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Impact of the Introduction of NORPLANT Implants into the National Family Planning Program of Thailand

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Introduction

Voluntary family planning has been a cannon of population policy of Thailand in her efforts to solve population problems. In fact, the formal population policy declared by the Government of Thailand in March 1970 stated *The Thai Government has a policy to support voluntary family planning in order to resolve various problems concerned with the very high rate of population growth, which constitutes an important obstacle to the economic and social development of the nation.*

After the announcement by the Government, the Ministry of Public Health established the National Family Planning Program (NFPP) to implement family planning activities. The first five- year program was prepared and included in the Third National Economic and Social Development Plan (1972-1976). The specific objectives of the first five-year family planning program were:

(a) To reduce the population growth rate from over 3 percent to about 2.5 percent by the end of 1976;

(b) To inform eligible women, particularly those living in the rural and remote areas, about the concept of family planning and to make service readily available throughout the country;

(c) To integrate family planning activities with overall maternal and child health services and thus mutually strengthen the activities.

Subsequent five-year family planning programs which were integral parts of the Fourth and the Fifth National Economic and Social Development Plans (1977-1981 and 1982-1986) aimed to reduce the population growth rate to 2.1 percent by the end of 1981 and to about 1.5 percent by the end of 1986. It also aims to reduce the rate of population growth further to 1.3 percent by the end of 1991. As may be seen from Table 1 below, the attainment of the planned target rate of population growth of 1.3 percent by the end of 1991 requires that the NFPP has to recruit about 6.6 million new acceptors and to provide services to about 5.7 million active users. Compared with the

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number of new acceptors and active users during the 1982-1986 period, the number of new acceptors and active users during the 1987-1991 period has to be increased by 3.2 million (Appendix, Table A).

The population growth target of 1.3 percent by the end of 1991, when measured in terms of contraceptive prevalence rate, requires that approximately 75 percent of Thai married women in reproductive age practice one method of modern contraception or another. As attested by results of various sample demographic surveys conducted since 1969, trends in contraceptive practice of married women are indeed encouraging. Within a short period of 18 years, the contraceptive prevalence rate has increased from a mere 14.8 percent in 1969-70 to 70.5 percent in 1987, representing a 4.8 fold increase (Appendix, Table B).

Despite the encouraging trends in contraceptive prevalence rate, concern over the achievement of the desired target of 75 percent contraceptive prevalence rate has been expressed. Such concern is partly due to the deceleration in an average annual rate of growth in contraceptive practice. Further, the average number of married women in each year during the Sixth Plan period was estimated to be about 18 percent higher than that of the Fifth Plan period. It is for the above reasons and in line with the principle of voluntary family planning which implies the provision of high quality services and a wide-range of contraceptive choice to potential acceptors that encourage the NFPP to continuously introduce additional method of contraception in its service delivery program, the latest one being the planned introduction of NORPLANT implants.

The Planned Introduction of NORPLANT Implants

Levonorgestrel subdermal implant developed by the Population Council, known as NORPLANT has been on a clinical trial since 1972 and has shown to be highly effective and acceptable (Koetsawang et al., 1984). Encouraged by positive result of the clinical trial, the NFPP initiated a pilot study on NORPLANT implants in five medical centers located in different parts of the country in 1980. The study aimed to determine how NORPLANT implants are perceived by the Thai population and to measure continuation and pregnancy rates of implant users. The study showed a higher continuation rate among the NORPLANT acceptors than among the IUD and injectable acceptors. The side effects, apart from the experienced changes in menstrual function, is minimal. For example, of 704 women who were interviewed, about 455 women or 65 percent of acceptors reported that they experienced side effects of one kind or another. However, of these 455 women, 378 women or 83 percent of them mentioned menstrual problems alone. Percentage of those reporting other single side effect such as weight

gain or loss, severe headache, acne, chlosma a d not exceed 4 percent (Satayapan, Kanchanasinith and Varakamin, 1983). Consequently, the NFPP decided to introduce NORPLANT as an additional method of contraception into the *cafeteria* of contraceptive methods.

According to the NFPP's planned schedule, the introduction of NORPLANT implants involve a series of activities; the orientation for 73 provincial chief medical officers; obtaining registration for NORPLANT by the Thai Food and Drug Administration; preparation of the curriculum for training of trainers and general physicians; training for trainers and for general physicians; and, procurement of NORPLANT implants and trocars for insertion. It was estimated by the NFPP that during the first phase, approximately 700 physicians would be trained to be able to insert and remove NORPLANT for approximately 10,000 acceptors. The planned introduction of NORPLANT was first scheduled in October 1986. The rising cost of supplies, however, caused the NFPP to change the schedule to 1987. Furthermore, the planned provision of NORPLANT to interested acceptors at about 60 percent of over 500 district community hospitals throughout the country has also been changed to the provision of this type of contraception to married women in remote rural areas only.

Potential Impact of NORPLANT on Total Contraceptive Prevalence and Family Planning Practice

The question of determining the extent to which NORPLANT will contribute to increasing contraceptive prevalence rate is a matter of great interest to all concerned. As mentioned earlier, the increase in contraceptive prevalence rate of Thai women in the past is quite dramatic although recently there is an indication of decelerated increase. By examining the program statistics on number of new acceptors of family planning presented in Table 1 below, one may see that concurrent with the introduction of (or rather the special effort to promote) some additional contraceptive methods especially intra-uterine device, sterilization (both male and female) and injectable, the number of new acceptors of modern contraceptive methods in each year has increased over the previous year, except in 1973 and in 1982 when new acceptors in these two years were slightly less than the previous years. If the number of new acceptors of all methods in 1972 is used as a base, the annual number of new acceptors had increased about 3.4 times, representing an annual average rate of growth of 9.1 percent during the 14 year period from 1972 to 1986. It should be noted, however, that the rate of change in the number of new acceptors, measured in terms of index number in the 1980s, was much lower than that of the 1970s. Trends in the number of new acceptors of family

planning and trends in contraceptive prevalence rate indicated earlier may be taken to mean that the introduction of NORPLANT implants may contribute to the increase of contraceptive prevalence rate but not significantly. Only 0.2 percent of 70.6 percent of married women in reproductive age who practice contraception used NORPLANT implants in 1987 (Leoprapai and Thongthai, 1988).

Table 1. Index number of new acceptors of family planning by method (1972 = 100.0) and number of new acceptors, 1972-1986

Year	Pill	IUD	Sterilization Male	Sterilization Female	Injec-table	Others	All Methods	No.of new acceptor, all methods
1972	100.0	100.0	100.0	100.0	100.0	-	100.0	456,694
1973	82.0	103.7	218.6	149.1	165.4	-	92.4	422,176
1974	93.2	99.6	528.9	234.8	301.0	-	108.3	494,479
1975	105.4	83.4	587.7	263.3	388.8	100.0	123.0	561,694
1976	115.0	79.8	791.7	303.1	1161.4	141.2	145.6	664,895
1977	149.2	83.0	1491.6	340.3	1087.9	266.9	181.6	829,405
1978	170.3	86.3	3452.1	395.7	1371.4	187.5	206.0	940,719
1979	187.6	86.6	2753.5	442.0	1867.5	206.9	227.7	1,039,774
1980	199.5	88.1	2426.3	483.3	2370.9	207.9	245.4	1,120,966
1981	193.8	88.9	2215.6	475.8	2699.4	234.5	246.5	1,125,816
1982	190.0	93.1	1825.7	457.4	2815.9	245.4	244.5	1,116,418
1983	182.5	140.8	2112.0	466.6	3265.1	295.3	259.1	1,183,215
1984	177.6	211.1	3523.6	524.2	3952.2	318.2	293.2	1,339,100
1985	179.2	204.8	2915.5	510.8	5916.2	287.8	310.9	1,419,977
1986	187.2	221.8	2791.5	517.2	7137.0	319.2	338.7	1,547,005

Sources : Research and Evaluation Unit, Family Health Division, 1984 ; and data from 1984 onwards are from computer printouts on monthly report of new acceptors the National Family Planning Program, January 1984 - December 1986.

Potential Impact of NORPLANT on Acceptance of Other Contraceptive Methods

Another question of great interest to policy makers and other program administrators is to what extent the introduction of NORPLANT implants as an additional method of contraception will affect the acceptance of existing contraceptive methods. Two approaches may be used to assess such an impact. The cruder approach is to examine the changing proportion of new acceptors of each contraceptive method which has occurred as a result of introducing another method of contraception (or specifically promoting a particular method of contraception such as sterilization). Using the Thai family planning program statistics, the proportion of pill acceptors has declined from about 72 percent of all new acceptors in 1972 to only 40 percent in 1986. The decline in the proportion of IUD acceptors has also been apparent. Such a decline

in the proportions of pill and IUD acceptors may be attributable to the promotion of sterilization acceptors as percentage of acceptors of all methods rose from 7 percent in 1972 to over 15 percent from 1974 to 1982. The decline in the proportion of sterilization acceptors since 1979 may be attributable the increase of injectable acceptors, the proportion of which has consistently increased from a mere 1.4 percent in 1972 to about 29 percent in 1986. The recent increase in the proportion of IUD acceptors is due primary to the special effort to promote this method of contraception (see Table 2). Thus, the introduction of any new method of contraception seems to have affected the acceptance of existing methods.

Table 2. Proportion of new acceptors of family planning by method, 1972-1986

Year	Pill	IUD	Sterilization	Injectable	Others	All methods
1972	71.7	19.7	7.2	1.4	-	100.0
1973	63.6	22.1	11.8	2.5	-	100.0
1974	61.7	18.1	16.3	3.9	-	100.0
1975	61.4	13.4	16.0	4.4	4.7	100.0
1976	56.6	10.8	15.8	11.0	5.7	100.0
1977	58.9	9.0	15.2	8.3	8.6	100.0
1978	59.3	8.3	17.9	9.2	5.3	100.0
1979	59.1	7.5	16.7	11.3	5.3	100.0
1980	58.3	7.1	16.3	13.4	4.9	100.0
1981	56.4	7.1	15.8	15.1	5.6	100.0
1982	55.7	7.5	15.0	15.9	5.9	100.0
1983	50.7	10.7	14.7	17.4	6.6	100.0
1984	43.4	14.2	15.6	18.6	6.3	100.0
1985	41.4	13.0	13.9	26.3	5.4	100.0
1986	39.6	12.9	12.8	29.1	5.5	100.0

Source : See Table 1.

A somewhat more refined measure of the impact of NORPLANT implants on acceptance of other contraceptive methods especially the temporary methods such as pill, injectable and IUD would have to rely on data on contraceptive history of NORPLANT implant acceptors and reported reasons for accepting NORPLANT implants. For example, the Thai study showed that 54, 27 and 16 percent of NORPLANT implant acceptors were ever users of pill, IUD and injectable respectively. It was also shown that 46 percent of these women accepted NORPLANT implants because of problems with other methods. (Satayapan, Kanchanasinith and Varakamin, 1983). In the absence of information on a particular method which ever users stated that they had problems with, we have to assume that the proportions of those having problems with pill, IUD and injectable are the same as the percentage distribution of NORPLANT implant acceptors who were ever users by method of contraception.

Thus, the effects of NORPLANT implant acceptance on pill acceptance (i.e., current pill acceptors who are expected to switch to NORPLANT implants had this method of contraception been made available) will be about 24.8 percent. Effects on IUD and injectable acceptance are about 12.2 and 7.4 percent respectively.

As for the impact of NORPLANT implant acceptance on the acceptance of voluntary sterilization which is a permanent method of contraception, another set of information and different method of estimation are required. In principle, voluntary sterilization acceptors are those who desire no more children. If this is the case, the impact would be minimal or nil. Whenever NORPLANT implants are viewed by potential sterilization acceptors as a stopgap method before decision on termination of birth, than the introduction of NORPLANT implants as one additional method of contraception will, to a certain extent, affect the acceptance of voluntary sterilization.

Additional Resources Needed to Include NORPLANT Implants in the National Program

The major component of the cost of providing NORPLANT implants is the cost of contraceptive supplies. The current market price for a set of six implants which the NFPP plans to introduce is about US$ 34. Compared with the cost of contraceptive supplies per acceptor for pill at US$ 5.40, injectable at US$ 4.15 and IUD at US$ 1.40, it may be noted that supply cost per acceptor for implants is much higher. As for other items of direct and indirect cost such as salary and wages of personnel, travel cost and per diem, training cost and cost of administration should not be higher than other methods of contraception. The NFPP, for example, plans to conduct only two-day training for trainers and the training of physicians in the insertion and on removal of implants will last only one day. Thus, the highest proportion of additional resources needed would be the cost of procuring contraceptive supplies. Existing personnel could be trained to provide service and the only additional equipment needed is a set of trocars for NORPLANT insertion.

As for the question of cost effectiveness which can be measured either in terms of cost per acceptor, per couple-years of protection and per births averted, a further study is needed. At this stage and at the current market price of NORPLANT implants, the additional resources required in providing service to potential acceptors would be much higher than those required by existing methods of contraception even when we are willing to assume that pregnancy rate of NORPLANT acceptors is zero and an effective life span of a single set NORPLANT implants is longer than other temporary methods.

Important Social Science and Operations Research Questions Needed to be Addressed

It has been observed by some researchers that NORPLANT implants have been proved to be one of the safe and effective contraceptive methods and accepted in a broad range of cultures and among various social and demographic groups (Sivin and Brown, 1983). Since the observations made are based on laboratory research and clinical trails, a number of social science and operations research questions remains unanswered. These questions are:

(1) What are the social, economic, institutional and program-related factors associated with the acceptability/non-acceptability of NORPLANT implants as one of the methods of contraception?
(2) What factors determine the successful continuation of use of NORPLANT implants?
(3) What are the acceptors' perceived advantages and disadvantages of this method of contraception and what are the social and behavioral determinants of those perceptions?
(4) What are the determinants of compliance, the reasons for discontinuation, and the perceptions of safety, side effects and efficacy of the method?
(5) What is the extent of effects of introducing NORPLANT implants as an additional method of contraception on the acceptance of existing contraceptive method?
(6) What are the acceptors' costs and benefits associated with the use of this method of contraception?
(7) What are the cost effectiveness and cost efficiency of NORPLANT implants vis-a-vis exiting methods of contraception?

The research issues as mentioned above will not only enhance our understanding of factors contributing to or hindering the acceptability and the successful use of the method but also convey important policy and program implications.

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Appendix

Table A. Demographic targets and estimated number of required acceptors of modern contraceptive method in each 5-year development plan, 1972-1991

Plan and period	Birth rate per thousand	Population growth rate (%)	Estimated number (in million) of family planning	
			New acceptors	Active users
Third				
1972	41.0	3^+	1.975	-
1976	35.0	2.5		
Fourth				
1977	34.5	2.4	4.520[1]	-
1981	28.4	2.1		
Fifth				
1982	27.5	2.0	4.881[2]	4.254
1986	22.9	1.5		
Sixth				
1987	-	1.4	6.651	5.692
1991	-	1.3		

[1] Revised from the original target of 3.029 new acceptors
[2] Revised from the original target of 4.593 new acceptors

Sources : National Economic and Social Development Board, 1973, 1977; and data supplied by Research and Evaluation Unit, Family Health Division, Department of Health.

Table B. Percent currently practicing contraception among currently married women age 15-44 by age

Year and name of survey[1]		Age of woman						All ages
		15-19	20-24	25-29	30-34	35-39	40-44	
1969-70	LS1	3.8	6.9	14.4	22.0	18.0	13.1	14.8
1972-73	LS2	6.0	20.1	28.6	31.4	35.6	19.4	26.3
1975	SOFT	16.1	30.9	41.0	44.0	42.3	30.5	36.7
1978-79	CPS1[2]	31.3	44.2	54.4	61.1	62.8	49.5	48.5
1979	NS	19.5	32.9	52.7	61.1	59.5	44.2	49.3
1979	AFPH[3]	21.4	34.5	49.6	60.9	57.5	47.1	48.1
1981	CPS2	29.0	47.5	60.4	67.7	68.6	56.4	59.0
1984	CPS3	39.5	54.4	63.4	71.9	73.8	64.2	64.6
1987	CUPS	51.5	59.9	69.4	76.0	79.2	73.2	70.5

1 LS1&2 - Longitudinal Study of Social, Economic, and Demographic Change - Rounds 1 & 2.
SOFT - Survey of Fertility in Thailand (part of WFS).
NS - National Study of Family Planning Practice, Fertility and Mortality.
AFPH - Accelerated Family Planning and Health Project Baseline Survey.
CPS1,2&3 - Contraceptive Prevalence Survey Rounds 1,2&3.
CUPS - Determinants and Consequences of Contraceptive Use Patterns in Thailand.

2 Excluding provincial urban.

3 Results refer to a universe of 20 provinces; the urban sample refer to provincial urban only.

Sources : Data for 1969-70 through 1981 are from Knodel et al., 1982 (Table 34 : 106); data for 1984 are from Kamnuansilpa and Chamratrithirong, 1985 (Table 5.10 : 48); and data for 1987 are from Leoprapai and Thongthai, 1988.