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1996

## Indonesia Norplant® removal assessment study

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### Recommended Citation

Fisher, Andrew A., Joedo Prihartono, Jayanti Tuladhar, and Anthony Tan. 1996. "Indonesia Norplant® removal assessment study," Final Report. Jakarta: National Family Planning Coordinating Board, Department of Community Medicine, Medical School University of Indonesia, and Population Council.

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**INDONESIA NORPLANT®  
REMOVAL ASSESSMENT  
STUDY**

**Prepared for  
The World Bank  
and  
USAID/Indonesia**

**by**

**NATIONAL FAMILY PLANNING COORDINATING BOARD**

**DEPARTMENT OF COMMUNITY MEDICINE  
MEDICAL SCHOOL UNIVERSITY OF INDONESIA**

**THE POPULATION COUNCIL**

**July 1996**

## **ACKNOWLEDGEMENTS**

This study was made possible with support from the World Bank and from the U.S. Agency for International Development (USAID). Support from USAID was provided through the Population Council's Expanding Contraceptive Choice Program under the Cooperative Agreement No. CCP-3050-A-00-4013-00; and through the Population Council's Asia and Near East Operations Research and Technical Assistance (ANE OR/TA) Project under Contract No. DPE-3030-Q-00-0023-00. This report was prepared by Andrew Fisher with the Population Council, Joedo Prihartono with Medical School University of Indonesia, Jayanti Tuladhar with the Population Council and Anthony Tan with the National Family Planning Coordinating Board (BKKBN).

## EXECUTIVE SUMMARY

The goal of this NORPLANT® assessment study IS to provide BKKBN, the Ministry of Health, and various donor agencies (The World Bank and USAID) with detailed information on the experience of NORPLANT® clients who had an insertion at least five or more years ago and thus had the potential of using at least five or more years. The study interviewed 2,979 women in 14 provinces. Major findings are presented below:

**1. The percent of the NORPLANT® insertion cohorts in the fifth, sixth, seventh, and eighth years who have not had NORPLANT® removed.**

All women interviewed for this study had NORPLANT® inserted 5 or more years before the interview. For the entire sample, 8.2 percent had not yet had NORPLANT® removed at the time of interview. The table below shows the very high continuation rate for each NORPLANT® insertion cohort from 1987 through 1991. The table also illustrates that almost all NORPLANT® acceptors (over 90 percent) continue through the fourth year. Then, between the end of the fourth year and the end of the fifth year there is the beginning of a sharp drop in use from 90 percent to 66 percent. This drop continues and accelerates from 66 percent to 10 percent use at the end of the sixth year.

Life Table Cumulative Probabilities of Continuing with NORPLANT® to the End of the Period

YEARS	PERCENT CONTINUING TO END OF PERIOD					
	NORPLANT® Insertion Cohorts					
	1987	1988	1989	1990	1991	All Cohorts
One	98.1	98.3	97.8	97.5	98.5	97.9
Two	95.0	96.3	95.4	96.0	95.9	95.8
Three	93.6	94.6	92.6	93.6	92.9	93.5
Four	90.3	91.5	90.0	89.8	87.3	90.1
Five	73.1	70.6	64.4	64.5	55.8	66.1
Six	17.5	14.9	13.2	4.6		10.1
Seven	10.0	7.5	2.4			3.3
Eight +	7.8	3.2				1.6
N=	360	590	758	1073	197	2978

**2. The social and demographic characteristics of NORPLANT® users who had a removal compared with those who have not had a removal.**

Compared with women who have already had NORPLANT® removed, those who have not had it removed are more likely to be older in age, divorced or widowed, have had NORPLANT® inserted recently in the 1990 or 1991 period, have more living children, have accepted NORPLANT® for the purpose of stopping the next pregnancy rather than postponing, and to be somewhat less likely to have been informed at time of insertion about the need for a removal after five years of NORPLANT® use.

For the earliest three cohorts in the study -- 1987, 1988, and 1989 -- the percent of NORPLANT® acceptors who fail to have a removal after a period of six to seven years remains fairly constant at about 5 percent. Among the 1987, 1988, and 1989 insertion cohort, the five percent consisted of 89 women. Nineteen of the 89 were age 45 or older and another 3 were under age 45 but either divorced or widowed. If one assumes that these women are at relatively low risk of pregnancy at least on the basis of age and marital status, that leaves 67 or 3.8 percent of the 1987, 1988, and 1989 insertion cohorts at greater risk of pregnancy. These are women who have used NORPLANT® for at least seven years, have not yet had a removal, are married,

under the age of 45, and presumably sexually active. Clearly, these women constitute a high priority target group for a NORPLANT® removal.

**3. The knowledge of NORPLANT® users about the need for a removal after five years of use.**

Approximately 95 percent of all NORPLANT® acceptors say they were informed at the time of insertion that NORPLANT® had to be removed after five years. However, among those who were not informed, 16 percent had not yet had NORPLANT® removed compared with 8 percent among those who had been informed. While this is not a particularly large absolute difference, it does suggest the need for greater information to NORPLANT® clients about the method and particularly about the need for removal after five years of use.

**4. The client's perspective on accessibility of NORPLANT® services and on insertion and removal procedures; and any barriers the client experienced in seeking a removal.**

Almost half (46 percent) of clients who use government Health Centers for removal of NORPLANT® list "easy to reach" as a reason, compared with only 31 percent of private facility clients. Over a quarter of private facility users list "familiarity with staff" as a reason for use compared with 16 percent who use Health Centers. Similarly, 21 percent of private facility users list "good service" as a reason for use compared with only 9 percent of Health Center users. Taken together, these data suggest that easy access to a service facility, familiarity with the staff, and good quality services are important factors in a client's decision to use a facility. Clients who attend either Health Centers or private facilities are equally likely to leave the facility with rods still remaining in the arm (about 4 percent), to experience pain during the removal (about 17 to 19 percent), and to experience serious bleeding (about 3 to 4 percent).

Overall, about 91 percent of the women who asked for a removal received a removal immediately. Among the 9 percent who did not receive immediate removal services, one fifth said that the reason was a lack of provider staff to do the removal while another 19 percent said they were persuaded not to have the removal.

Almost half (48 percent) of those who did not get an immediate removal had to wait less than three days before receiving a removal. On the other hand, 27 percent of the women who did not receive an immediate removal had to wait over a week before receiving a removal. Also, about 45 percent of those who did not get an immediate removal had to ask 2 or more times before they received a removal.

Among women who received a removal immediately upon request, only 26 percent discontinued family planning use altogether, 46 percent switched to another family planning method, and 31 percent accepted a second NORPLANT® implant. Among women who did not

receive an immediate removal, 36 percent discontinued altogether, 50 percent switched to another family planning method, and only 14 percent accepted a second NORPLANT® implant. Helping women to obtain an immediate removal upon request is associated with less discontinuation of family planning use, less switching to another family planning method, and more acceptance of a second NORPLANT® implant.

It is noteworthy that over one-fourth of those who had not yet had a removal cited cost as the major reason. Among other major reasons for not having a removal, 12 percent said they were afraid of the removal procedure and almost 9 percent said they forgot the date.

## **5. Use of Private Facilities for NORPLANT® Services**

Nurse midwives and private practitioners play a significant role in the NORPLANT® program. Overall 66 percent of all removals were done by nurse midwives and 33 percent by doctors. Over a quarter (28 percent) of removals were done in private facilities, and 23 percent were done during Safari camps.

## **6. Backlog of Removal Cases**

The findings on continuation rates from this study suggest that by the end of the sixth year, most women have NORPLANT® removed. However, there is a fairly large discrepancy between the total number of insertions reported in a given year and the total number of removals reported for that cohort five or more years later. Earlier studies have noted that on the basis of current service statistics, there may be a backlog of between 500,000 to 800,000 overdue removal cases<sup>1</sup>. Yet if the continuation rates reported in this study are correct or nearly correct, it is highly likely that the reason there appears to be a large backlog of removal cases is because a very significant number of actual removals are never reported and thus clients continue to be recorded in the service statistics system as NORPLANT® users.

There may be several reasons why removal cases have not been reported. First, until very recently, nurse midwives were not permitted to do removals. Yet this study shows that 66 percent of removals were performed by nurse midwives. It seems highly unlikely that a nurse midwife who performed a NORPLANT® removal would subject herself to possible censure by reporting the removal. Second, the 23 percent of removals done in Safari camps may also be underreported. There is probably less attention to recording removals done under mass Safari camp conditions than single removals done at a health facility. Third, there is also no apparent incentive for private facilities to report the 28 percent of removals these facilities perform. These three reasons alone probably lead to significant underreporting of removal cases and may account for the large discrepancy between the total number of insertions recorded and the total number of removals recorded.

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<sup>1</sup> Fisher, Andrew A., Soledad Diaz, Alejandro Herrin, and Joedo Prihartono, Report on NORPLANT® Implants in Indonesia, The Population Council, May 1995, New York.

## **7. The reproductive intentions of current and past NORPLANT® users and the future demand for NORPLANT® among women who used NORPLANT® in the past.**

Early insertion cohorts are more likely to have a second NORPLANT® insertion and less likely than more recent cohorts to switch to another family planning methods. For example, 32 percent of the 1987 insertion cohort elected to have a second NORPLANT® insertion after removal of the first, but only 21 percent of the 1990 insertion cohort had a second NORPLANT® inserted after the first. Conversely, 45 percent of the 1990 insertion cohort but only 33 percent of the earlier 1987 insertion cohort switched to another method of family planning after removal of NORPLANT®. These data suggest that there is a decline from earlier insertion cohorts to more recent insertion cohorts for second NORPLANT® acceptance, and a consistent increase for switching to another family planning method after NORPLANT® removal. This pattern may indicate that women have more contraceptive options now than they did several years ago and thus can choose methods other than NORPLANT® to meet their contraceptive needs. On the other hand, it may indicate some dissatisfaction with NORPLANT® compared with other methods. Whatever the case, the trend should be monitored in the future in an effort to determine why more recent NORPLANT® insertion cohorts are less likely to accept a second NORPLANT® implant and more likely to switch to another method.

Among all insertion cohorts, roughly one quarter discontinue family planning method use after NORPLANT® removal. This percent is relatively constant and ranges from a high of 30 percent for the 1987 cohort to a low of 23 for the 1989 and 1991 cohorts. The reasons for discontinuation may be many including menopause, desire for additional pregnancy, or dissatisfaction with the use of contraception.

## **8. Cost of NORPLANT® Removal**

Like many countries, Indonesia is trying to create the conditions for a sustainable family planning program that would spread service delivery costs between the client and the government. The unit cost for NORPLANT® is higher than most other contraceptive methods. In addition, there are service delivery costs associated with NORPLANT® that are not associated with other methods.

Overall, 75 percent of the women who had a removal were charged a removal fee. By region, there were major differences. Almost 86 percent of those who had NORPLANT® removed in Java\Bali were charged a fee compared to 61 percent in OI-1 and 47 percent in OI-2.

For many women, this fee for removal must have come as a surprise. Among all women who had a removal, 68 percent said that they had not been informed about a removal fee at the time of the NORPLANT® insertion. There is considerable regional variation. While 61 percent in Java\Bali had not been informed about a removal fee, 81 percent in OI-1 and 82 percent in OI-2 had not been informed.

Among those women who paid a fee for removal, most (about 60 percent) paid less than Rps. 10,000. The majority of women consider the removal fee "average" and overall, only about 15 percent considered the fee "expensive".

These data on cost suggest that women are willing to pay for removal services but they also clearly indicate that there is a need to inform them before the NORPLANT® insertion that such a fee will be charged, and to provide a means to help those who cannot pay the removal fee. If fee for service is to become a part of the system for financing family planning services, women need to know ahead of time what the cost will be for contraceptive services so that they can make an informed choice that fits their own financial circumstances.

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## I. INTRODUCTION

NORPLANT® contraceptive implants were first introduced in Indonesia in 1981 through a series of coordinated acceptability studies. Based on the results from these clinical and field studies, NORPLANT® was introduced into the national family planning program in 1987. Since that year, the number of acceptors has increased dramatically in most provinces, particularly in Java and areas of Sumatra. As of March 1995, BKKBN service statistics indicate that the cumulative number of NORPLANT® acceptors exceeded 2.6 million.

A number of NORPLANT® assessment and evaluation reports have been completed over the past 8 years and considerable information about the method and its acceptance in Indonesia already exists (see list of references at end of this report). For example, the recently completed NORPLANT® study (BKKBN, 1993) reveals that the continuation rate over a four-year period was about 80 percent, but declined to 55 percent in West Sumatra and 33 percent in West Java over a five-year period. The fall-off suggests that many acceptors are returning for removal at or just before the five-year deadline, as they should. On the other hand, the data from this study also reveals that approximately 15 percent of acceptors do not return for a removal even after six years of use.

An earlier study carried out in urban areas by Yayasan Kusuma Buana (YKB) found that more than 20 percent of NORPLANT® acceptors failed to visit a clinic for removal after five-years of use. The most frequent reason given for not obtaining a timely NORPLANT® removal after five years of use was the difficulty of remembering the removal date.

NORPLANT® removal after five-years of use has been emphasized by top BKKBN officials many times. After five years of use, the efficacy of the method declines and the risk of pregnancy including ectopic pregnancy increases. In a consultant report of May 1995, the number of NORPLANT® acceptors who would require a removal in 1995/96 was estimated at approximately between 370,000 and 385,000. Because of the large number of removals required each year in Indonesia, the BKKBN has developed a client tracking plan and has initiated an accelerated program to train providers in removal techniques and increase the availability of removal services for clients.

## **1. Study Problem Statement**

The number of acceptors who need 5-year removal services is steadily increasing because the number of insertions five years earlier steadily increased. However, there are no reliable statistics on the actual number of NORPLANT® clients at five, six, seven or even longer who have not had a removal. In short, the magnitude of the NORPLANT® removal problem (if indeed it is a problem) is not known. Without an understanding of the magnitude of the problem and the geographical distribution of the problem, it is difficult if not impossible to plan adequately for training additional providers, purchasing and distributing equipment and supplies, and directing attention to the areas where there is a significant backlog of cases requiring removal. The NORPLANT® Removal Assessment Study reported here was designed to obtain information from a representative sample of former NORPLANT® users on the extent to which removals had been completed on time.

## **2. Study objectives**

The goal of the assessment study was to provide BKKBN, the Ministry of Health, and various donor agencies with detailed information on the experience of NORPLANT® clients who had an insertion five or more years before the study interview and thus had the potential of using NORPLANT® for at least five years. The study was designed to obtain data on continuation rates, facilities and providers used for insertions and removals, complications or side effects experienced, barriers to removal experienced, and other information. The specific objectives of the study are:

To determine:

1. The percent of NORPLANT® insertion cohorts in the fifth, sixth, seventh, and eighth years who have not had NORPLANT® removed;
2. The social and demographic characteristics of NORPLANT® users who had a removal compared with those who have not had a removal.
3. The knowledge of NORPLANT® users about the need for a removal after five years of use.
4. The client's perspective on accessibility of NORPLANT® services and on insertion and

removal procedures; and any barriers the client experienced in seeking a removal;

5. The use of public and private sector services, the reasons for using one sector over another, and the cost to the client of NORPLANT® removal in the public and private sectors;
6. The reproductive intentions of current and past NORPLANT® users and the future demand for NORPLANT® among women who used NORPLANT® in the past.

While a number of NORPLANT® studies have been conducted in the past and information exists to give at least partial answers to the many questions concerning NORPLANT® use, there is clearly a need for a more detailed picture on the magnitude of the NORPLANT® removal problem at the regional level.

### **3. Significance of the study**

This study is expected to provide guidance to BKKBN and the MOH in developing a routine, on-going removal strategy that is capable of providing quality services to all clients who desire a removal before the five year due date, or require a removal at the five year anniversary date. In particular, the study is expected to provide information on the role of the private sector in removals, and the experience of NORPLANT® clients during the post five year period.

## **II. INDONESIAN NORPLANT PROGRAM**

### **1. Indonesian National Family Planning Philosophy**

The Indonesian National Family Planning Program, under the direction of the National Family Planning Coordinating Board (BKKBN), has achieved international recognition for its accomplishment both in slowing the country's rate of natural increase and in creating an effective, nation-wide family planning structure. The BKKBN of Indonesia is now in its twenty fifth year. There have been many changes during this period which have expanded services throughout the country.

The quality of care offered by family planning programs has received considerable attention in recent years. The concern has been reflected in an increasing number of reports about the quality of services provided BY family planning programs. A number of professional articles have noted that issues of quality of care in reproductive health have been underemphasized relative to issues of achieving family planning client targets. Recently, however, along with the expansion of the program, a number of initiatives are currently underway in Indonesia to address the issue of quality and how it relates to family planning service delivery. The impact of these initiatives is now being monitored.

The BKKBN has declared that the improvement of quality of family planning services is its priority objective for the coming year, with plans to "ensure that a wide range of contraceptive methods is provided to clients through high quality services." BKKBN has developed strategies to improve the management of client support services. Among BKKBN's efforts to improve the quality of the program is the implementation of a number of workshops on total quality management for top and middle managers, using an industrial management model called "Total quality circle" (Gugus Kendali Mutu). Other elements of BKKBN's effort to improve program quality include an increase in the number of providers (particularly midwives), improvement of the training curriculum, and a Steering Committee on Quality set up by ministerial decree in 1994.

The Ministry of Health (DEPKES) is in the process of moving quickly ahead to define its own strategy for quality improvement with the drafting of a National Integrated Total Quality Improvement Strategy. DEPKES' objective is to integrate a comprehensive quality assurance

program into the national health delivery system with the introduction of standards of care for all medical procedures at public hospitals and community health centers nationwide. The BKKBN and DEPKES will need to continue their dialogue on quality improvement efforts, particularly the coordination of program responsibilities.

Outside the government system, many innovative quality of care experiments have been tested by non-governmental organizations (NGOs) and private providers in different economic, geographic, and cultural settings nationwide. Many of these pilot efforts by organizations such as Perkumpulan Keluarga Berencana Indonesia (PKBI) and Yayasan Kusuma Buana (YKB) have implemented interventions to improve quality of care and to demonstrate its impact. Unfortunately many of the lessons learned have not been sufficiently disseminated and therefore have limited impact on the national family planning infrastructure and its policy-makers.

## **2. Role of NORPLANT® in the Indonesian Family Planning Program**

There are at least two distinct stages in the development of the Indonesian family planning program. The first stage occurred before 1992 and the second after 1992. The differences between these two stages are discussed below.

### **a. Contraceptive Services Before 1992**

Indonesia is ideal for studying family planning because the program is well developed and offers a choice of an exceptionally wide range of contraceptive methods. The methods of contraception now available include: combined oral contraception (COC), intrauterine devices (IUD), progestogen only and combined monthly injections, condoms, spermicides, male and female sterilization, and NORPLANT®.

Health centers or clinics (PUSKESMAS) and sub-centers are under the jurisdiction of health departments of regency and sub-district governments. These clinics serve as referral facilities for Village Contraceptive Delivery Centers (VCDC) and Posyandus (Integrated Health Service Posts) in the case of medical complications of contraception. In addition, staff of these facilities offer contraceptive information and services for oral pills, IUDs, condoms and injectables at fixed times -- usually three mornings a week.

As is true in many developing countries, between 1970 and 1980, a new series of tactics was developed to promote the use of contraception. Most of these tactics have since been abandoned. Among them were incentives for providers, targets for IUD insertions, integrated health/family planning teams, special military drives, and so on. Each tactic was designed to

increase the number of family planning acceptors. In order to expand the reach of contraceptive services, staff of PUSKESMAS (public health center) participated in mobile family planning clinics called "**family planning safaris**" which offered services and handled side-effects and medical complications.

During this time, new features were added to family planning service delivery. In addition to the **clinic approach**, the **field-worker approach** was introduced. Then, following the shift away from the IUD towards greater pill use, the program strategy was changed again to the **community based approach**. In the 1980s, another approach was introduced. This was the special family planning drive called "**safari**" which mobilized local efforts for an intense, short period of time to promote family planning use, in particular the IUD and NORPLANT®. The Safari program tended to increase rapidly the number of new acceptors in a geographic area but sometimes at the expense of quality of care and client follow-up.

Indonesia has always been open to the introduction of new contraceptive methods. In addition to NORPLANT®, injectables are now extensively used. Currently Indonesia is using over 75 percent of the world's production of NORPLANT®, and is building a NORPLANT® manufacturing plant. Although significant, the number of contraceptors using this method is still proportionately small -- about 5 percent in 1994 according to the DHS study and now estimated to be about 7 percent of family planning users. Other forms of implants are being developed and produced in the Netherlands and are being tested by the Indonesia family planning program. The contraceptive effect of NORPLANT® implants lasts about 5 years; consequently, it is a contraceptive of great potential for the program, although it is still expensive (around US\$ 17 per dose plus the insertion and removal costs).

#### **b. Contraceptive Services After 1992**

A high priority for the State Ministry for Population is the implementation of Act Number 10/1992 which focusses on population, development, and the family. This Act which was passed only in late 1992 is a breakthrough for the Indonesian family planning program. This law states that a woman's right to pursue her reproductive objectives, choice of method, and rightful access to family planning information and quality services is legally recognized and protected by law. One of the most important features is that the law also includes the right of protection of those involved in family planning services.

The BKKBN has strived for improved quality of services for many years. Over the last five years, quality of services has been one of the five top priorities of the program. Much work

was done to develop quality improvement policies, strategies, and procedures that are consistent with Indonesian culture and standards, not only for clinical services but also for all work done under the family planning program. This includes IEC activities, management, and staffing. Policy-makers believe that improving the quality of care in clinics and other family planning settings has always been important, especially to enhance services, attract and serve more clients, and increase contraceptive prevalence.

In 1992 (December) a BKKBN national workshop on Quality of Care was held with the objectives to review current quality of care activities and approaches that are on-going and to determine what future activities are needed. In addition to general awareness-raising, the workshop focused on Indonesian input for a Regional Quality of Care Seminar held in Bandung, Indonesia in February 1993 sponsored by the Population Council. The Seminar was a high point for the Indonesia Quality of Care movement. At the seminar, government commitment to quality of care was outlined, the family planning target system was suspended by the State Minister of Population and Chairman of BKKBN, and quality of care from the perspective of managers, providers, and clients was discussed.

The National Family Planning Coordinating board has moved into a new phase of its development. This phase is characterized primarily by an effort to mobilize more private sector family planning providers and convince more acceptors to be self-reliant in their use of family planning. The key concept is to move more and more acceptors towards paying for family planning services on their own. The policy of KB Mandiri (which means self-reliance in family planning) seeks to internalize within people the concept of self-reliance in the use of contraceptives and the small family norm. A multi-media "blue circle" campaign is aimed at making family planning acceptors aware that private doctors and midwives offer family planning services and encouraging acceptors who can pay to use the private sector for their family planning needs. Another campaign has been the Gold-circle which seeks to give acceptors a wide range of affordable contraceptives.

For the future, Indonesia's challenge is not only to maintain the momentum, but also to institutionalize family planning practices in a changing society. To achieve these goals, the BKKBN recognizes the need to focus on a long-term strategy to strengthen the delivery of high quality services.



### **III. STUDY DESIGN**

This study used both quantitative and qualitative approaches to the collection of data on the use of NORPLANT®. Through the quantitative approach, 2,979 current and former NORPLANT® users were interviewed. In-depth interviews from approximately 50 field workers and 50 cadres or community volunteers were also conducted. This report only examines the data from the quantitative survey of current and former NORPLANT® users. A subsequent report will focus on the findings from the qualitative study. The following section discusses sample design and selection procedures, the survey instruments, data collection activities, a follow-up study to look at validity and reliability issues, and the limitations of the study.

#### **1. Sample Selection**

For the NORPLANT® Assessment Study, a sample of current and former NORPLANT® users was selected from women who had an insertion between April 1, 1987 and March 31, 1991. A stratified, multi-stage, probability sampling design was adopted to select:

1. Provinces,
2. Districts within provinces,
3. Sub-districts within Districts,
4. Villages within Sub-districts,
5. Current and former NORPLANT® users from the list of users maintained by the volunteers at the Sub-district level.

Various sources of information can be used to draw a sample of NORPLANT® users in Indonesia. Unfortunately, the number of women who had implants inserted between April 1, 1987 and March 31, 1991 varies depending on the source of information used. For this study, the following considerations were taken into account:

- a. Primary attention should be given to including within the sample women residing in Provinces known to have a heavy concentration of NORPLANT® users.
- b. The set of data collection instruments used should be relatively short and simple

to reduce non-sampling error, reduce the cost of data collection and processing, and facilitate the rapid completion of a report.

The first stage of sampling involved the selection of provinces. A list of provinces with the total number of NORPLANT® acceptors who had an insertion between April 1, 1987 and March 31, 1991 was used. Data collection for this study took place in April 1996. The last insertion cut off date of March 31, 1991 was used in order to obtain a sample of women who had the opportunity of using NORPLANT® for at least five years at the time of interview.

After obtaining the list of all provinces with the number of NORPLANT® users, the next step was to eliminate provinces which had a small number of NORPLANT® acceptors. Any province with less than 1 percent of the total NORPLANT® acceptors was eliminated. By using this elimination criteria, a total of 17 provinces remained in the sample frame. The 10 provinces dropped from the sample frame accounted for only 5 percent of all NORPLANT® acceptors during the period from April 1987 through March 1991. The 17 provinces selected have approximately 95 percent of the NORPLANT® acceptors who had an insertion during this same period. Out of the 17 provinces, a total of 14 provinces were selected by a systematic random sample process with probability proportion to the size (PPS) or number of NORPLANT® acceptors who received an implant during the 1987-1991 period.

The next step involved the selection of districts within provinces. In order to obtain adequate sample sizes for making statistical inferences, the provinces were grouped into three regions -- Java-Bali, Outer-Island 1 (OI-1), and Outer-Island II (OI-2). The selection of districts within each region was done by a systematic random selection with PPS. Sampling frames were developed by asking each province to supply the list of districts with the number of NORPLANT® acceptors who had an insertion during the period April 1, 1987 - March 31, 1991. The sampling frame for the selection of districts also excluded districts with less than one percent of the total implant acceptors in the province. The number of districts selected was: 24 districts from Java-Bali, 14 districts from OI-1, and 12 districts in OI-2.

The third stage of sample selection involved the selection of sub-districts. Each selected district was requested to provide a list of sub-districts with the number of NORPLANT® acceptors who had an insertion during the period April 1, 1987 - March 31, 1991. In addition to an exclusion criteria of less than one percent of the total number of implant acceptors in the district, sub-districts with less than 40 acceptors were excluded. The 40 acceptors number was used because the sample plan called for the selection of at least 40 acceptors from each sub-district.

From each selected district, a total of 3 sub-districts were selected by a systematic random

sample with the PPS procedure. Through this process, a total of 150 sub-districts --72 sub-districts from Java-Bali, 42 sub-districts from OI-1, and 36 sub-districts from OI-2 -- were selected.

The fourth stage of the sampling involved the selection of villages within the selected sub-districts. Information needed for the construction of a sampling frame was collected from a number of sources, such as health centers, field workers, and community volunteers who maintain records on each family planning acceptor in their area. Since the volunteers are from the local community, they usually know and have records on who is using which method and when each acceptor started use.

A large percent of the NORPLANT® insertions during April 1, 1987- March 31, 1991 were performed in mass **Safari** camps. Records were kept at the health center where the Safari camp was held. To be certain that the list from which the samples were to be selected was accurate, the health center's records and the field worker's records were reconciled with the records of the volunteers. Data available from these sources were also verified through an independent follow-up study carried out in two provinces, West Java and Lampung. Findings from this follow-up study are discussed in a separate report.

While constructing the sampling frame to select villages, a village with less than 20 total acceptors was combined with an adjacent village so that the total equalled at least 20 acceptors. Again, a random sample with the PPS procedure was used to select two villages from each selected sub-district.

From the list of acceptors maintained by the community volunteers, two sets of samples, each consisting of 10 acceptors who had the implants inserted during the period April 1, 1987 - March 31, 1991 were selected from one or more villages. The first set was used as an original sample, while the second was used whenever a case on the first list could not be interviewed for one reason or another. The last stage of sampling was done by selecting 10 acceptors through a systematic random sample procedure.

Because a sufficient sample size was needed in each of the three major regions in order to make valid inferences, it was necessary to oversample in the OI-2 region that had the smallest proportion of NORPLANT® users relative to the total. As a result, in the study sample there is a higher proportion of NORPLANT® users in the OI-2 region than the proportion this region actually accounts for according to service statistics. Conversely, in the sample there is a lower proportion of NORPLANT® users in the Java-Bali region than the proportion this region actually accounts for according to service

statistics. A sample weighting procedure was applied to adjust for these differences between the proportion in the sample by region and the proportion in national service statistics by region. The weights are applied whenever all three regions are combined to provide a national estimate. Table 1 below provides the weighting factors for each region. The total number in the weighted sample is 2,986. The weighting procedure had very little effect in terms of changing the percents reported for any given variable.

Table 1: Regional Weights Derived From the Percent Distribution of NORPLANT® Acceptors in the Sample and in National Service Statistics by Region

Region	a. Study Sample Percent Distribution	b. National Service Statistics Distribution	Weighting factor (b/a)
Java- Bali	48.3	64.0	1.33
OI-1	28.2	28.2	1.00
OII-2	23.5	7.8	0.33
Total Percent	100.0	100.0	
Number of cases	2979	1,071,426	2,986

## 2. Questionnaires

There were two kinds of data collection instruments used for this study: 1) A structured, five-page questionnaire administered to all the sample NORPLANT® acceptors who had their implants inserted during April 1, 1987 - March 31, 1991; and 2) A standard guideline set of open ended questions administered to fieldworkers and community volunteers. The first instrument was used to generate quantitative data reported below, and the second was used to obtain qualitative information discussed in a separate report.

The acceptor's questionnaire was divided into five sections and identified as 'Form A', 'Form B', 'Form C', 'Form D', and 'Form E'. Form A contains basic questions on socio-demographic characteristics and on the acceptors' experience with NORPLANT®.

Form B was designed to be used only with those respondents who had NORPLANT® removed. This part of the questionnaire collects information on the time when the implants were

removed, reason for removal, any difficulties the acceptor experienced, method used after removal, and other similar questions including the cost of the removal.

Form C was only used for those respondents who had not had a removal at the time of interview. Form C starts by asking the main reason for not removing the implants. This is followed by a series of questions to determine the respondents reproductive intention, knowledge of other, back-up contraception, intention to get the implants removed, and knowledge regarding the payment for the implant removal.

Form D was administered only to women who said they became pregnant while using NORPLANT®. These women were questioned on the outcome of the pregnancy.

Finally, Form E was administered to all the respondents regardless of their current use status. In this questionnaire, the respondent's satisfaction with the implants, contact with fieldworker and cadre, and opinion about other implants which are likely to come out in Indonesia were asked.

The qualitative questionnaire administered to field workers and volunteers attempted to collect the following type of information:

- number of eligible women covered by the fieldworker;
- number of current implant users by year and month of insertion;
- knowledge about NORPLANT® and other methods;
- perceived risk factors after 5 years of NORPLANT® use;
- experience and training received;
- frequency of contact with clients;
- knowledge on availability of providers in the community;
- knowledge about BKKBN link and match system;
- efforts to locate overdue NORPLANT® implant acceptors;
- recommended back-up contraception for the overdue cases;

Both the quantitative and qualitative questionnaires went through several drafts before they were finalized. The drafts were pre-tested and revised thoroughly. The pre-testing of the questionnaires was conducted by the senior members of the study team. The revised questionnaires were introduced during the supervisor's training. During this training, several changes were made as per discussion during the class exercise and field practice. Both questionnaires became final only at the end of the supervisor's training.

The principal investigator and all the six regional investigators actively participated in the

development of the survey instruments. The Population Council provided technical assistance during the development of the questionnaires and subsequently during the data analysis stage.

### **3. Field Staff Training**

A total of six regional investigators, 20 supervisors, and 126 interviewers worked together with the principal investigators to carry out this study. Regional investigators were experienced researchers from the University of Indonesia. All 20 supervisors were recruited from the provincial universities and they were faculty members who had experience working in other research projects. The interviewers were also recruited from provincial universities. They all knew the local dialect of the area where they conducted interviews. The majority of interviewers consisted of the university teachers, recent graduates of public health, medical science, and social science. There was a mixture of male and female interviewers with the exception East Java and NTT where all interviewers were male.

Two levels of training were conducted. The first was for the supervisors and the second was for the interviewers. A 5-day supervisors' training was conducted in Jakarta during March 11-15, 1996. In this training, the following areas were covered: NORPLANT® characteristics, communication, probing technique, sampling, data management, and data quality assurance. The training utilized various techniques such as class room lecture, role play, discussion, and field practice. The training was conducted by the principal investigator and six regional investigators with assistance from the Population Council.

The second level of training was for interviewers and was conducted for 3 days. The interviewers' training was conducted in fourteen different provinces by the respective supervisors with the help of the regional investigator. The principal investigator for the study developed a standard training curriculum and materials to use. The interviewers' training covered introduction to NORPLANT® with specific information on its contraindications, side-effects, counselling, follow-up, and insertion and removal procedures; objectives of the study; interviewing techniques, such as probing, and selection of sample villages and respondents. In addition to these topics, each training session emphasized how to ask questions and mark the questionnaires properly. In order to develop the interviewer's skill and confidence, they were actively involved in role playing (acting as respondent as well as interviewer) and actual field practice. All the interviewers' training sessions were completed before the end of March 1996.

#### **4. Data Collection**

Field work for data collection was started soon after the completion of the interviewers' training. Field work was carried out by 20 teams. Each team was headed by one supervisor. On average, each supervisor had about 6 or 7 interviewers. Each team had one regional investigator to report the field activities and discuss field problems. Six regional investigators divided their areas of responsibility and made supervisory visits to field areas while the data collection was underway. The field work was conducted during May 1996 and completed within 25 days.

Interviewers were responsible to interview NORPLANT® acceptors who had insertions during April 1, 1987 - March 31, 1991. Supervisors were assigned the following tasks while they were in field:

- a. Preparation of a list of implants acceptors;
- b. Selection of sample respondents;
- c. Replacement of sample respondents for non-response;
- d. Assignment of interviewer work schedules;
- e. Editing and coding of completed questionnaires;
- f. In-depth interviews of field workers and volunteers;
- g. Ten percent random spot-checks of the sample;
- h. Ten percent re-interview for selected questions on random basis;
- i. Reporting and sending completed questionnaires to the headquarter;

All completed questionnaires were edited by the supervisors. It was recommended that they edit the questionnaires in front of the interviewer on the same day of the interview. If any errors were made or questions missed, the interviewer was asked to return to the respondent and complete the questionnaire. A ten percent random spot-check of the interviewing process and a ten percent re-interview of respondents was done. Supervisors kept the records of the spot-checks and re-interviews. The quality of the data as determined by the spot checks and re-interviews is discussed in the following section.

#### **5. Data Quality**

This section of the report deals with two aspects of data quality:

1. The response rate and different reasons for non-response;

2. The procedure for selecting a second respondent when the first could not be found.

A sample of 3000 women who had NORPLANT® inserted between April 1, 1987 and March 31, 1991 was selected for interviews. Out of this sample, 491 or 16.4 percent could not be interviewed for various reasons. Interviewers were instructed to make four visits to a respondent's address in an effort to reduce the number of non-response cases.

Of the 491 non-response cases, 60 percent were visited four times, 20 percent three times, 5 percent two times, and 15 percent one time.

Table 2 below shows the major reasons for non-response by region. The two most common reasons in each region for a failure to conduct an interview were respondent not at home (5 percent for the entire sample) and respondent moved from the area (5.8 percent for the entire sample). Interviewers made 4 visits to women who were not at home. The addresses of about 2 percent of the 3000 women in the sample could not be located, 0.3 percent refused an interview, and 0.5 percent had died. About 2.5 percent of the 3000 sample were not interviewed either because they had NORPLANT® inserted outside the cohort period (April 1, 1987 - March 31, 1991), or they were found to be incorrectly classified as a NORPLANT® user. The total (all reasons combined) non-response rate was 14.4 percent for the Java region, 23.5 percent for OI-1, 11.9 percent for OI-2, and 16.4 across all regions.

Table 2: Percent Distribution of reasons for non-response by Region

Reason for non-response	Java	OI-1	OI-2	All Regions
Address not found	1.7	4.8	0.3	2.2
Not at home	4.4	5.2	5.8	5.0
Moved	5.5	8.6	3.3	5.8
Refused Interview	0.1	0.4	0.8	0.3
Died	0.3	0.4	1.0	0.5
Not implant acceptor, or not in study cohort	2.4	4.2	0.7	2.5
Expected sample	1440	840	720	3000
Total Number of non-response cases	208	197	86	491
Non-response rate	14.4	23.5	11.9	16.4

Follow-up studies such as the one reported here often experience fairly high non-response rates, particularly as the time between the event in question (in this case, the NORPLANT® insertion) and the time of the interview increases. While an overall non-response rate of 16 percent is not atypical, it does raise questions about the validity of the data. Some caution needs to be taken in accepting with complete confidence the precise value of any given figure.

Whenever a non-response situation was encountered, a replacement sampling strategy was adopted. At the village level, an initial sample of 10 was selected from the list of all NORPLANT® users in the village. As noted earlier, a second sample of 10 was used to select whenever it was necessary to select a replacement case. Although 3,000 questionnaires were completed, 21 were lost in the mail, resulting in a final total of 2,979 completed questionnaires.

## **IV. NORPLANT® USERS IN INDONESIA**

### **1. Characteristics of Study Respondents**

Table 4 provides basic information on the 2,979 (2,986 weighted total) current and former NORPLANT® users located in 14 provinces who were interviewed as part of this study. For the entire sample, the mean age of the respondents at the time of NORPLANT® acceptance was 28 years. By region, the mean age at time of acceptance in Java/Bali was 27, in OI-1 29 years, and in OI-2 28 years.

Variable 3 in Table 4 indicates that over half of the women in the sample had NORPLANT® inserted during 1989 and 1990. Variable 4 shows the life table cumulative probability of continuing with NORPLANT® to the end of a period year. For the purposes of constructing the life table, the terminal event is the date of NORPLANT® removal. For women still using NORPLANT® at the time of the interview, the case is censored at the time of interview. In each region, continuation is very high. At the end of the fourth year of use, overall, 90 percent of acceptors are still using NORPLANT® and the differences between regions are very small. By the end of the fifth year approximately two thirds of the acceptors continue to use NORPLANT® and then by the end of the sixth year most obtain a removal. By the end of the sixth year continuing users drop to about 10 percent.

Variable 5 indicates that the average number of living children at the time of acceptance was 3.0 for the entire sample and 2.7 in Java, 3.5 in OI-1 and 3.4 in OI-2. At the time of interview, which occurred five or more years after the NORPLANT® insertion, 98 percent of the entire sample were still married while about 2 percent were divorced or widowed (Variable 7). Overall, about 11 percent of the acceptors were urban residents, although this varied somewhat by region with almost 15 percent urban in OI-1 but only 4 percent in OI-2 (Variable 8).

Slightly over half of the acceptors in each region had no education or incomplete primary education (Variable 10). The husband of the NORPLANT® acceptors was somewhat better educated. Only one third had no education or an incomplete primary education (Variable 11). Overall, about half of the husbands work in agriculture or fishing (Variable 12). Almost 70 percent of the NORPLANT® acceptors work at home and this percent varies only slightly by

region (variable 13). About 44 percent of acceptors said that when they had NORPLANT® inserted they wanted to postpone their next pregnancy, while about 56 percent said that at the time of insertion they did not want additional children (Variables 14 and 15). The percent who want to postpone or stop future pregnancies does not vary between regions. Finally, about three fourths of the respondents in each region have ever used some method of family planning other than NORPLANT® (Variable 16).

This brief profile indicates that at the time NORPLANT® was inserted, the acceptors in the study were relatively young in their late 20s, and on average had between 2 to 3 children. NORPLANT® continuation rates for all regions are very high and only begin to drop significantly between the fifth and sixth years of use. About 90 percent live in rural areas, slightly over half have very little or no education, and about three fourths spend most of their time working at home. Also, slightly over half do not want any additional children and about three fourths have ever used some method of family planning other than NORPLANT®.

Table 4: Selected Characteristics of the Sample by Region

Variable	Region			
	Java/ Bali	OI-1	OI-2	Weighted Total
1. Number in sample	1440	840	699	2986
2. Mean age at insertion	27.4	29.4	27.9	28.0
3. Year of NORPLANT® insertion:				
1987	12.4	15.0	8.0	12.8
1988	23.2	13.7	20.3	20.3
1989	25.4	25.4	25.6	25.4
1990	32.4	41.4	36.9	35.3
1991	6.6	4.5	9.2	6.2

Variable	Region			
	Java/ Bali	OI-1	OI-2	Weighted Total
4. Life Table Cumulative Probabilities of Continuing with NORPLANT® at end of:				
One year	98.8	96.8	97.3	97.9
Two years	96.9	93.8	95.7	95.8
Three years	94.2	92.0	93.8	93.5
Four years	90.7	88.0	91.4	90.1
Five years	65.6	63.2	70.6	66.1
Six years	10.1	7.9	12.8	10.1
5. Mean Number of living children	2.7	3.5	3.4	3.0
6. Married at time of interview	98.4	98.5	97.6	98.4
7. Divorced or Widowed at time of interview	1.6	1.5	2.4	1.6
8. Urban Acceptors	9.4	14.5	4.4	10.5
9. Rural Acceptors	90.6	85.5	95.6	89.5
10. No education or incomplete primary	55.5	53.6	51.1	54.6
11. Husband's education --none or incomplete primary	37.9	32.9	35.5	36.3
12. Major occupation of husband -- percent in agriculture or fishing	45.1	52.1	65.8	48.7
13. Work at home	71.5	62.0	65.5	68.4
14. Wanted to postpone next pregnancy at time of insertion	44.4	44.4	44.5	44.4
15. Wanted to stop next pregnancy at time of insertion	55.6	55.6	55.5	55.6
16. Ever Used Other FP methods	72.8	78.6	73.7	74.5

## 2. NORPLANT® Use

In the following analysis, the sample of NORPLANT® acceptors is examined in terms of

a number of independent variables. The dependent variable for this analysis is "Current Status" which consists of four mutually exclusive categories:

- 1) CONTINUING                      These are continuing NORPLANT® users who have not had a removal.
- 2) NONUSER                         These are former NORPLANT® users who have had a removal but are currently not using another method.
- 3) OTHER FP                        These are former NORPLANT® users who have had a removal and are currently using a family planning method other than NORPLANT®.
- 4) 2nd NORPLANT                These are former NORPLANT® users who have had the first implants removed and are currently using a second NORPLANT® set.

All the women in this sample of NORPLANT® users had an insertion between 1987 to 1991, or at least five or more years before the study interview. Variable 1 in Table 5 shows that approximately 8 percent of the total sample have not yet had a removal. Another 25 percent have had a removal and are currently not using another family planning method, 41 percent have had a removal and switched to another method, and 27 percent have had a removal and then had a second set of NORPLANT® rods inserted.

Table 5: Selected Variables on NORPLANT® Use by Current Family Planning Status

Variable	PERCENT: CURRENT FAMILY PLANNING USE STATUS OF NORPLANT USERS				
	Continuing User	Non-User	Other FP User	Second NORPLANT User	Weighted N=
1. Current FP Status	8.2	24.5	40.5	26.8	2985
2. Region*					
Java/Bali	9.9	23.7	35.8	30.6	1439*
OI-1	4.6	25.4	48.7	21.3	840*
OI-22	7.7	28.3	49.1	14.9	699*

Variable	PERCENT: CURRENT FAMILY PLANNING USE STATUS OF NORPLANT USERS				
	Continuing User	Non- User	Other FP User	Second NORP LANT User	Weighted N=
1. Current FP Status	8.2	24.5	40.5	26.8	2985
3. Insertion Place					
Safari Camp	7.8	24.6	42.0	25.6	2419
Other	10.1	24.2	33.9	31.8	565
4. Year of Insertion					
1987	5.5	29.5	33.3	31.8	381
1988	5.4	23.6	39.4	31.5	605
1989	4.7	23.4	41.2	30.7	759
1990	9.2	24.3	45.1	21.4	1054
1991	31.7	22.8	29.6	15.9	185
5. Motivation to Use at time of insertion					
Postpone	4.3	34.4	40.1	21.2	1324
Stop	11.3	16.7	40.7	31.2	1660
6. Informed of Need for Removal After 5 Years					
Yes	7.8	24.5	40.9	26.9	2831
No	15.6	24.0	32.9	27.5	134
7. Ever Use Other FP Methods					
Yes	6.8	19.3	49.7	24.1	2217
No	12.4	39.6	13.4	34.5	759

\* = Unweighted N

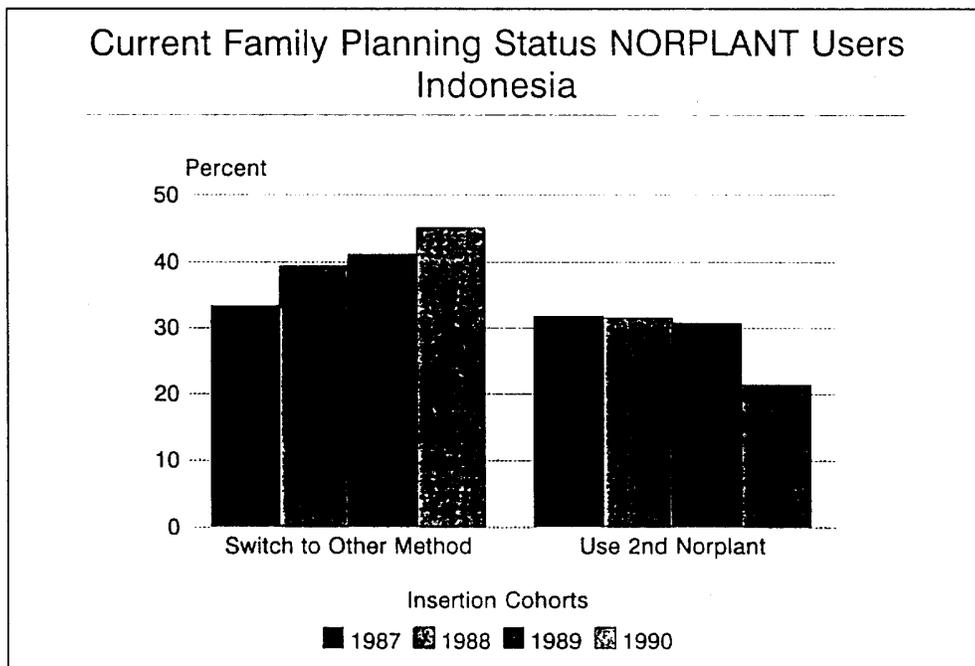
By region (variable 2), among NORPLANT® users in Java, approximately 10 percent have not yet had a removal compared with about 5 and 8 percent respectively among users in OI-1 and OI-2 regions. These figures of course include women in the 1991 insertion cohort, many of whom have just entered their sixth year of use and if their experience is like earlier cohorts, will soon seek a removal. Java acceptors were also more likely to accept a second set of NORPLANT® after the

first were removed, while the women in the other two regions were more likely to use some other method of contraception after the removal of NORPLANT®.

Among the entire sample, 81 percent of the women received NORPLANT® insertions at a Safari camp. Variable 3 indicates that 42 percent of the women who received NORPLANT® at a Safari camp switched to another method after NORPLANT® was removed compared with 34 percent among women who received a NORPLANT® insertion elsewhere, usually at a fixed facility such as a health center or hospital. Also, only 26 percent of those women who received NORPLANT® at a Safari camp compared with 32 percent who received NORPLANT® elsewhere accepted a second set of implants after the first set was removed. The difference between those who received NORPLANT® at a Safari camp and those who received the implants elsewhere by their current family planning status is statistically significant by a Pearson Chi Square test ( $p < .001$  with 3 df).

Variable 4 in Table 2 shows the year of insertion by current family planning status. Almost one third of the 1991 insertion cohort (32 percent) are still using NORPLANT® and have not had a removal. This is not unexpected. Many of these women have just entered the sixth year of use and if their experience is similar to earlier insertion cohorts, most will probably have a removal by the end of the sixth year. The other cohorts, however, represent women who have had the potential to use NORPLANT® for six or more years.

Several features of variable 4 are noteworthy. Ignoring for the moment acceptors from the most recent 1991 insertion cohort, many of whom have just completed their fifth year and will probably have a removal during the sixth year, it appears that earlier insertion cohorts are more likely to have a second NORPLANT® insertion and less likely than more recent cohorts to switch to another family planning methods. For example, 32 percent of the 1987 insertion cohort elected to have a second NORPLANT® insertion after removal of the first, but only 21 percent of the 1990 insertion cohort had a second NORPLANT® inserted after the first. Conversely, 45 percent of the 1990 insertion cohort but only 33 percent of the earlier 1987 insertion cohort switched to another method of family planning after removal of NORPLANT®. These trends are shown graphically in Figure 1 below.



**Figure 1**

While four successive cohorts do not necessarily constitute a trend, as Figure 1 shows, there is the indication of a decline from earlier insertion cohorts to more recent insertion cohorts for second NORPLANT® acceptance, and a consistent increase for switching to another family planning method after NORPLANT® removal. This pattern may indicate that women have more contraceptive options now than they did several years ago and thus can choose methods other than NORPLANT® to meet their contraceptive needs. On the other hand, it may indicate some dissatisfaction with NORPLANT® compared with other methods. Whatever the case, the trend should be monitored in the future in an effort to determine why more recent NORPLANT® insertion cohorts are less likely to accept a second NORPLANT® implant and more likely to switch to another method.

Two other features of variable 4 in Table 5 are also noteworthy. First, for all insertion cohorts, roughly one quarter discontinue family planning method use after NORPLANT® removal. This percent is relatively constant and ranges from a high of 30 percent for the 1987 cohort to a low of 23 for the 1989 and 1991 cohorts. The reasons for discontinuation may be many including menopause, desire for additional pregnancy, or dissatisfaction with the use of contraception.

Second, for the earliest three cohorts 1987, 1988, and 1989, the percent of

NORPLANT® acceptors who fail to have a removal after a period of seven or more years remains fairly constant at about 5 percent. Among the 1987, 1988, and 1989 insertion cohort, the five percent consisted of 89 women. Nineteen of the 89 were age 45 or older and another 3 were under age 45 but either divorced or widowed. If one assumes that these women are at relatively low risk of pregnancy at least on the basis of age and marital status, that leaves 67 or 3.8 percent of the 1987, 1988, and 1989 insertion cohorts at greater risk of pregnancy. These are women who have used NORPLANT® for at least seven years, have not yet had a removal, are married, under the age of 45, and presumably sexually active. Clearly, these women constitute a high priority target group for a NORPLANT® removal.

At the time of insertion, among the entire sample, 44 percent of NORPLANT® users said they wanted to postpone their next pregnancy while 56 percent wanted to stop having additional pregnancies. Variable 5, in Table 5, motivation to use NORPLANT®, indicates that among women who wanted to stop having additional pregnancies, only 17 percent discontinued family planning method use after NORPLANT® removal compared with 34 percent who discontinued method use among those who wanted to postpone the next pregnancy. Also, while 31 percent of stoppers accept a second NORPLANT® implant after a removal, only 21 percent of women who want to postpone pregnancy accept a second NORPLANT® implant. These findings are not unexpected since they correspond with the initial fertility intentions of NORPLANT® users. The initial motivation for using NORPLANT® is associated with subsequent family planning method use, whether a second NORPLANT® implant or another method.

Approximately 95 percent of all NORPLANT® acceptors say they were informed at the time of insertion that NORPLANT® had to be removed after five years. However, among those who were not informed, 16 percent had not yet had NORPLANT® removed compared with 8 percent among those who had been informed. While this is not a particularly large absolute difference, it does suggest the need for greater information to NORPLANT® clients about the method and particularly about the need for removal after five years of use.

Three fourths of the entire sample said that they had ever used a method of family planning other than NORPLANT®. Variable 7 in Table 5 indicates that among those who have ever used another family planning method, after removal of the first NORPLANT® implant, only 24 percent accepted a second NORPLANT® implant while 50 percent accepted another method of family planning. A reverse trend can be seen among those who have never used another method of family planning -- 35 percent accept a second NORPLANT® implant after removal of the first, and only 24 percent accept other family planning methods. The difference between the two groups is

statistically significant using a Pearson Chi Square test at  $p < .01$  with 3 df. While the reasons for this difference are not apparent from the survey data, one can speculate that former users of other family planning methods are more aware of the choices available to them and in comparing these choices against a second NORPLANT® insertion, they tend to accept another method rather than a second NORPLANT® implant.

### **3. NORPLANT® Not Yet Removed**

Women were only included in the sample frame for this study if they had a NORPLANT® insertion at least five or more years prior to the date of the interview. At the time of the study interview, 92 percent of the respondents already had NORPLANT® removed while 8 percent were continuing users. Among the 8 percent, the following were the main reasons they gave for not yet having NORPLANT® removed:

- 8.9 percent -- forgot the date,
- 12.0 percent -- afraid of the removal process,
- 26.1 percent -- removal cost too expensive,
- 4.6 percent -- didn't know it should be removed,
- 0.1 percent -- feared another insertion would be needed,
- 0.5 percent -- removal facility difficult to reach,
- 2.3 percent -- didn't know a removal facility
- 45.3 percent -- other reasons.

It is noteworthy that over one-fourth of those who had not yet had a removal cited cost as the major reason. Among other major reasons for not having a removal, 12 percent said they were afraid of the removal procedure and almost 9 percent said they forgot the date.

Table 6 below compares women who have not yet had NORPLANT® removed against those who have had it removed (the last column of the table). For those who have not yet had a removal, the data is also presented by region. The totals for both those who have not had a removal and for those who have had a removal are based on weighted numbers. The region specific data of course is not weighted. Comparing the last two columns of Table 6, a profile of those who have not had a removal emerges. Compared with women who have already had NORPLANT® removed, those who have not had it removed are more likely:

- To be older in age (Variable 2);
- To be divorced or widowed (Variable 3);
- To have had NORPLANT® inserted recently in the 1990 or 1991 period

(Variable 4);

- To have more living children (variable 5);
- To have accepted NORPLANT® for the purpose of stopping the next pregnancy rather than merely postponing (Variable 6);
- To be somewhat less likely to have been informed at time of insertion about the need for a removal after five years of NORPLANT® use (Variable 7).

Table 6: Percentage Distribution of the respondents who had not yet had NORPLANT® removed by Region compared against those who have had NORPLANT® removed by selected characteristics

Variable	NORPLANT NOT REMOVED				NORPLANT REMOVED
	Java/Bali	OI-1	OI-2	Weighted Total	Weighted total
1. Number sample	142	39	54	246	2,739
2. Age group:					
< 30 years	18.3	7.7	9.3	15.9	19.5
30 - 34 years	26.8	12.8	37.0	24.8	28.8
35 - 39 years	25.4	23.1	31.5	25.2	27.9
40 plus	29.6	56.4	22.2	34.1	23.8
3. At Interview:					
Married	96.5	97.4	92.6	96.3	98.5
Divorced/Widowed	3.5	2.6	7.4	3.7	1.5
4. Insertion Year:					
1987	7.7	15.4	1.9	8.5	13.2
1988	14.8	7.7	11.1	13.4	20.9
1989	10.6	28.2	25.9	14.5	26.4
1990	42.3	25.6	42.6	39.6	34.9
1991	24.6	23.1	18.5	24.0	4.9
5. Living children:					
1	14.8	0	2.7	11.8	14.8
2	33.8	10.3	27.5	29.3	31.5
3	24.6	30.8	25.2	25.5	22.8
4 +	26.7	59.0	44.8	33.4	30.9

6. Motivation to use at time of insertion:					
Postpone	24.6	15.4	25.9	23.3	46.3
Stop	75.4	84.6	74.1	76.7	53.7
7. Informed about need for removal after 5 years:					
Yes	88.0	92.3	96.3	89.3	95.4
No	12.0	7.7	3.7	10.7	4.1

Respondents who had not yet had a removal were also asked a series of other questions regarding their fertility intentions in the future and their desire for a removal. Table 7 presents the data from these questions by region.

Variable 1 indicates that over three fourths of women who had not had a removal do not want another child. There is only slight variation by region with those in OI-2 being more likely to not want another child. When asked if they wanted to have NORPLANT® removed, over 90 percent in each region said yes (Variable 2), and over half said they would prefer to have a midwife do the removal instead of a doctor (Variable 3).

Overall, about a fourth of the women said they were not willing to pay for a removal, 14 percent said they would partially pay while 61 percent said they would be willing to pay in full (Variable 4). By region, there is significant variation in terms of willingness to pay for the removal. While almost three fourths (73 percent) of those in the Java/Bali region said they would be willing to pay in full, this was true for only a third in OI-2 and about a fifth in OI-1.

By region, between 40 to 50 percent of the women who had not yet had a removal said that they were aware a back-up method should be used if NORPLANT® is not removed after five years (Variable 5). The primary source of knowledge about backup methods comes from the PLKB/Cadre and the nurse midwives. However, despite the fact that overall, 43 percent said they knew about the need for back-up contraception, only 16 percent were using a back-up method and fully 84 percent were not using any back-up method. The pill is the method most likely to be used for back-up.

Taken together, the data in Table 7 suggest that despite a desire to have NORPLANT® removed, the cost of removal is perceived as a barrier for about a quarter of the women who have not yet had a removal. Also, it is clear that more women need to be informed about the need for using a back-up method after five years of NORPLANT® use.

Table 7: Percent of the respondents who had not yet had the implants removed by future reproductive intentions and other variables by Region

Variable	Java/Bali	OI-1	OI-2	Weighted Total
1. Desire for another child:				
Yes	15.5	17.9	13.0	15.7
No	77.5	76.9	83.3	77.8
Not sure	7.0	5.1	3.7	6.5
2. Want to remove the implants immediately:				
Yes	92.1	92.3	96.3	92.5
No	7.9	7.7	3.7	7.5
3. Preferred provider for the removal:				
Doctor	32.6	44.7	40.7	35.2
Midwife	67.4	55.3	59.3	64.8
4. Willing to pay for the removal:				
Yes, full	72.6	20.5	33.3	61.0
Yes, partial	8.1	35.9	27.8	14.2
No	19.3	43.6	38.9	24.8
5. Know about backup method:				
Yes	41.5	51.3	40.7	43.0
No	58.5	48.7	59.3	57.0
6. Source of knowledge on backup method:				
PLKB/cadre	48.3	55.0	40.9	49.1
Midwife	31.7	25.0	27.4	30.1
Doctor	3.3	5.0	9.1	4.0
Other	16.7	15.0	22.7	16.8

Variable	Java/Bali	OI-1	OI-2	Weighted Total
7. Backup method in use at time of interview:				
Injectable	2.8	0	7.4	2.7
Pill	8.5	7.7	11.1	8.5
IUD	0.7	0	0	0.5
other	4.2	5.1	1.1	4.2
None	83.8	87.2	79.6	84.0

#### 4. NORPLANT® Removed

Table 8 displays findings related to the 92 percent of respondents who already had a removal at the time they were interviewed. Three quarters of the women said they had a removal because it was time for a removal (Variable 1). The differences by region are small. Problems with menses or other health problems account for about 8 percent of the reasons for removal, while desire for pregnancy or pregnant while using NORPLANT® (see section below) account for about 7 percent of the reasons for a removal.

Table 8: Respondents Experience with NORPLANT® Removal by Region

Variable	Region			
	Java/Bali	OI-1	OI-2	Weighted Total N=2740
1. Main Reason NORPLANT® Removed:				
It's time for removal	75.7	79.2	75.5	76.7
Desire pregnancy	6.4	5.0	5.7	5.9
Pregnant	0.7	1.4	1.9	1.0
Age/Menopause	0.3	0.2	0.5	0.3
Menses problems	4.5	3.1	4.2	4.1
Other health reasons	3.2	5.6	5.4	4.1
Advice Husband/other	1.3	0.5	0.6	1.0
Other	7.8	5.0	6.2	6.8

Variable	Region			
	Java/Bali	OI-1	OI-2	Weighted Total N=2740
2. How Did Respondent Know It Was Time for Removal (multiple responses possible):				
Remember myself	48.2	56.6	63.4	51.9
Reminded by family	2.1	1.3	6.4	2.2
Reminded by other user	9.2	14.6	12.8	11.1
Reminded by Kader	51.7	44.8	38.6	48.6
3. Get Removal Service Immediately:				
Yes	90.4	91.3	89.0	90.6
No	9.6	8.8	11.0	9.4
4. IF NO TO #3, Main Reason Removal Service not Provided Immediately:				
No provider staff	16.9	25.7	27.1	20.2
Persuaded not to remove	18.5	21.4	14.3	18.9
Have to pay removal fee	2.4	4.3	1.4	2.8
Other reasons	61.3	48.6	57.1	57.5
5. IF NO TO #3, Days had to Wait Before Removal:				
1 Day	19.5	16.7	17.4	18.1
2-3 Days	30.8	25.8	30.4	29.4
4-7 Days	27.4	18.2	24.6	24.6
8+ Days	22.2	39.4	27.5	27.3
6. IF NO TO #3, Number of Times Had to Ask for Removal:				
One	60.1	50.7	31.4	54.2
Two	24.6	23.9	45.7	26.4
Three +	15.3	25.4	22.9	18.7
7. Removal Time (minutes):				
under 5	20.6	14.2	9.8	17.9
5-10	32.1	20.6	14.0	27.3
11-15	30.0	28.1	24.2	29.0
16-30	13.7	26.7	34.1	19.1
30+	3.5	10.4	17.9	6.7

Variable	Region			
	Java/Bali	OI-1	OI-2	Weighted Total N=2740
8. Who Did Removal:				
Doctor	36.6	27.1	32.5	33.5
Nurse Midwife	63.4	70.9	67.5	65.9
Other	--	2.0	--	0.6
9. Removal at Safari Camp:	21.1	27.5	26.3	23.4
10. Removal Facility:				
Health Center	62.9	51.6	71.4	60.2
Private facility	29.1	29.7	13.7	28.1
Other	8.1	18.7	14.9	11.7

Respondents were also asked how they knew it was time for a removal (Variable 2). Multiple responses to this question were possible, two of which are noteworthy. First, slightly over half of all respondents said that they remembered themselves that it was time for a removal. Second, the village level Kader also were listed by respondents as an important source that reminded them it was time for removal. In contrast, friends or other users were relatively unimportant as a source of reminding clients. This data suggests that helping NORPLANT® clients develop mechanisms to remind themselves of the removal date and emphasizing to Kader the need to remind clients of the removal date may be effective ways to assure that clients do not delay a removal after five years of use.

Overall, about 91 percent of the women who asked for a removal received a removal immediately (Variable 3). By region, there is virtually no difference. Among the 9 percent who did not receive immediate removal services, variable 4 of Table 8 indicates that overall, one fifth said that the reason was a lack of provider staff to do the removal while another 19 percent said they were persuaded not to have the removal. By region, women in OI-1 and OI-2 were more likely to cite lack of a provider as a reason (26 and 27 respectively) than women in Java (17 percent). The cost of the removal was not a major factor and was mentioned by only about 3 percent of those who did not get an immediate removal.

Variable 5 of Table 8 indicates that almost half (48 percent) of those who did not get an immediate removal had to wait less than three days. On the other hand, overall 27 percent of these women had to wait over a week before receiving a removal, and fully 39 percent of the women in OI-1 who did not receive an immediate removal had to wait over a week. Variable 6 shows that about 45 percent of those who did not get an immediate removal had to ask 2 or more

times for the removal.

Variable 7 in Table 8 represents clients own perception of the length of time it took for the removal. Overall, about 74 percent of those who had a removal said that the removal took less than 15 minutes. By region, however, there are some major differences. In Java\Bali, 83 percent of the clients reported a removal in under 15 minutes compared with 63 percent of the clients in OI-1 and 48 percent in OI-2. These differences may relate to the greater availability of skilled providers in Java\Bali who have more extensive experience with removals. It may also relate to fewer difficult removal cases in Java\Bali than in the Outer Islands.

Variables 8, 9, and 10 of Table 8 show that overall 66 percent of all removals were done by nurse midwives, 23 percent were done during Safari camps, and 28 percent were done in a private facility. Taken together, these findings may be part of the reason that there tends to be a fairly large discrepancy between the total number of insertions reported in a given year and the total number of removals reported for that cohort five years later. Earlier studies have noted that on the basis of current service statistics, there may be a backlog of between 500,000 to 800,000 overdue removal cases<sup>2</sup>. Yet if the percents noted in variables 7-8 of Table 8 are correct or nearly correct, it is highly likely that a very significant number of actual removals are never reported and thus clients continue to be recorded in the service statistics system as NORPLANT® users.

There may be several reasons why removal cases have not been reported. First, until very recently, nurse midwives were not permitted to do removals. Yet this study shows that 66 percent of removals were performed by nurse midwives. It seems highly unlikely that a nurse midwife who performed a NORPLANT® removal would subject herself to possible censure by reporting the removal. In short, in the past there has probably been a very strong incentive for nurse midwives not to report any NORPLANT® removals. Second, the 23 percent of removals done in Safari camps may also be underreported. There is probably less attention to recording removals done under mass Safari camp conditions than single removals done at a health facility. Third, there is also no apparent incentive for private facilities to report the 28 percent of removals these facilities perform. Indeed, past attempts to get private facilities to report removals have not been successful.

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<sup>2</sup> Fisher, Andrew A., Soledad Diaz, Alejandro Herrin, and Joedo Prihartono, Report on NORPLANT® Implants in Indonesia, The Population Council, May 1995, New York.

These three reasons alone probably lead to significant underreporting of removal cases and may account for the large discrepancy between the total number of insertions recorded and the total number of removals recorded. While various findings from this study indicate there is a need for more client information and attention to greater availability of removal services as well as other aspects related to client use and removal of

NORPLANT®, overall by the end of the sixth year of use 90 percent of all clients have received a removal and by the end of the seventh year the figure increases to over 95 percent. In short, while some women may find difficulties in obtaining removal services and most women use NORPLANT® beyond the recommended five year period, at least by the end of the sixth year of use, this study did not find a large percent of women who had not had NORPLANT® removed. The data from the study strongly suggest that private practitioners and nurse midwives play a major role in removing NORPLANT®.

While the large percent of all NORPLANT® clients who ultimately manage to have the rods removed by the end of the sixth year is a positive finding, it should also be noted that a number of clients experience some difficulty in obtaining an immediate removal and this difficulty seems to affect their future family planning status. Clients who are unable to obtain removal services when they request these services can easily become discouraged and fail to take necessary action after the five year use period. In this study, 91 percent of all respondents were able to obtain removal services immediately upon request, and there are virtually no differences by region (Variable 3 of Table 8). However, when the variable "immediate removal" is examined in relation to current family planning status there are statistically significant differences as can be seen below in Table 9.

Among women who received a removal immediately upon request, only 26 percent discontinued family planning use altogether, 46 percent switched to another family planning method, and 31 percent accepted a second NORPLANT® implant. Among women who did not receive an immediate removal, 36 percent discontinued altogether, 50 percent switched to another family planning method, and only 14 percent accepted a second NORPLANT® implant. Helping women to obtain an immediate removal upon request is associated with less discontinuation of family planning use, less switching to another family planning method, and more acceptance of a second NORPLANT® implant.

Table 9: NORPLANT® Removal on Request by Current Family Planning Status

NORPLANT® Removed Immediately on Request	FP Status After Removal			
	Discontinued FP use	Switched to Other FP Method	Accepted 2nd NORPLANT	Total
Yes (n = 2478)	25.7	43.5	30.8	100
No (n = 258)	35.9	49.7	14.4	100
Total (n = 2737)	26.7	46.2	29.2	100

Chi Square  $p < .0001$  2 df.

While overall an immediate removal rate of NORPLANT® among 91 percent of the entire sample is extremely good, the data discussed above indicate that there is room for improvement among the 9 percent who did not get an immediate removal. By region, for example, the lack of a provider to do a removal is far more likely to occur in OI-1 and OI-2 than in Java/Bali. Similarly, clients are more likely to have to wait a week or more in the Outer Islands than in Java before they receive a removal. It seems likely that at least for some women, the frustrations and difficulties in receiving immediate removal services may be a factor in their discontinuing with family planning services and/or switching to other methods of family planning.

## 5. Use of Private Facilities for NORPLANT® Services

As noted above, private practitioners play a significant role in the NORPLANT® program. Table 10 examines in greater detail the use of private facilities for NORPLANT® services compared with government Health Center facilities. Respondents in the study were asked to list the various reasons they had for using one type of facility over another. Multiple responses were possible.

Variable 1 in Table 10 indicates that almost half (46 percent) of clients who use Health Centers list "easy to reach" as a reason, compared with only 31 percent of private facility clients. The inexpensive cost of service did not seem to make a difference in the use of a facility. Inexpensive cost was noted by 18 percent of those who use a Health Center and 17 percent by those who use a private facility.

Two factors that appear to be important for clients who use private facilities are "familiarity with staff" and "good service". Over a quarter of private facility users list "familiarity with staff" as a reason for use compared with 16 percent who use Health Centers.

Similarly, 21 percent of private facility users list "good service" as a reason for use compared with only 9 percent of Health Center users. Taken together, these data suggest that easy access to a service facility, familiarity with the staff, and good quality services are important factors a client's decision to use a facility. Inexpensive services appear to be somewhat less important.

Variable 2 in Table 10 reveals that there are virtually no differences between Health Center clients and private facility clients with regard to the three removal problems listed. Clients who attend either facility are equally likely to leave the facility with rods still remaining in the arm (about 4 percent), to experience pain during the removal (about 17 to 19 percent), and to experience serious bleeding (about 3 to 4 percent).

Table 10: Place of Removal by Reasons for Using Facility and Problems with Removal.

1. REASON THIS FACILITY USED (Multiple responses possible)	PLACE OF REMOVAL	
	Health center (Weighted N=1639)	Private Facility (Weighted N=1083)
Easy to reach	45.5	30.8
Inexpensive/Cheap	18.1	16.7
Familiar with staff	15.8	26.0
Good service	9.2	21.0
2. PROBLEMS WITH NORPLANT REMOVAL (Multiple responses possible)	PLACE OF REMOVAL	
	Health center	Private Facility
Rods remaining	3.5	3.5
Very painful	17.1	18.8
Serious bleeding	3.4	3.7

## 6. Cost of NORPLANT® Removal

Like many countries, Indonesia is trying to create the conditions for a sustainable family planning program that would spread service delivery costs between the client and the government. The unit cost for NORPLANT® is higher than most other contraceptive methods. In addition, there are service delivery costs associated with NORPLANT® that are not associated with other methods.

In this study, respondents were asked a number of questions regarding the cost of NORPLANT® services. The responses to these questions are presented in Table 11.

Variable 1 in Table 11 shows that overall, 75 percent of the women who had a removal were charged a removal fee. By region, there were major differences. Almost 86 percent of those who had NORPLANT® removed in Java\Bali were charged a fee compared to 61 percent in OI-1 and 47 percent in OI-2. In short, there is considerable variation by region in whether NORPLANT® clients are charged a fee for removal.

For many women, this fee for removal must have come as a surprise. Variable 2 in Table 5 indicates that among all women who had a removal, 68 percent said that they had not been informed about a removal fee at the time of the NORPLANT® insertion. Again, there is considerable regional variation. While 61 percent in Java\Bali had not been informed about a removal fee, 81 percent in OI-1 and 82 percent in OI-2 had not been informed.

Among those women who paid a fee for removal, most (about 60 percent) paid less than Rps. 10,000. For reasons that are not apparent from the data, a higher percent of women in the OI-2 region paid more than Rps. 15,000 for a removal than women in Java\Bali or OI-1. However, as can be seen in Variable 4, the majority of women in all three regions seemed to consider the removal fee "average" and overall, only about 15 percent considered the fee "expensive".

Among those women who paid for a removal, there is a considerable difference in the fee charged depending on whether the removal was done at a Government Health Center or a private facility. For example, 71 percent of those who had the removal at a Health Center paid Rps 10,000 or less compared with only 42 percent of those who had the removal done at a private facility. Conversely, while only 8 percent of those who had a removal at a Health Center paid Rps. 15,000 or more, fully 28 percent of those who had the removal at a private facility paid Rps 15,000 or more.

These data on cost suggest that women are willing to pay for removal services and they are willing to pay more at a private facility than at a Government facility, but the data also clearly indicate that there is a need to inform women before the NORPLANT® insertion that a removal fee will be charged. Among all women who had a removal, slightly over a quarter were informed about a removal fee at the time of insertion. If fee for service is to become a part of the system for financing family planning services, women need to know ahead of time what the cost will be for contraceptive services so that they can make an informed choice that

fits their own financial circumstances.

Table 11: Cost of NORPLANT® Removal Services by Region

Variable	Region			
	Java/ Bali	OI-1	OI-2	Tot.
1. Was A Removal Fee Charged:				
Yes	85.6	60.6	46.9	75.4
No	14.2	39.4	52.7	24.5
Don't remember	0.2	--	0.3	0.1
2. At the Time of Insertion, informed About Removal Fee:				
Yes	37.3	17.9	13.1	29.9
No	61.1	80.5	82.4	68.2
Don't remember	1.6	1.7	4.5	1.8
3. IF YES TO # 1, What Was Fee:				
< Rps. 5,000	14.0	27.6	18.0	17.4
5,000 - 9,000	47.0	34.1	29.2	43.1
10,000 - 14,000	25.5	21.6	16.9	24.4
15,000 - 19,000	9.5	12.3	14.9	10.5
20,000+	4.0	4.5		4.6
4. Was This Fee Considered Expensive:				
Expensive	15.3	13.7	10.9	14.5
Average	55.1	57.1	55.0	55.6
Cheap	29.6	29.2	34.1	29.8

## 7. NORPLANT® Continuation Rates

NORPLANT® is recommended for use through five years. Table 12 below shows the life table continuation rates for insertion cohort who continued with the method for one or more years. It should be noted that the insertion cohorts from 1989 through 1991 have not had the opportunity to continue as long as the earlier two insertion cohorts thus the data for the later cohorts is censored.

Table 12: Life Table Cumulative Probabilities of Continuing with NORPLANT®

YEARS	PERCENT CONTINUING TO END OF PERIOD					
	NORPLANT® Insertion Cohorts					
	1987	1988	1989	1990	1991	All Cohorts
One	98.1	98.3	97.8	97.5	98.5	97.9
Two	95.0	96.3	95.4	96.0	95.9	95.8
Three	93.6	94.6	92.6	93.6	92.9	93.5
Four	90.3	91.5	90.0	89.8	87.3	90.1
Five	73.1	70.6	64.4	64.5	55.8	66.1
Six	17.5	14.9	13.2	4.6		10.1
Seven	10.0	7.5	2.4			3.3
Eight +	7.8	3.2				1.6
N=	360	590	758	1073	197	2978

The data in Table 12 is graphically presented in Figure 2 below.

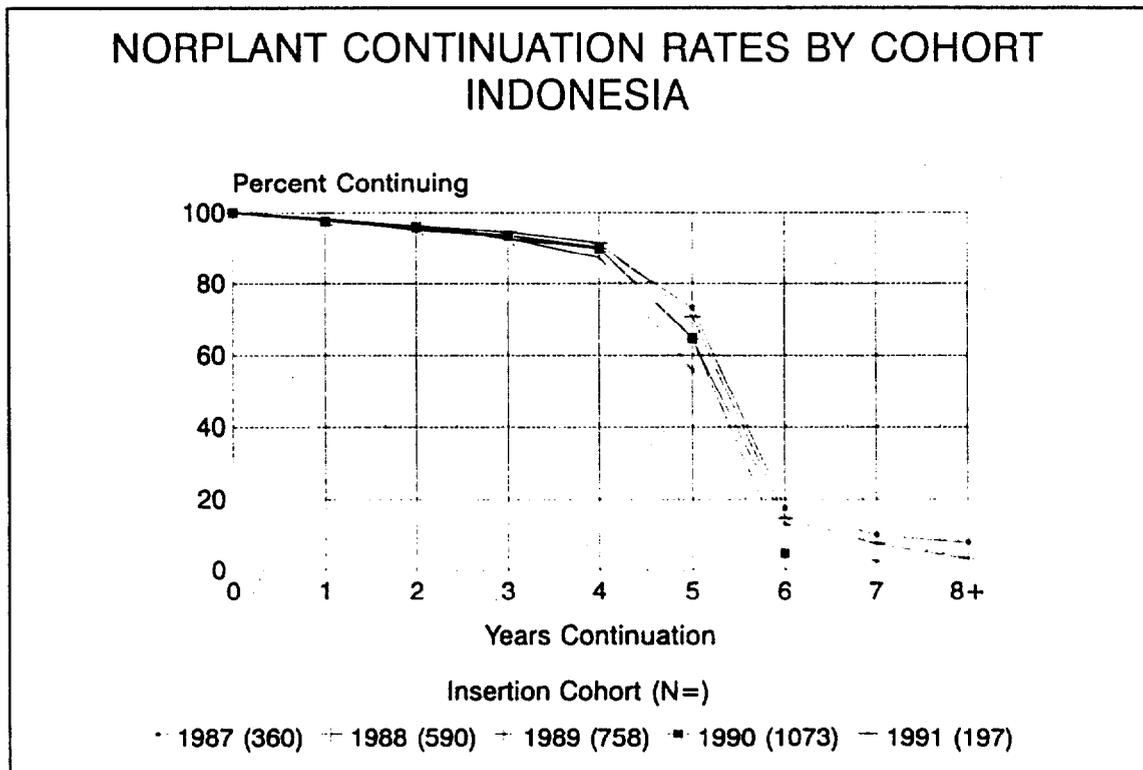


Figure 2

This Figure clearly shows the very high continuation rate for each NORPLANT® insertion cohort from 1987 through 1991. The Figure also illustrates the point that almost all NORPLANT® acceptors (over 90 percent) continue through the fourth year. Then, between the end of the fourth year there is the beginning of a sharp drop in use from 90 percent to 66 percent. This drop continues and accelerates from 66 percent at the end of the fifth year to 10 percent at the end of the sixth year of use.

Once again, this data emphasizes the point that whatever difficulties women may face in terms of finding a provider and paying for removal fees, at least for this sample of NORPLANT® users, the overwhelming majority of each insertion cohort obtain a removal between the end of the fifth and the end of the sixth year of use. Certainly by the end of the seventh year there is not an apparent, large backlog of removal cases, although it should be noted that not every user has had a removal.

## **8. Pregnant While Using NORPLANT®**

All respondents were asked whether they became pregnant while using the implants. On the women who had an implant in place, 42 or 1.4 percent said they became pregnant. About two-thirds of these (26 out of 42 pregnant) had their implants between 1987 and 1989. Almost all of them live in a rural area and had the implants inserted during a safari camp. Eight of the women thought they became pregnant slightly before the NORPLANT® insertion while 34 out of the 42 said that they conceived after they had their implants inserted. It should be emphasized that all of this data is based on client self reports. No independent verification of pregnancy after NORPLANT® insertion was possible. The data do suggest, however, the need for careful screening and careful counselling prior to NORPLANT® insertion in order to be reasonably sure that the client is not pregnant.

Although all of the women who said they became pregnant eventually had NORPLANT® removed, many of these women indicated that they experienced some difficulty in obtaining a removal. For example, 21 percent (9 women) said they didn't get a removal immediately upon request; 17 percent (7 women) said they had to wait for two or more days; and 17 percent (7 women) said they had to make two or more requests for a removal.

Out of 42 pregnant women, the majority of them (31 women) had a live birth. The outcome of the 42 pregnancies is shown below:

- Miscarriage, 7 percent (3 women);
- Abortion, 2 percent (1 woman);
- Still birth, 7 percent (3 women);

- Live birth, 74 percent (31 women);
- Live birth but died later, 7 percent (3 women);
- Currently pregnant, 2 percent (1 woman)

## V. CONCLUSIONS

Several major conclusions can be drawn from the findings of this NORPLANT® Assessment Study:

- Most NORPLANT® users obtain a removal between the end of the fifth year and the end of the sixth year of use. The data strongly suggest that there is not a large backlog of removal cases, particularly after the sixth year of use.
- Two thirds of removals are performed by nurse midwives. About 28 percent of removals are performed in private facilities. About 23 percent of removals are done in Safari camps. Together, these three findings probably account for a large under reporting of removals. Midwives, at least in the past, were unlikely to report removals because technically, they were not allowed to perform removals. Private facilities usually don't report removal procedures to the BKKBN. The reporting procedures at Safari camps is usually not as good as it might be at health facilities. These areas of potential under reporting need to be further checked.
- Recent NORPLANT® insertion cohorts are less likely to have a second NORPLANT® insertion immediately after removal of the first set compared with earlier insertion cohorts, and more likely to switch to other family planning methods. This trend should be monitored because it may affect future NORPLANT® demand levels.
- Only 16 percent of those who are over due for a removal use any other form of backup contraception. The use of a backup contraceptive method for those overdue for removal should be strongly encouraged.
- Helping NORPLANT® clients develop mechanisms to remind themselves of the removal date and emphasizing to Kader the need to remind clients of the removal date may be effective ways to assure that clients do not delay a removal after five years of use.

- About 91 percent of all women who have had a removal received the removal immediately upon request. The remaining 9 percent often had to wait several days and often had to make two or more requests before obtaining a removal.
- Almost 70 percent of all women said they were not informed at the time of NORPLANT® insertion that there would be a fee charged for removal.
- Among those who have not had a removal, the cost of the removal is perceived as a barrier.
- "Good Service" and "Familiarity with Staff" are important reasons why some women use private facilities as opposed to government facilities for removal.
- Obtaining a removal immediately on request is associated with accepting a second NORPLANT® insertion and with using other family planning methods. Not obtaining a removal immediately on request is associated with discontinuation of all family planning.
- The cost of a removal is higher at private facilities than at Government facilities.

## REFERENCES

1. Affandi, B. et al. Five-year Experience with NORPLANT®-6. *Contraception* 36: 417-428 (1987).
2. Affandi, B. et al. NORPLANT®'s insertion and removal by paramedical personnel. Presented at the XIth World Congress of Obstetrics and Gynecology, West Berlin, Germany, 15-30 September 1985.
3. Affandi, B. et al. Pregnancy after removal of NORPLANT® implants contraceptives. *Contraception* 36: 203-209 (1987).
4. Fisher, S. Diaz, A. Herrin, and J. Prihartono, Report on NORPLANT® Implants in Indonesia, The Population Council, May 1995, New York.
5. Lubis, F. et al. One-year experience with NORPLANT® implants in Indonesia. *Studies in Family Planning* 14: 181-183 (1983).
6. Kasidi, H. et al. NORPLANT® Use Dynamics. BKKBN, Jakarta, 1993.
7. National Family Planning Coordinating Board. *Indonesia: An overview of the National Family Planning Program*. BKKBN, Jakarta, 1987.
8. National Family Planning Coordinating Board. *National Strategy for NORPLANT® Quality of Care*. Jakarta, 1992.
9. National Family Planning Coordinating Board. *The 1992 Indonesia NORPLANT® Use-Dynamics Study: Final Report*. Jakarta, March 1993.
10. National Family Planning Coordinating Board. *Service Statistics on NORPLANT® Implant Acceptors*. Jakarta, 1994.
11. Poernomo, I.S.S. et al. NORPLANT® Acceptance in Rural Areas. Yayasan Kusuma Buana, Jakarta, 1986.
12. Poernomo, I.S.S. et al. User's attitude about NORPLANT® contraceptive subdermal Implant. Yayasan Kusuma Buana, Jakarta, 1989.
13. Prihartono, J. NORPLANT® Removal Due and Overdue 5-year. Yayasan Kusuma Buana, Jakarta, 1991.

14. Prihartono, J. NORPLANT® Surveillance System : An introductory Study. Yayasan Kusuma Buana, Jakarta, 1989.
15. Prihartono, J. NORPLANT® Surveillance System : Design Development. Yayasan Kusuma Buana, Jakarta, 1992.
16. Sutedi, H. et al. NORPLANT® Introduction in Indonesian Program. BKKBN, Jakarta, 1986.
17. Suyono, H. et al. The future prospect of the National Family Planning Programme in Indonesia. The introduction of Norplant in Indonesia. BKKBN, Jakarta, 1986.
18. Ward, S.J. et al. Service Delivery Systems and Quality of Care in the implementation of NORPLANT® in Indonesia. Population Council, New York, 1990.
19. Wibowo, A. et al. Manajemen NORPLANT®: Action-based NORPLANT® research. Yayasan Kusuma Buana, Jakarta, 1988.