people believe that each rod is good for one year, and thus incorrectly report that they have five (rather than six) rods for five years' protection.* For example, one woman in Kupang noted:

"Around here, people say that if you put in three needles [rods], it means three years; if five, it means five years. If that's the case, then I have five years, at which point they can be removed. That's what they say."

Most people we interviewed, users and nonusers alike, know that the rods should be removed after five years, but they are not sure why. Because the concept of a declining amount of hormone is not clear, they think this might be an arbitrary rule with little health consequence. Thus, the notion emerges that the rods themselves prevent pregnancy and can be maintained after the five-year limit as long as the woman has no medical symptoms.

Because the family planning program relies heavily on volunteer and community workers to spread the message and maintain the motivation to practice contraception, many women discuss removal of the implant first with their local volunteer. In discussions with neighbors, one volunteer said he found that women often delayed coming forward for removal because they were afraid to disturb a method that had effectively controlled their fertility for a very long time: "They seem to say: 'Don't tell me that if the rods are removed, there will be another pregnancy. Hell, who wants to carry around another kid? I'm tired of that.' That's the attitude now."

Though long a volunteer, and the veter-

*None of the women reported that they had received fewer than six rods, but only that they assumed they had five rods in their arms.

an of many training sessions, this worker could not explain why the rods had to be removed. A Community Health Center (Puskesmas) paramedic whose wife had been using implants for two years made it clear that there was a general interest in stretching the period of use beyond five years. While the medical staff may understand that the device has declining potency, they are quite sanguine about determining the timing of removals and believe removals have become a problem because "village women" are uncertain about time.

One worker, for example, recounted that

"Ultimately, . . . the difficulties of implants in the future, as now, will be less matters of technology than problems of field service organization and client and provider education."

his wife preferred to get an implant rather than having him obtain a vasectomy, because she had heard of women who had retained implants for six or seven years without becoming pregnant. He explained:

"The people who are most often that late have themselves failed to calculate the correct removal time. They are village women, in isolated places, far from health facilities, and when they check their acceptor cards, they see that they are late in getting the removal."

Another element of knowledge that should be widespread but is not is the appropriate steps for a woman to take once the implant has been removed. Practitioners and health agencies around the world are quite open to the possibility of inserting another set of rods for a second period of five years. Trainers note that the second set can be inserted at the same time that the first set is removed, using the same incision, unless difficulty in removal causes swelling or excessive bleeding. Alternatively, a second incision can be made

*The international experience on this is still clouded with disagreement. A 1992 report on the implant stated: "All women should have the capsules removed after five years in any case because little is known about the effects of implants left in place longer." (Source: McCauley AP and Geller JS, Decisions for Norplant programs, *Population Reports*, 1992, Series K, No. 4, p. 5.) In contrast, recent work by Family Health International looks at implants as a form of voluntary sterilization, in which further childbearing could be prevented by simply continuing to add active rods over time. Spent rods would be left in place, on the assumption that they pose no danger, because leaving them avoids the potential trauma and added costs associated with removal. (Source: Fortney J, Family Health International, Research Triangle Park, NC, USA, personal communication, 1997.)

in the same or the other arm.

In Nusa Tenggara Timur, practitioners discourage insertion of a second set of rods, arguing that women need a "rest" after using implants for five years. Generally, they recommend use of an injectable or IUD instead. Sometimes the reason they give for discouraging follow-on use is the need to have the wound heal after the removal, as one man related:

"Actually, [my wife and I] wanted to have a reinsertion, but because the removal wound was not healed, it was decided to have the injection first. I encouraged my

wife to have another implant, but she was afraid to have the rods put in again."

As this man discussed his wife's experience with the implant, another issue—

closely related to misinformation about the potential for follow-on use, but in some ways more important—emerged. The service provider and counselor had failed to reassure a successful user about the rods' mechanism of action and stability; as a result, even after five years of use, she was fearful of rumored side effects discussed in the community:

"Right from the start there were six rods put in the one place, and there they stayed until they were removed. But according to the experience of the health workers doing the removal, only my wife among the family planning users had no problem, while the others had rods move around. Others had the rods in place but had difficulty in the removals. So that made my wife—well, she was scared to have new rods inserted."

Literature stressing the need for intensive communications to educate clients, providers and managers about the nature of the contraceptive implant has warned against allowing rumors and misinformation to multiply and create uncertainties among actual and potential users.⁵

Achieving Timely Removals

If women do not understand the need to remove the rods,* and if some women do not request timely removals, the question for the program is how to identify women who have had implants in place for five or more years and persuade them that they need immediate assistance. Respondents who were familiar with health care delivery in both rural and urban areas contended that differences in service delivery style in the two settings contribute to the removal problem;

they did not, however, commonly believe that rural women are somehow less capable of managing their affairs than their city cousins. One doctor in Kupang who had worked in both rural and urban areas described the differences between the two:

"In the city, it is rare for the removal to be delayed. But around 70 kilometers outside of Kupang, there are lots of cases. For instance, in Takari, there was a mass program of insertions [years ago], but now we don't know where the women go for removals or whether [their implants] have been removed."

One type of problem commonly encountered in the field was found in the regency of Timor Tengah Utara, where it had been reported that many women were given implants during mass mobilization and demonstration campaigns in 1988–1991. A review of the records made available in the clinic revealed that many apparent users were clustered in a hamlet that was now under the administration of a new clinic, and these women's record cards were no longer held in the facility that performed their insertions. (Even when records were available, however, they were of little use for epidemiologic study, since they provided only the user's name and hamlet. They offered no information on follow-up checks, medical indications, removal or method failure. Such information would need to be collected by a special survey, which would be expensive to conduct.)

The midwife in charge of the district supervised both clinics and had records of the number of implants inserted. In many cases, she could remember the events in 1988–1991, but she found it difficult to locate any records of removals. By her memory, though, she and the doctor had carried out only a few removals. Given the dates of insertions and numbers of acceptors, more than 25 women would have been due for removal.

When asked about the removals already carried out, she told of her own informal training in insertions and the dilemma she faced when a couple of the women came a year or so after acceptance, asking for removal. The first of these women was referred to the nearest hospital, 32 kilometers away. When the second woman came forward, the midwife decided to accompany her to the hospital, to watch the removal. On her return to the clinic, she asked the doctor's permission to try a removal, and when the next client came forward, she repeated the procedure she had seen in the hospital; in about 30 minutes, she had successfully removed all of the rods, with a minimum of trauma.

Since then, the midwife has performed a number of other removals, usually in the government clinic, but occasionally in the Catholic clinic down the road. She is confident in offering services, although she is not certified in either inserting or removing implants. A number of other paramedical providers in the district handle implants, and none of them have formal training or certification.

Deciding that we could not rely on the clinic records and memories of staff to determine the number of overdue removals, we visited a hamlet where 16 women who had obtained implants in 1988–1989 resided. The 17 kilometers of gravel road separating them from the main road is regularly traversed by minibuses and vans, but getting to the clinic is still difficult and expensive. A village midwife had once been assigned to set up a practice in the hamlet, but she stayed only a few nights before returning to the city.

Two acceptors and a number of local leaders gathered to discuss the experience with implants. Following about an hour of making, checking and rechecking lists, those assembled agreed that the 16 women had all had removals, and that most of the procedures had been done by a government midwife, the local *mantri* (paramedic) or the doctor. Nobody could say for sure, but it appeared that many of the removals were carried out as part of the private practices of these government employees. After their implants were removed, most of the women were advised to use an injectable or IUD, and a few decided to have a second or third child.

When asked how they had remembered to have the removals, the two acceptors first said that they knew their five years of use had expired. But later they mentioned that the paramedic had visited the hamlet in 1993 and read their names from a list he had compiled. He had done their removals free of charge. They said that they had never been given acceptor cards* and had no written record of either the insertion or the removal of the rods.

Part of the difficulty of monitoring removals is that administrative pressures in the family planning program are aimed at increasing acceptance and discouraging reductions in the numbers of users. Thus, the BKKBN and Puskesmas workers have no incentive to discover and record instances in which women have had the rods removed privately. As a result, the number of women recorded as being current implant users in all three study sites was inflated by the number of reported current users who had actually

had the device removed already; in some cases, these same individuals were also recorded as using injectables or other methods adopted after the removals.

Interviews with a number of BKKBN and health center staff indicated that this was less an indicator of purposeful misreporting than of a lack of motivation to work through and correct the complex patterns of inconsistent information found in subdistrict, Puskesmas, private clinic, fieldworker and family welfare survey records. There is no single accurate, authoritative record of the insertion, monitoring and removal of implant rods.[†] To even work toward such a goal would involve deflating current user numbers and dismantling professional domains of administrative authority. From the viewpoint of local workers, these are not desirable challenges to tackle.

When we asked the acceptors and officials what they thought about the delayed removal and loss of contraceptive effectiveness of rods, they indicated that they knew little about how the implant worked or about the impact of removal delays. Some officials said they had heard that the rods could be good for seven or eight years, and others spoke of the need for removal to allow the woman to “rest” and change methods. Nobody interviewed in Nusa Tenggara Timur had heard of the potential link between implant effectiveness and body mass, or the potential increased risk of ectopic pregnancy among women long overdue for implant removal.[‡]

The Method's Future

Clearly, there is no systematic effort to monitor acceptors' implant use, and users and providers alike misunderstand the reasons for removing rods after five years and are confused about what to do after the five-year period of use ends. Nonetheless, the implant remains a widely popular form of contraception, valued for its long-term, high level of effectiveness and its reversibility. One village volunteer summed up the issue neatly in the following way:

“If you use the injection, you have to come back every three months, but with the implant, one procedure gives five or six years' protection. Sometimes [injectable users] who are forgetful or busy have to think of that date of the injection—say it's the 16th—and three months later on the 16th, maybe they are working, or they are busy, or they just forget the date. Obviously, having a method good for five years is easier.”

Nonetheless, without more effective counseling and better monitoring of ser-

vices, the problem of delayed removals could undermine public confidence in the method. Three issues are essential to the continuing success of the six-rod implant among women in Nusa Tenggara Timur. First, they need better information about how the method works so they understand the five-year method life and the essential stability and safety of properly inserted rods. Second, health and family planning programs need more effective methods of monitoring women for the full five years of use and providing them with adequate health care and advice on side effects. Third, clearer and more rigorously implemented guidelines are needed to determine whether removal at five years is required, and to clarify the feasibility of continued implant use into a second or even third five-year period.

While these are difficult challenges for the Indonesian program, changes in technology may be even more important in setting the direction of future implant use. One- and two-rod implants will be easier to insert, but will initially offer only three years of protection. Given the emphasis women place on having five or even more years of protection, the idea of reduced periods of effectiveness may not be appealing.

Moreover, if the clinical guidelines for the three-year method require removal and switching to another method, and if, as now, the institutional provisions for removal are weak and often expensive, contraceptive implants might be regarded by women and programs alike as simply too troublesome to consider. A number of options might be considered to overcome these difficulties, including the regular addition of rods without the removal of spent ones[‡] and the development of sin-

*Respondents in some regions had acceptor cards readily available, but in other places they could not remember ever receiving a card. Observations at clinics confirm that staff are usually careful to fill in and hand out cards.

†Because insertion and removal are likely to be carried out by different service points (public and private), it is difficult to match these records. The annual family welfare survey promises to collect data on current implant use, including the date of insertion. This would be an excellent source for identifying removal needs annually, but examination of the completed survey forms indicates that the year of insertion is often missing or incorrect. The survey is carried out by local volunteers with minimal training. BKKBN supervisors complain that they have great difficulty achieving validity and reliability in the data collection. Adding to the difficulty of the enumeration, the survey is conducted in January and February, the height of the rainy season, when some areas are hard to reach, and toward the end of the financial year, when acceptor targets must be reached.

‡The additive system of continuing implant use needs to consider how to keep track of the sequence of rods, so that a minimal number of active rods would need to be removed in case of a desire to return to fecundity.

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gle- or dual-rod systems with longer periods of effectiveness. Ultimately, though, the difficulties of implants in the future, as now, will be less matters of technology than problems of field service organization and client and provider education.

Luckily, as the Nusa Tenggara Timur interviews revealed, clients and field-level providers are interested in the issues, and health workers are motivated to provide better services.

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Corrections

In “The Challenge of Contraceptive Implant Removals in East Nusa Tenggara, Indonesia,” by Terence H. Hull [1998, 24(4):176–179 & 205], the references numbered 2–5 should be numbered 3–6, and reference 2 should read as follows: “Hatcher RA, Depo-Provera, Norplant, and progestin-only pills (minipills), in: Hatcher RA et al., eds., *Contraceptive Technology*, 17th ed., New York: Ardent Media, 1998, ch. 20, p. 471.”