

ISN 69228
DRAFT

DRAFT
2 June 1987

ANALYSIS OF POPULATION POLICIES
AND PROGRAMS IN INDIA

George F. Brown
Anrudh K. Jain
John Gill

The Population Council
May 1987

BACKGROUND

The Population Council was invited by USAID/Delhi to undertake a review of Population Activities in India in order to update a comprehensive review undertaken by Council staff in 1982. The objective of this review is to identify potential areas for support from USAID to the Government of India that are consistent with the policies and strategies of both the U.S. and the Indian Government.

This objective is achieved by reviewing achievements of the Family Welfare Program since 1982 and contributions made by USAID and other donors, and by examining the current and future plans of the Government of India to achieve its stated demographic and health objectives. For this purpose, a team consisting of George Brown and Anrudh Jain, who were also the members of the 1982 team, visited India from March 23 to April 10, 1987. John Gill, a third member, joined the team during April 4-11, 1987. Suzanne Olds from USAID accompanied the Council team on much of their visit. Members of USAID staff in Delhi also participated in parts of the visit. These included Ralph Lynton, G. Narayana, and Warren Robinson. Sarah Harbinson, as a consultant to the Council, provided invaluable input especially in preparing the section on program achievements. While in India, the team members met with USAID staff, with officials of the Ministry of Health and Family Welfare, Planning Commission, with state-level officials, and with the staff of selected public and private

sector institutions, donors, and others concerned with population (see Appendix I for a selected list of people who were contacted). The Council team also visited six states: Andhra Pradesh, Gujarat, Maharashtra, Kerala, Tamil Nadu, and Uttar Pradesh. During the visit, the team met with the state officials and nongovernmental organizations, and made field trips to selected rural and urban family welfare centers. The team also met with the members of the Population Research Centers and other institutions engaged in population-related activities.

A primary focus in the scope of work for the present review was to identify critical ways to expand the availability and utilization of reversible methods of contraception. For this purpose the areas considered by the team included service delivery, contraceptive technology, demographic and operations research, institutional capabilities, management information, and private sector and nongovernmental organizations. Various issues within these areas, which were to be considered by the team, are listed below:

Service delivery. The extent to which services and information about contraceptive methods, especially reversible methods, are available and the extent to which they can be made more easily accessible to a majority of the Indian population living in both rural and urban areas. This will include an assessment of program and nonprogram factors that inhibit the

availability and utilization of reversible methods, and the potential role of USAID in helping to address these constraints.

• Contraceptive technology. To review the efforts of Indian scientists to develop and test new contraceptive methods, and to examine efforts required to incorporate new methods into the family planning program. The review will include various aspects of the introduction program ranging from clinical and preintroduction trials, mode of delivery, logistics, training, acceptability, information for users and providers, and monitoring and management of the program, including follow-up visits and management of side effects.

• Demographic and operations research. To identify needs and opportunities for strengthening efforts to collect/analyze fertility, family planning, and mortality data and to assess the extent to which USAID can support operations research geared toward improving the delivery of reversible methods, perhaps within the context of selected state(s).

• Institutional capabilities. To review existing institutional capabilities and to identify future needs to develop the human resources required to address population-related issues within the Indian context,

especially through demographic and operations research, and contraceptive research.

- Management information. To identify information needed on a regular basis to effectively manage and monitor the qualitative as well as the quantitative aspects of service delivery, especially with regard to reversible methods.

- Private sector and nongovernmental organizations (NGOs). To identify opportunities for and constraints to increasing the involvement of private and nongovernmental organizations in delivering family planning services, and to assess opportunities for local manufacture of contraceptives.

POPULATION POLICY

The population of India in 1981 had almost doubled in the 34 years since Independence. According to the 1981 census, the population was estimated to be about 685 million, including the estimated population of Assam in which the 1981 census was not conducted. The population during the 1971-1981 decade grew at an annual rate of 2.25 percent. With this rate of growth, the population of India would double in about 30 years. According to the medium projections of the Expert Committee on "Population Projections in India up to 2001," the population of India was projected to be 761 million in 1986 and is projected to reach 986 million by the year 2001.

The Indian Government has, for over 30 years, explicitly recognized the negative consequences of the population growth rate on India's efforts toward economic development. This recognition over time has culminated in a comprehensive population policy as well as increased support to the Family Welfare Program in successive development plans.

The Family Welfare Program in India, according to the seventh Five-Year Plan document, "occupies an important position in the socio-economic developmental plans. It plays a crucial role in human resource development and in improving the quality of life of our people. It forms an essential and integral part

of the 20-point programme which stresses the need for the promotion of 'family planning on a voluntary basis as a peoples' movement'." Its implementation, however, is driven by the need to meet the long- and short-term demographic goals rather than to meet the needs of the people. Here lies the dilemma and challenge for population policy and programs in India.

The long-term demographic goal approved by the National Development Council are to reduce the Net Reproduction Rate (NRR) to 1 by the year 1996 for the country as a whole and by 2001 in all the states. The implications of these goals, as spelt out in the seventh Five-Year Plan document, require that following targets be met by the end of this century:

- (1) a crude birth rate of 21 births per 1,000 population,
- (2) a crude death rate of 9 deaths per 1,000 population,
- (3) an infant mortality rate of 60 deaths per 1,000 births, and
- (4) a contraceptive prevalence rate of 60 percent of eligible couples.

The long-term demographic goals are then translated into short-term goals for the entire five-year period of each plan and in terms of targets for each individual year. In recognition of short-falls in the achievement of targets set for the sixth plan period (1981-85), there are indications of a shifting of the ultimate goal of achieving a NRR of 1 from the year 2001 to the

period 2006-2011. With the recognition of this shift in the long-term objectives, the goals set for the year 1990 (the end of the seventh Five-Year Plan) include the following achievements:

- (1) an effective contraceptive prevalence rate of 42 percent,
- (2) a crude birth rate of 29.1 per 1,000 population,
- (3) a crude death rate of 10.4 per 1,000 population, and
- (4) an infant mortality rate of 90 per 1,000 births.

The goal of achieving a contraceptive prevalence rate of 42 percent in 1990 is translated in terms of annual targets for acceptors of each method (see Table 1). The resources allocated to the Family Welfare Program to achieve these contraceptive targets in the seventh plan period are Rs. 32.56 billion. This represents an increase of 302 percent over Rs. 10.78 billion allocated in the sixth plan period, and an increase of 225 percent over the Rs. 14.48 billion estimated expenditure during the sixth plan period.

The increased allocation of resources to family planning in the seventh plan gains added significance once we compare the distribution of public resources allocated to different sectors of socio-economic development (see Table 2). While the share of resources allocated to family planning has increased from 1

TABLE 1

Targets for the Seventh Plan
Required Acceptors (in millions) of Family Planning Methods

Year	Sterilization	IUD	Other	Total
1985-86	5.5	3.2	10.5	19.2
1986-87	6.0	3.8	11.5	21.3
1987-88	6.2	4.2	12.5	22.9
1988-89	6.5	4.8	13.5	24.8
1989-90	6.8	5.2	14.5	26.5

Source: Seventh Five-Year Plan, Table 11.2, p. 281.

TABLE 2

Percentage Distribution of Public Sector Outlay
by Sector of Development in Fourth to Seventh Plans

Sector of Development	Fourth 1969-74	Fifth 1974-79	Sixth 1980-85	Seventh 1986-91
<u>Economic</u>				
Agriculture & allied sectors ¹	17.1	11.0	12.9	12.7
Irrigation & flood control	6.8	10.7	12.5	9.4
Energy	15.4	26.2	27.2	30.5
Industry & minerals	22.8	18.7	15.4	12.5
Transport & communications	20.3	17.6	15.9	16.4
<u>Social</u>				
Education	6.1	3.3	2.6	3.5
Health	2.7	1.7	1.9	1.9
Family Planning ²	2.0	1.3	1.0	1.8
<u>Other</u> ³	6.8	9.5	10.6	11.4
Total % Public sector outlay (in million Rs.)	100.0 159,020	100.0 393,220	100.0 975,000	100.0 1,800,000

¹ Includes agriculture, allied areas, and rural development.

² Includes Maternal and Child Health.

³ Other includes science and technology; other social services including water and sanitation, social and women's welfare, nutrition, housing and urban development; and others.

percent in the sixth plan to 1.8 percent in the seventh plan, the share for such development sectors as irrigation and industry has in fact decreased.

The internal allocation of resources to different family planning activities in the sixth and seventh plans are compared in Table 3. There has been a substantial increase of resources allocated to each of the items, although the increase is not uniform. Two items--services and supplies, and maternal and child health--accounted for 87 percent of the resources in the sixth plan. During the seventh plan, the resources under these two heads have been more than doubled in absolute amount, although they only account for 69 percent of all the resources. A substantial increase is envisioned under training, organization, village health guides scheme, and area projects. Research and evaluation activities account for less than 1 percent. While we are not certain about the activities included under each of the items listed in Table 3, a cursory look suggests that these allocations do not reflect any strategic change in the use of about Rs. 22 billion additional resources allocated to the Family Welfare Program activities in the seventh plan. It is interesting to note that no resources are explicitly allocated to experimental approaches to deliver services or to create demand for these services.

We reviewed a number of other documents which shed some light on current thinking in the government concerning population policy and program implementation. These include "Revised Strategy of National Family Welfare Programme," "Strategy for Promotion of Spacing Methods of Contraception," and "Communication Guidelines." We applaud the revised strategy document which is quite comprehensive. Very little can be said about population policy and program that is not already included in this document. The other two documents represent attempts to take the next step in operationalizing elements of the revised strategy. A few observations on the revised strategy follow. Similar observations on the other two documents are made in the next section.

The revised strategy document explicitly and most appropriately recognizes the importance of so-called "beyond family planning" measures which affect the course of fertility, such as age at marriage, and also inhibit the use of contraception, such as female literacy and education, status of women, child survival and development, poverty, old age security, and importance of sons. What exactly the family welfare program can do to change these impediments is by no means clear beyond the fact that family planning is currently integrated with the maternal and child health program. Moreover, a reduction in infant mortality is explicitly included as one of the objectives of the

TABLE 3

Allocation of Family Planning* Resources
in Sixth and Seventh Plans

Program	Outlay in million Rs.		Ratio (1)-(2) (3)	Percent Distribution of Plan Outlay	
	Sixth (1)	Seventh (2)		Sixth (4)	Seventh (5)
Services & Supplies	6,877	13,569	1.97	63.8	41.7
Training	88	609	6.92	0.8	1.9
Research & Evaluation	115	250	2.17	1.1	0.8
ICMR	-	500	NA	-	1.5
Mass Media & Education	320	1,500	3.28	3.0	3.2
Maternal & Child Health	2,503	8,885	3.55	23.2	27.3
Organization	195	1,250	6.41	1.8	3.8
Village Health Guides Scheme	680	3,700	5.44	6.3	11.4
Area Projects	-	2,750	NA	-	8.4
India Population Projects	2	-	NA	**	-
TOTAL	10,780	32,563	3.02	100.0	100.0

* Includes Maternal and Child Health

** less than 0.1 percent

- not available

NA not applicable

Source: Sixth Five-Year Plan p. 385, Seventh Five-Year Plan pp. 281 and 291.

population policy. In other sectors, the alleviation of poverty continues to be one of the major stated objectives of the development plans and efforts. Similarly, achievement of universal elementary education has been a stated objective since independence. In the seventh plan, the share of "planned" resources allocated to education has increased to 3.5 percent from 2.6 percent in the sixth plan. Internal allocation of these resources, however, is not consistent with the stated objective of universal elementary education.

There is an appropriate recognition in government circles of the inadequacy of dependence on sterilization and the need to incorporate spacing methods in the family planning program. This shift is also reflected in the targets set for the seventh plan period (see Table 1). Incorporation of spacing methods, however, has major implications for most of the other program activities which are not yet fully appreciated.

There is an implicit recognition that the program is not driven by an existing demand for family planning. Therefore, there continues to be heavy reliance on incentives for the clients as well as providers, and on mass media to create demand for family planning and to change social behavior. A desire and push to meet the demographic targets, which filters down the

entire system through contraception targets, incentives and awards, clearly inhibits the program from becoming a "peoples' movement."

PROGRAM STRUCTURE AND IMPLEMENTATION

The revised strategy for the National Family Welfare Program describes an intensification of an extraordinarily extensive and varied program. It has been said that the Indian Family Planning Program has "tried everything" in the field, and many innovative approaches continue to flourish. The basis of the program resides in the governmental health infrastructure reaching down from central to state to district and to local levels. This is supplemented by vigorous nongovernmental programs, especially in the cities. Additionally, a social marketing program has been in place since 1968 which makes Nirodh condoms available at a subsidized price through retail stores of major consumer marketing companies. Organized sector family planning programs exist in major industries. IE&C programs have been underway for two decades or more. All these efforts are supplemented by a wide range of research and evaluation activities. An effective expansion of these activities, with effective coordination, are a major challenge for a program of this size and complexity.

The government health infrastructure is the major resource for family planning, information and services, in the context of other primary health care efforts. The objective is to create the following infrastructure by the year 2000: one Community Health Center (CHC) for every 100,000 population; one Primary Health Center (PHC) for every 30,000 population (20,000 in tribal and

hilly areas); one sub-center for every 5,000 population; (3,000 population in tribal, hilly, and otherwise difficult areas); and the posting of village health guides and dais in every village. At the core of this structure is the PHC, of which approximately one-half of the desired number are in place. Of the sub-centers, about two-thirds are in place. In the urban areas, there are 554 postpartum centers at the district level, with a planned major expansion of additional centers at the sub-district level. These are supported by urban family welfare centers and the reservation of beds in hospitals for the purpose of sterilization. Although this structure is prescribed at the national level, there is a great deal of variation in its application among states. Also the degree of staffing, and the competence of staff, as well as their regular attendance at health facilities, varies considerably.

Nongovernmental organizations have pioneered in family planning since the early 1950s. The Family Planning Association of India is the largest and most influential, with active service and information programs, focusing largely on urban populations. Many other voluntary groups, including women's organizations, include family planning as part of their health and social services. These groups are active both in urban and rural settings and frequently supplement the government services. In the organized sector, family planning programs have been

established in large industrial organizations. The revised strategy envisages the expansion of family planning in the organized sector to the many cooperatives in rural areas.

The commercial distribution of condoms at a subsidized price has been in place for 19 years. This program utilizes commercial marketing companies in distributing condoms to small commercial outlets throughout the country. A plan to distribute oral contraceptives in a somewhat similar fashion through pharmacies is ready to be launched. In each case, the government underwrites a major part of the cost of the product, and a low retail price is assured. This distribution is supplemented by free distribution of condoms and oral contraceptives through the primary health care network.

IE&C programs are being expanded both at central and state levels. These include multi-media communication campaigns, communications, messages and materials for eligible couples, and other educational materials for workers and specialized groups. The messages will focus not only on family planning methods, but on "beyond family planning" issues including reinforcement of the two-child family norm, child survival, increase in age at marriage, neutralizing the preference for sons, and encouragement of inter-spouse communication. An expansion of the central funding for the IE&C program has permitted the rapid build up of

an IE&C capacity in the central Ministry of Health and Family Welfare. This program intends to utilize the skilled capacity of private sector communications industry.

While the implementation of the family planning program proceeds on the broad fronts described above, certain special elements will be highlighted below.

o Spacing methods. The targets for the seventh plan include a substantial increase in the number of couples using "spacing methods," including IUDs, oral contraceptives, and condoms (see Table 1). A special report to the MOHFW entitled, "Strategy for Promotion of Spacing Methods of Contraception" was prepared in 1986, and details a variety of approaches to achieve this shift away from heavy reliance on sterilization. This strategy includes increasing the understanding of providers of the value of spacing methods, and how to use them; broadening the IE&C program to the community on spacing methods; and training staff at all levels. This program is being implemented in a variety of ways. Manufacture and distribution of oral contraceptives is being dramatically expanded. A new social marketing effort has been launched which will make oral contraceptives available through pharmacies at a subsidized price. While normally requiring a physician's prescription, orals can be obtained through ANMs, with the proviso that women see a doctor

within three months after beginning the use of OCs. A national workshop on oral contraception was held in New Delhi in March 1987, to be followed by a series of regional seminars. These seminars, together with IE&C efforts, are intended to overcome the skepticism and reticence concerning oral contraception among providers and potential users. :

IUDs, especially Copper-T 200 devices, have been steadily increasing in use. Technology transfer to create a manufacturing capacity for IUDs in India is presently the subject of negotiations. IE&C programs support the expanded use of IUDs.

The condom marketing program remains essentially unchanged, although new improved condoms are coming onto the market, primarily for commercial sales in urban areas. IE&C programs are being developed in support of condoms as well. Manufacturing capacity for condoms in India is excellent and has been recently expanded.

For all spacing methods, a strong logistics system is essential to assure continued availability at all levels. Attention is being given to this crucial element, as strengthening of the supply system is essential as greater emphasis is placed on spacing methods, which require uninterrupted and convenient supply systems.

o Information, Education and Communications. An expanded IE&C program has been devised, and a new senior position created in the Ministry of Health and Family Welfare to manage it. A strategy paper entitled, "Communications Guidelines" sets forth the goals for the IE&C program. These include influencing "beyond family planning" behavior, as well as improving contraceptive knowledge. Substantially increased funds have been allocated to this activity, which includes extensive use of mass media, including television and radio, IE&C materials for providers at all levels, and mobilizing community concern and involvement in the communication program. The program will emphasize communications efforts in Bihar, Uttar Pradesh, Madhya Pradesh, and Rajasthan. Work at the central level is supplemented by increased IE&C activities at the state and district levels. While the capacity of the MOHFW is being increased, the program also intends to utilize the skills of various private sector institutions expert in communications.

This ambitious expansion of the communications program is beginning, and it is too early to assess its potential or its future impact. However, a new level of energy has been created in IE&C, and there is some expectation that it may rejuvenate this sector of the program.

o Quality of Services. The government has recognized that the quality of services needs to be improved, that there is dissatisfaction in many rural areas with the existing services, and that an emphasis on spacing methods demands substantial efforts to achieve continuous high quality services. Two efforts have recently been initiated to check the reliability of service statistics and to improve quality of services, in addition to the ongoing training and retraining programs for various levels of health workers.

The Evaluation section of the MOHFW has established a mechanism to check the reliability of service statistics. It consists of evaluation teams stationed in eight regions throughout India. Each team selects a state every month. A sample of 1,000 acceptors is selected based on a multi-stage sample selection of two districts, four PHCs, and 24 sub-centers. These acceptors are interviewed to verify actual delivery of services, their eligibility, demographic characteristics, follow-up services, and actual receipt of compensation money (incentives). The team prepares field reports based on these interviews and submits them to the Evaluation section in Delhi. The primary purpose of this effort is to estimate the extent of over-reporting in the system and to adjust the reported figures accordingly.

The ICMR is in the process of establishing a second mechanism to evaluate the quality of family planning and MCH services provided by PHCs. This evaluation will be undertaken by a team of experts, attached to the Human Reproduction Research Centers (HRRC) in each state. The team will consist of a senior physician, a research officer, and a demographer/epidemiologist. The study will commence in four HRRCs and after evaluation will be extended to 30 centers. The team will visit selected PHCs and sub-centers to examine their physical and manpower situation, and to assess the knowledge of personnel as well as the quality of services delivered by the staff to the public. The team will report their findings to the state health authorities and make recommendations for action. In addition the team will conduct interviews with acceptors of various methods and obtain their reactions to the services delivered and their degree of satisfaction with the services and the contraceptives offered. Epidemiological evaluation of sterilization is also planned. The program is beginning, so it is too early to assess its impact; but it has a potential to at least help to improve the quality of services provided through the infrastructure.

o Targets, incentives and rewards. The system of establishing targets at the central level, and then passing them down to state and district remains essentially unchanged. Targets emphasize numbers of acceptors of sterilization and IUDs, and numbers of

pieces of condoms and OCs distributed through the program. Compensation and incentives for users, and rewards to providers at the state level, continue to play an important part in the program. In addition to central support for compensation to sterilization acceptors for lost work time, individual states and districts frequently add monetary and non-monetary incentives, utilizing their own resources. Annual awards are given to the most successful states based on their performance. For this purpose, the states are divided in three categories representing high, medium, and low performance. States are selected from each of the three categories. This has created a vigorous competition amongst various states. Some states have created a very complex system of awards to providers at each level which has created an atmosphere of competition among districts, PHCs, sub-centers, and field staff. While the revised strategy document states that "it is necessary to review the entire system of individual and community incentives," the team was not advised of any such review under way.

The revised strategy document also lists a number of incentive schemes that could be considered for introduction in the program. Several of these have been tried on a limited scale, but no systematic assessment of their impact has been made. Others have not been tried. It seems clear that the effort to expand the use of spacing methods will necessitate a

modification of the target, incentive and reward mechanism, which was established primarily for the sterilization program, and is most suited to the counting of sterilization operations, rather than continued effective use of spacing methods.

o Nongovernmental organizations and organized sector. The revised strategy document calls for substantial increase in the activities with the nongovernment sector. However, no systematic approach has been developed to bring in key nongovernmental elements into the program, or to provide them with additional resources. The organized sector has for many years provided family planning services for many industrial employees and other workers. This sector has continued to receive support, but no major expansion has occurred. For example, the revised strategy document mentions the need to reach out to the 75,000 cooperatives in rural areas. This sector has yet to be exploited.

o Contraceptive manufacture and distribution. There has been a substantial effort to make oral contraceptives and condoms more widely available, and to increase local production capacity of these methods, as well as initiate IUD production. Condom manufacture has been expanded, and new products have been developed for the commercial market. Oral contraceptive tableting has been undertaken by a number of Indian pharmaceutical companies, with the bulk steroid being imported by the government. A newly

packaged oral contraceptive called MALA has been developed for use in the commercial distribution program. Copper-T 200 IUDs continue to be imported, but negotiations are underway to establish a manufacturing capacity in India.

A marketing plan for oral contraceptives, somewhat analogous to the longstanding condom marketing program, has been initiated. It is too soon to determine how effective this program will be. It is being combined with a substantial program to explain the advantages of oral contraception to providers and potential users. In both the condom and oral contraception program, attention has been given to expanded requirements for continued distribution, and the necessary logistics and supplies system needs to be strengthened to assure continuous availability of these products.

o Biomedical research. India has led in the field of biomedical research for many years, through the Indian Council of Medical Research (ICMR) and its 22 collaborating institutions throughout India. The testing of existing and new contraceptive methods has been a major component of that program, including studies on IUDs, oral contraceptives, and most recently injectable methods and the NORPLANT® subdermal implant. In the near future the government needs to review the results of both the Indian and international studies on injectables and the NORPLANT®

to determine whether these methods would be suitable for large-scale introduction in the Indian program. In each case, the intrinsic benefits and limitations of each method need to be combined with a careful assessment of their potential use within the delivery systems that exist in India. For example, the NORPLANT® method, as a provider dependent technology, requires careful training and appropriate clinical facilities. It therefore would be suitable in urban hospital and clinical settings, including postpartum centers, at least in its initial stages of introduction. The degree to which it could be made available through the existing network of PHCs would need to be carefully tested and evaluated. The ongoing ICMR trials are not sufficient for this purpose. Additional studies in rural settings would be required. Other programmatic issues surrounding these methods need to be examined in the context of the Indian health system. The ICMR is shifting its attention to these program introduction issues, as well as examining the acceptability of new contraceptive methods among different population groups in India. This shift in emphasis should provide crucially important information to the government, as it determines the future utilization of new methods, as well as expanding understanding of existing ones.

o Demographic and Operations Research. India has an extensive network of institutions engaged in demographic research and evaluation. The Family Welfare program mainly relies on service statistics to estimate contraceptive prevalence and to evaluate

the demographic impact of its activities. Data on a monthly basis are collected from all service delivery points through district and state offices. The MOHFW brings out an annual year book which provides data on program inputs and outputs up to the state level. Two independent national surveys have been conducted by the Operations Research Group (ORG) in 1970 and 1980. Program related research is conducted by the National Institute of Health and Family Welfare, the International Institute of Population Studies, and a network of Population Research Centers located in university settings in major states. Other institutions independently engaged in program related and demographic research include institutes of management and the Registrar General's office. In 1986, the government commissioned four market research groups to undertake a series of studies on the family planning program. These reports have been fed back into the strategy process, and have highlighted a number of needs for the program.

General social science research is undertaken by numerous institutions under the umbrella of the Indian Council for Social Science Research (ICSSR). However, population is rarely included among the priorities of social scientists concentrating on social and economic change in India. Work related to population is assigned to population units within various social science institutions. Very little work is currently under way to better

understand the linkages between population and development or to better understand the determinants of fertility or infant and child mortality. Most of the research in these areas have mathematical and statistical orientation and do not adequately include other social sciences disciplines including sociology and economics. The Indian Association for the Study of Population (IASP) has a network of about 400 members. It meets annually and publishes a journal bi-annually called Demography-India.

PRCs are almost completely dependent on the MOHFW for their existence. However, there is no effective mechanism to systematically review and digest their output for utilization in policy formation and program implementation. Moreover, there are no mechanisms to set agendas for research priorities and provide guidance in implementation of research studies. A number of factors have contributed to this state of affairs. Rigidity in program structure does not allow nor demand research of high quality and relevance. Persons involved in decision making and setting priorities in the MOHFW come from statistical services and do not have adequate background in demographic and social science research. The major institutes, NIHFV and IIPS, have not been able lead to create a cohesive network of PRCs and other institutions to foster quality research on the proximate and other determinants of fertility change, and on the broader interactions between population and development. The latter is parti-

cularly important for translating intentions concerning "beyond family planning" measures into actionable programs.

o "Beyond family planning" measures. The revised strategy recognizes the importance of improvement in the underlying conditions precedent to the acceptance of family planning. Particular emphasis is placed on raising the mean age at marriage for women to over 20 years; promoting the two-child family norm; enhancing child survival; raising the status of women; improving levels of female illiteracy; linkage of family planning efforts with poverty alleviation; and improving old age security. Of these various measures perhaps the most dynamic is the effort to improve child survival, which has contributed to a recent decline in the infant mortality rate from about 127 per thousand in 1978 to 110 in 1980 and 95 in 1985. These programs include expanded immunization of both young children and expectant mothers; promotion of oral rehydration therapy for treatment of diarrhoea; a nutrition intervention program; and the integrated child development scheme (ICDS) which provides MCH and nutrition services to young children and their mothers at the rural level. These child survival efforts are extremely important on their own right, and appear to be achieving some acceptance and success in many parts of the country. They are also important as they offer opportunities for effective programmatic linkage with family planning efforts at the community level. Such linkages are evident in some cases, but need strengthening.

Other activities in improving the conditions for fertility decline are being approached through other sectors of the government, including the education ministry, and through various efforts in poverty alleviation. The Ministry of Health and Family Welfare contributes through its IE&C program that stresses various of these issues, and seeks to increase popular support for them. For example, increase in age of marriage is now the subject of a series of mass media messages designed to underline the negative features of early marriage, and to urge delay.

The coordination of these various efforts, and the measurement of their likely impact, is a significant challenge. Research is required to measure the change in these various indicators over time, and to endeavor to analyze their impact on fertility.

PROGRAM ACHIEVEMENTS

In 1982, the program was struggling to overcome the backlash resulting from the policies implemented during the emergency period. In 1987, the program appears to have fully recovered and is moving ahead. The effective contraceptive prevalence rate had increased to 34.9 percent in 1985-86 but there was no concomitant decline in the birth rate during 1977-84. For the first time since 1977, the crude birth rate for 1985 declined to 32.7--a decline of about one point from its level in 1984. It is too early to say whether this reflects a beginning of a downward trend or some random fluctuation. There continues to be wide variations among states and districts in terms of contraceptive prevalence. The prevalence level in five districts (or a total of 370) had crossed the 60 percent mark in 1983-84--a goal set for the year 2000 for the entire country. There are major success stories within India; Indian program professionals do not have to look outside the country to Southeast Asia or to experimental projects such as Matlab in Bangladesh. A careful analysis and documentation of district-level successes within India is urgently needed in order to identify program strategies which could be implemented in other areas.

NATIONAL LEVEL PERFORMANCE

Tables 4 - 7 show national level data based on service statistics collected by the Department of Family Welfare. Annual

TABLE 4

Family Planning Acceptors (in 000's)
by Method 1975-76 to 1984-85

Year	Steril.	% of Total	IUD	Equiv. CC User ^a	Ster. Equiv ^b	% MWRA
1975-76	2,669	(87)	607	3,528	3,068	3.0
1976-77	8,261	(95)	581	3,692	8,663	8.2
1977-78	949	(76)	326	3,253	1,242	1.2
1978-79	1,484	(79)	552	3,459	1,865	1.7
1979-80	1,778	(82)	635	3,069	2,165	1.9
1980-81	2,053	(83)	628	3,809	2,479	2.1
1981-82	2,792	(84)	751	4,559	3,302	2.8
1982-83	3,983	(84)	1,097	5,948	4,689	3.9
1983-84	4,532	(79)	2,134	8,390	5,750	4.6
1984-85	4,082	(74)	2,562	9,812	5,553	4.4
1985-86 *	4,899	(74)	3,274	10,742	6,663	5.1

* Provisional

^a This is equivalent to couple-year protection estimated from the distribution figures for Nirodh (condom) and oral contraceptives.

^b Sterilization equivalent assumes that three IUD insertions, nine couple-years protection of pill use, and 18 couple years protection of condom use are equivalent to one sterilization.

Source: MOHFW Yearbook, 1984-85.

family planning acceptors of different methods are shown in Table 4, the ratio of vasectomy to tubectomies performed in each year are shown in Table 5, program performance in relation to targets are shown in Table 6, and annual estimates of contraceptive prevalence are shown in Table 7. The estimates of contraceptive prevalence based on service statistics usually should be treated with a great deal of caution; but a comparison of these estimates with those based on independent surveys suggest that service statistics do not grossly overestimate the contra-ceptive prevalence overall, although there may be substantial discrepancies in some states and districts.

The performance data of the family planning program for the past five years reveals important changes from the picture which emerged in 1982. At that point, the annual number of "sterilization equivalents" was a little over 2 percent of the estimated number of married women in reproductive age groups (MWRA). This figure had more than doubled by 1985-86. This growth is accompanied by a shift in balance of methods. Around 1981-82, the increasing number of sterilizations was accompanied by modest increases in the use of the IUD, pill, and conventional contraceptives, but increases in sterilization acceptances exceeded the increases in other methods. However, the period 1981-83 appears to represent the peak of this trend and the subsequent three years indicate a gradual decrease in the percentage of total contraceptive protection accounted for by sterilization (see Table 4).

TABLE 5

Numbers of Vasectomies and Tubectomies:
1975-76 to 1984-85

Year	Vasectomies (000s)	Tubectomies (000s)	V/T Ratio
1975-76	1,438	1,230	1.17
1976-77	6,199	2,062	3.01
1977-78	188	761	0.25
1978-79	390	1,093	0.36
1979-80	473	1,305	0.36
1980-81	439	1,614	0.27
1981-82	573	2,219	0.26
1982-83	585	3,398	0.17
1983-84	661	3,871	0.17
1984-85	549	3,533	0.16

Source: Yearbook, 1984-85.

During the post-emergency period, there has been a significant decline in the ratio of vasectomies to tubectomies. During the period 1977-82 the numbers of vasectomies were one-fourth to one-third of the number of tubectomies. This ratio has further declined and remained fairly constant during the past three years at .16-.17 (see Table 5). The explanation for this pattern is not straight forward. While it is clear that mass camps during the early to mid seventies clearly favored male sterilization, it is not clear that a clinic-based program which promotes both methods would favor tubectomy. It is possible to speculate as to the cause of this pattern (for example, most of those men willing to be sterilized already have been; or alternatively, the field worker - based system may favor the recruitment of female sterilization clients). However, it is asserted by program officials that this reversal represents the client preference with the introduction of laparoscopic sterilization rather than a provider bias in promoting tubectomies. This is an important area for further investigation with implications for future program needs and for client motivation.

Prior to 1982, program performance barely achieved or even approached targets set by the national government. During the past five years, the percentage of target achieved has ranged between 75 and 95%. The growth in achievement of targets of spacing

TABLE 6

Program Targets and Percentages of Targets Achieved:
1975-76 to 1985-86

Year	Sterilizations		IUD Insertions		Equivalent CC Users	
	Target	% Ach.	Target	% Ach.	Target	% Ach.
1975-76	2,492	107.1	912	66.6	4,358	89.9
1976-77	4,299	192.2	1,137	51.1	4,690	78.1
1977-78	3,990	23.8	1,000	32.6	5,000	65.1
1978-79	3,965	37.4	600	91.9	4,000	86.7
1979-80	3,049	58.3	1,149	55.2	5,003	59.7
1980-81	2,896	70.9	791	79.4	5,042	73.7
1981-82	2,896	96.4	791	94.9	5,042	88.0
1982-83	4,522	88.1	1,512	72.5	6,502	88.7
1983-84	5,900	76.8	2,500	85.4	7,900	97.0
1984-85	5,823	70.1	3,183	90.5	10,000	85.2
1985-86*	5,860	88.1	3,244	100.9	9,515	98.6

* Provisional

Source: Yearbook 1984-85.

methods is especially encouraging (see Table 6). As in the past, there is wide variability among the various states in achievement of targets by method. However, in general, sterilization targets were achieved by substantially more states in 1984-85 than in 1980-81. For example, 1980-81, no states achieved their targets for sterilizations or OCs. In contrast, in 1984-85 there were 12 states which achieved 95% or more of their sterilization targets. There were eight states which achieved 95% or more of their IUD targets, and there were seven states achieving 95% or more of their pill targets (MOHFW, 1985 pp. 151-153).

Estimates of contraceptive prevalence derived from program performance data for the past decade are presented in Table 7. During the year following the emergency period, the effective prevalence actually declined, and then remained at a plateau of slightly over 22% for the subsequent four years. At the time of the 1982 assessment, provisional data indicated a slight increase in prevalence for 1981-82, but the increase was small and there was no way to predict whether a sustained rise in prevalence would follow. In fact, 1981-82 was the first year during which contraceptive prevalence reached the same level as achieved during the 1976-77 year. The data which are now available for the subsequent years present a picture of substantial growth in prevalence. Despite a growth in the absolute number of MWRA, an increasing percentage of these women have been effectively protected. By 1985-86, about 35 percent of MWRA were estimated to be protected.

TABLE 7

Estimates of Contraceptive Prevalence from Program Data:
1976-77 to 1985-86

Year	% Protected ¹				% Effectively Protected ²			
	Ster.	IUD	CC	Total	Ster.	IUD	CC	Total
1976-77	20.7	1.1	3.4	25.3	20.7	1.1	1.8	23.6
1977-78	20.1	.9	3.0	24.0	20.1	.9	1.5	22.5
1978-79	19.8	1.0	3.1	23.9	19.8	.9	1.6	22.3
1979-80	19.8	1.0	2.7	23.5	19.8	1.0	1.4	22.2
1980-81	20.0	1.1	3.3	24.3	20.0	1.0	1.7	22.7
1981-82	20.6	1.2	3.8	25.6	20.6	1.1	2.0	23.7
1982-83	22.0	1.4	4.9	28.4	22.0	1.4	2.5	25.9
1983-84	23.7	2.3	6.8	32.8	23.7	2.2	3.7	29.6
1984-85	24.9	3.0	7.8	35.8	24.9	2.9	4.4	32.3
1985-86*	26.5	3.9	8.3	38.7	26.5	3.7	4.7	34.9

* Provisional

- ¹ Couples currently protected refer to end of the fiscal year (March 31). They are based on data on annual acceptors of sterilization, IUD insertions, and distribution of Nirodh and pills. Attrition rates are applied to sterilization and IUD acceptors which take into account their age distribution, joint survival ratios of husbands and wives in different age groups, and termination of IUD use. Average annual attrition rate for IUDs is now at 37.6%. Annual attrition rates for vasectomy and tubectomy increases with every five year period following the operation from 4.11% to 33.5% for vasectomy and from 2.72% to 53.8% for tubectomy.
- ² Couples effectively protected are arrived at by multiplying the couples currently protected by the level of use effectiveness. Sterilization and Pills are assumed to be 100% effective, IUDs 95%, and convention contraceptive (condoms) to be 50% effective.

Source: MOHFW, 1985 p. 187.

It is important to assess the accuracy of estimates of prevalence based on service statistics concerning insertions of IUDs and distribution of condoms and pills. This can be done on the basis of two independent nationwide surveys conducted by the Operations Research Group in 1970 and 1980. The 1970 survey found a national prevalence of 13.6 but only 9.7 percent of the couples reported use of modern methods. This contrasted with a prevalence of 11.7 percent estimated on the basis of program data. The 1980 survey found that 35 percent of the respondents were using family planning methods, including 28 percent who were using modern (sterilization, IUDs, condom, pill, etc.) methods, and 7 percent who were using traditional (rhythm, abstinence, etc.) methods. The 1980 survey disproportionately missed younger married women. After making adjustment for this difference, the 1980 survey-based estimate of use of modern methods reduced to 26.3 percent in comparison to 24.3 percent based on service statistics. The survey gave a higher estimate of the users of conventional contraceptives, which is possible because the survey included users of contraception from any source whereas estimates based on distribution data naturally include only users from MOHFW program sources.

ACCESSIBILITY OF SERVICES

In 1984, there were 5,461 rural family welfare centers to serve 102.1 million rural eligible couples and 2,648 urban centers to serve 23.9 million urban couples. On the average,

there was one center for every 18,696 rural couples and one center for every 9,026 urban couples. Although the rural density of centers is slightly lower than in 1979-80, the number of sub-centers was increased to reach 74,236 by 1984, a dramatic increase over the 46,564 level in 1979. Thus in 1984, there was an average of one sub-center for 1,375 rural couples. Of the 6327 "required" medical officers in rural areas 5,395 or 85 percent had actually been posted in 1984-85, covering an average of 18,925 couples each. In urban areas, of 2,371 posts for medical officers, only 1,466 or 62 percent were filled, providing one medical officer for every 16,300 couples.

There are a number of special programs in the urban areas which supplement the work of the FWCs. The postpartum program had established 554 centers by January 1985, primarily in district and teaching hospitals where family planning services are offered to obstetric and post-abortion cases. There is one postpartum center for every 43,140 urban couples. During 1984-85 these centers served 1,093,000 OB cases and 370,000 AB cases (spontaneous abortions plus MTPs). Thus the total number of OB and AB cases per reporting center was 2,641. These centers reported a total of 840,000 acceptors, of which 457,000 were "direct" (cases who accepted within three months postpartum or postabortion). Thus 31 percent of the deliveries or abortions in these centers were followed within three months by acceptance of family planning.

The second special program that increases the access of urban couples to contraceptives is the Nirrdh Marketing Program. This program subsidizes the sale of condoms through outlets primarily in the urban areas. These outlets sold 199.3 million condoms in 1984-85. According to MOHFW, this would provide 2.8 million couple years of protection (or equivalent number of conventional contraceptive users).

The third special program is the MTP Program. It should be noted that the government does not consider this program to be a part of the family planning program. Since MTP is performed only by a qualified physician in a government hospital, its impact is predominantly limited to the urban areas. The total number of MTP centers as of 1984 was 4,918, which works out to one for every 4,860 urban couples. These centers perform about one-half million MTP cases annually.

Information about family planning is made broadly available through a variety of activities. The sixth Five-Year Plan called for the training of Village Health Guides (VHG) to provide family planning services at the village level. The number of these VHG who have been trained has more than doubled since 1980. As of January, 1984 there were 343,069 volunteers in position. However, very little is known about the frequency with which potential users are being contacted, and the content of these contacts. The quality and content of the client-provider

relationship will be a crucial element in determining the extent to which the government will succeed in introducing spacing methods.

DIFFERENTIALS IN PERFORMANCE

Although the Indian Family Welfare program is centrally planned, directed, and financed, the states retain major responsibility for implementation. Not surprisingly, there is great diversity in the performance of the various states. Table 8 shows the prevalence and effective prevalence figures as of March 31, 1985 for the 17 largest states and the territory of Delhi. The unadjusted prevalence rates range from 14.9 (Jammu & Kashmir) to 54.2 for Maharashtra and 57.4 for the Punjab. Effective prevalence rates were somewhat lower, ranging between 14.5 and 51.6. Method mix varied as well, with certain states (Delhi, U.P., Punjab and Haryana) relied much less heavily on sterilization than others.

Table 9 shows changes in effective contraceptive prevalence over the last five years. Data for 1976-77 are shown for comparison purposes. The all-India figure for 1976-77 was subsequently revised downward to 23.6 (see Table 7). Similar revised prevalence figures for each state are not available. Therefore we have shown the original estimates. As mentioned earlier, 1981-82 was the first year during which the national estimate of contraceptive prevalence reached the level achieved in 1976-77. The

TABLE 8

Estimated Prevalence and Effective Prevalence Levels by Major States
and Method Mix, March 1985

States	Eligible Couples (000)	Unadjusted Prevalence %	Effective Prevalence %	% of Users Relying on		
				Sterilization	IUD	Other
Andhra Pradesh	10,384	33.2	32.3	90	3.3	6.7
Assam	3,244	26.8	24.7	81	3.7	15.3
Bihar	14,118	17.1	16.8	91	5.5	3.5
Gujarat	6,089	48.2	44.3	74	9.2	16.8
Haryana	2,272	56.7	47.2	51	16.3	32.7
Himachal Pradesh	799	36.1	34.4	81	10.0	9.0
Jammu & Kashmir	1,107	14.9	14.5	85	9.9	5.1
Karnataka	6,620	34.2	32.5	81	8.6	10.4
Kerala	3,800	41.2	40.0	89	4.7	6.3
Madhya Pradesh	10,059	32.2	29.4	75	6.5	18.5
Maharashtra	11,607	54.2	51.6	75	14.3	10.7
Orissa	4,934	32.4	31.0	85	6.1	8.9
Punjab	2,591	57.4	50.4	52	24.9	23.1
Rajasthan	6,759	20.7	19.5	82	6.0	12.0
Tamil Nadu	8,683	36.8	36.2	93	4.0	3.0
Uttar Pradesh	21,264	18.8	16.7	59	18.2	18.8
West Bengal	8,939	29.6	29.0	92	3.2	4.8
Delhi	1,116	43.7	37.8	55	19.6	25.4
INDIA	126,073	35.8	32.3	70	8.5	21.7

TABLE 9

Percent Couples Effectively Protected by Major States During 1976/77 to 1985/86

States	1976/77	1981/82	1982/83	1983/84	1984/85	1985/86	Change	
							1981/82-1985/86 Absolute	%
Andhra Pradesh	26.7	27.2	28.4	30.5	32.3	34.5	7.3	27
Assam	23.2	18.3	18.6	20.9	24.7	25.4	7.1	39
Bihar	14.0	12.2	13.7	15.8	16.8	18.9	6.7	55
Gujarat	28.9	34.9	36.9	39.7	44.3	48.2	13.3	38
Haryana	43.5	28.6	31.5	40.2	47.2	52.1	23.5	82
Himachal Pradesh	29.9	26.0	28.6	31.3	34.4	39.9	13.9	53
Jammu & Kashmir	12.0	10.8	12.1	13.5	14.5	18.2	7.4	69
Karnataka	22.2	24.7	26.7	29.2	32.5	36.3	11.6	47
Kerala	30.3	32.0	33.5	36.3	40.0	40.0	9.1	28
Madhya Pradesh	24.9	21.8	23.6	27.2	29.4	31.9	10.1	46
Maharashtra	37.6	36.7	40.0	48.1	51.6	53.1	16.4	45
Orissa	25.8	26.1	27.5	29.8	31.0	34.7	8.6	33
Punjab	30.8	27.4	34.5	42.9	50.4	53.5	26.1	95
Rajasthan	15.3	14.5	15.7	17.9	19.5	23.1	8.6	59
Tamil Nadu	29.5	27.7	28.4	32.1	36.2	41.1	13.4	48
Uttar Pradesh	14.1	11.3	13.1	15.5	16.7	20.6	9.3	82
West Bengal	26.6	24.4	25.7	28.0	29.0	28.4	4.0	16
Delhi	43.9	36.5	37.4	37.9	37.8	36.4	-0.1	-
INDIA	24.4*	23.7	25.9	29.6	32.3	34.9	11.2	47

* Subsequently revised to 23.6. Revised data for states are not available.

last two columns show the absolute and percent changes in the contraceptive prevalence rates during the five-year period since 1981-82.

The states of Haryana, Punjab, and Maharashtra have crossed the 50 percent mark and the state of Gujarat with 48 percent effective prevalence is not too far behind. Himachal Pradesh, Kerala, and Tamil Nadu are in the 40 percent range followed by Andhra Pradesh, Karnataka, Orissa, and Delhi in the 35 percent range. Assam, Bihar, Jammu & Kashmir, Rajasthan, and Uttar Pradesh are the lowest in contraceptive prevalence, with around 25 percent or less.

The states of Haryana and Punjab gained about 25 points in prevalence during the five-year period since 1981-82. This represents an increase of 82 percent in Haryana and 95 percent in Punjab. Another state with impressive gain is Uttar Pradesh--an 82 percent gain. The lowest gain in terms of absolute change as well as percent change in prevalence is West Bengal. Notably, Delhi did not register any increase in the effective contraceptive prevalence rate during the last five years. This is especially surprising given its proximity to the Ministry of Health and Family Welfare and its structure in terms of governmental employees and urban character. On the other hand, it is possible that the service statistics underestimate the actual use of conventional contraceptives because it does not include contraceptives supplied by the private commercial sector.

This would be especially pertinent for metropolitan areas like Delhi. Comparison of the 1980-81 prevalence data with data from the 1980 ORG survey provides some indication of the extent of underestimation of contraceptive prevalence in Delhi. The contraceptive use according to the 1980 ORG survey in Delhi was about 49.4% in comparison to 44.8% estimated from the service statistics. The use of sterilization and IUDs according to the survey were lower than the government estimates (21% vs. 23% for sterilization and 2.9% vs. 5.5% for IUDs). On the other hand, the use of conventional contraceptives according to the survey was higher than the government estimates (25% vs. 16%). These differences are consistent with the hypothesis that especially in metropolitan areas the government statistics can underestimate the use of conventional contraceptives.

Information about contraceptive prevalence at the district-level became publicly available for the first time recently. These data were available for March 1984. A distribution of 370 districts according to the level of contraceptive prevalence for each state and all India are shown in Table 10. It can be seen that the level of contraceptive prevalence varies greatly not only among states but also among districts within each state. The level of prevalence among all districts varies from 4 percent to 63 percent--a spread of 1 to 16. In 1983-84, the prevalence in five districts had crossed the 60 percent mark--a goal set for the year 2,000 for the entire country.

TABLE 10

Number of Districts by Percent of Couples Protected on March 31, 1984 by States

Couples Protected on March 1984	Andhra Pradesh	Bihar	Gujarat	Haryana	Himachal Pradesh	Jammu & Kashmir	Karana- taka	Kerala	Madhya Pradesh	Maha- rashtra	Orissa	Punjab	Rajasthan	Tamil Nadu	Uttar Pradesh	West Bengal	INDIA
0						8		1					2		2		13
5		14				3			2				3		34		56
10	2	10				2		2	7				14		13	3	53
15	4	7			2		5	1	12				7	1	6	1	47
20	6	2	2		3		3	1	9				8	3	1	3	41
25	6		3	2	4	1	8	1	12				2	6		9	54
30	4		9	5	3		4		3	4	1	2		2		1	38
35	1			3						6	1	5		3		1	20
40			2	2				3		6		4		1			18
45			4					1		12		1					18
50			1					1		5							7
55			2					2		1							5
60																	
65																	
70																	
75																	
80																	
85																	
90																	
95																	
100	23	33	23	12	12	14	20	13	45	34	13	12	26	16	56	18	370
Mean	19.6	11.3	25.9	34.2	22.6	4.2	22.0	6.2	12.8	35.2	23.9	38.0	7.6	23.5	9.8	15.0	4.2
Median	41.3	28.9	62.7	46.9	37.6	31.0	39.0	60.8	39.5	56.0	41.7	50.0	24.5	46.2	25.1	41.3	62.7
Geometric Average	30.5	15.8	39.7	40.2	31.3	13.5	29.2	36.3	27.2	48.0	29.8	42.9	17.9	32.1	15.5	28.0	29.2

Another 25 districts had crossed the 50 percent mark in 1983-84 and most of them must be close to the 60 percent mark in 1986-87. Thus in 1987, there may be as many as 30 districts which have achieved the goal set for the year 2,000. Moreover, all the districts are not concentrated in Kerala but are spread among other states including Gujarat, Kerala, Maharashtra, and Punjab.

Even in the state of Uttar Pradesh, the range among districts is close to 1 to 3. The prevalence in 1984 varied from about 10 percent to 25 percent. The differences have widened in the subsequent years. In 1986, the prevalence level varied from 14 to 36 percent (see Table 11).

CAUSES OF DIFFERENTIAL PERFORMANCE

Relationships of performance to density of program inputs and socio-economic conditions at the state level are summarized in Tables 12 and 13. States in these tables are arranged according to the level of effective prevalence in 1984-85. There is considerable variation among states in terms of density of program inputs and socio-economic conditions. However, variations in program performance appears to be largely attributable to socio-economic conditions, especially female literacy, urbanization, and infant mortality. The relationship between program inputs and performance is quite weak.

A crucial question for policy makers and service delivery strategy is the relationship (or lack of it) between density of

TABLE 11

Number of Districts in U.P. by Percent of Couples Protected
on March 31, of 1984, 1985, and 1986

% Couples Protected	March 1984	March 1985	March 1986
<10	2	2	
10-15	34	22	2
15-20	13	18	27
20-25	6	11	14
25-30	1	4	8
30-35			4
35+			1
Total	56	56	56
Minimum	9.8	10.0	14.4
Maximum	25.1	28.0	36.2
State Average	15.5	16.2	20.4

inputs (measured as staff and physical facilities per eligible couple) and program performance (measured as effective prevalence). In 1979, the density of family welfare centers showed little relationship to performance, but the density of rural sub-centers and rural staff in relation to eligible couples was clearly related to prevalence levels, although the pattern was by no means uniform. By 1984-85 the picture is even less clearcut. In general, density of service centers and of staff was considerably higher than the 1979. Punjab, which experienced a remarkable increase in contraceptive prevalence from 25 percent in 1980 to 52 percent in 1985 not surprisingly ranks high in both rural subcenter density and density of rural staff. However, in other cases the same pattern is not seen. In Haryana, for example there was a gain in contraceptive prevalence from 30.3 percent in 1980 to 47.2 percent in 1984-85; however, rural staff density was relatively low and density of facilities was only moderate. In contrast to the relationship observed in 1980, density of service centers appears to be more strongly related to effective prevalence than density of staff. The weak relationship between these program inputs and output may, in part, reflect the fact that these inputs are prescribed on a more or less uniform basis in all states. Moreover, these indices of inputs do not measure the actual performance of the staff in terms of their outreach activities, including frequency and content of contacts with couples. These indices do not even indicate the extent to which the staff was present at the PHCs and sub-centers or the extent to which these service delivery points were utilized by people for health care--curative or preventive.

TABLE 12

Density of Family Welfare Facilities and Staff as of April 1, 1984
By States Arranged by 1984/85 Performance

States	Effective Prevalence 1984/85	Total FW Centers per million Couples (Rural plus Urban)	Per Million Couples in Rural Areas Only	
			Subcenters	Staff
Maharashtra	51.6	61	852	599
Punjab	50.4	72	1,370	1,017
Haryana	47.2	57	933	678
Gujarat	44.3	73	1,287	1,940
Delhi	37.8	131	525	564
Tamil Nadu	36.2	75	1,010	309
Himachal Pradesh	34.4	111	1,360	2,242
Karnataka	32.5	62	1,046	710
Andhra Pradesh	32.3	61	775	840
Orissa	31.0	71	960	1,414
Madhya Pradesh	29.4	62	827	724
West Bengal	29.0	59	977	1,024
Assam	24.7	65	590	392
Rajasthan	19.5	57	715	679
Bihar	16.8	47	621	456
Uttar Pradesh	16.7	55	836	784
Jammu & Kashmir	14.5	94	498	1,558

Evidently better measures of program inputs are required.

No attempt is made in this report to ascertain relative contributions of various socio-economic and demographic factors to the variations among states in program performance. A number of such exercises have been undertaken during the 1970s and early 1980s. A recent multiple regression analysis has indicated that variations in state-level performance are primarily explained by the variations in their level of infant mortality rates. The effects of female literacy and urbanization on the use of contraception appears to be transmitted through infant mortality (Jain, 1985). These results may suggest that as far as the use of contraception is concerned, it can increase even without an increase in female education or urbanization, provided that the high incidence of infant mortality is brought down in all strata of the population, including among mothers without schooling as well as among those living in rural areas. Improvement of female education and increase in urbanization, nevertheless, would independently contribute to the increased use of contraception primarily because educated women and people living in urban areas do have lower infant mortality in comparison to their rural counterparts. Moreover, these two factors also contribute to lower fertility by increasing age at marriage.

Given the large variations within states, it is important to better understand the relative roles of program inputs and socio-

TABLE 13

Selected Indicators of Socio-Economic Conditions by Major States;
Arranged by 1985 Performance Levels

State	Effective Prevalence 1984/85	Per Capita State Domest. Product 1983/84	Literacy 1981		Percent Urban (1981)	Infant Mortality Rate (1982)
			Males %	Females %		
Maharashtra	51.6	3,032 H ¹	59 H ²	35 H ³	35 H ⁴	70 L ⁵
Punjab	50.4	3,801 H	47	34	28	75 L
Haryana	47.2	3,147 H	48	22 L	22	93
Gujarat	44.3	2,795 H	55 H	32	31 H	111 H
Kerala	40.0	1,760	74 H	64 H	19 L	30 L
Delhi	37.8	3,314 H	68 H	53 H	93 H	55 L
Tamil Nadu	36.2	1,827	57 H	34	33 H	83
Himachal Pradesh	34.4	2,230	52 H	31	8 L	68 L
Karnataka	32.5	1,957	49	28	29	65 L
Andhra Pradesh	32.3	1,878	39 L	39 H	23	79
Orissa	31.0	1,339* L	47	21 L	12 L	132 H
Madhya Pradesh	29.4	1,636 L	39 L	16 L	20 L	134 H
West Bengal	29.0	2,231	50 H	30	26	86
Assam	24.7	1,762 L	N.A.	N.A.	10 L	103 H
Rajasthan	19.5	1,881	36 L	11 L	21	97
Bihar	16.8	1,174 L	38 L	14 L	12 L	112 H
Uttar Pradesh	16.7	1,567 L	39 L	14 L	18 L	147 H
Jammu & Kashmir	14.5	1,820	N.A.	N.A.	21	68 L

¹ H > 2,500 ² H > 50 ³ H > 35 ⁴ H > 30 ⁵ H > 100
L < 1,800 L < 40 L < 25 L < 20 L < 75

economic factors in explaining the observed variations among districts. There is very little information on this subject. An important effort in this direction has been made by Jolly (1986). He used a number of social and economic factors to explain district level variations in two measures of program performance--the cumulative acceptance rate 1969-80, and percent of couples effectively protected around 1980. However, he had no information about program inputs without which such analysis is of limited use for program service strategy. Nevertheless his analysis indicates that a set of social and economic factors explain about 42 percent of the inter-district variations in the percent couples effectively protected around 1980. The district level contraceptive prevalence rises with an increase in the level of urbanization, female literacy, female participation in economic activities, and percent commercial crops. It declines with an increase in the Gini coefficient indicating economic inequality and percent non-Hindu population. This type of analysis needs to be repeated periodically. For example, by using contraceptive prevalence rate around 1985 and incorporating 1980 census data on socio-economic factors as well as selected program-relevant factors, program managers can better understand their relative contributions in different social and economic environment.

As mentioned earlier, there are a number of districts which have crossed a contraceptive prevalence rate of 50 percent and even 60 percent--a goal set for the entire country for the year

2,000. A careful analysis and documentation of experiences in these districts is essential to identify strategies which have worked and can be adapted to other districts with different social and economic situations. Independent studies are required first to establish the validity of these estimates of contraceptive prevalence, and then to establish the extent to which a prevalence of 60 percent is sufficient to achieve the demographic goals of a NRR of 1 and birth rate of 21 per 1,000 population, as envisioned in the plan documents. Other issues relevant to program performance include the identification of program input factors including quality of services and socio-economic and other environmental factors which might be responsible for this level of performance. Some of these program input factors should then be tried in other districts to estimate the response rates under different socio-economic conditions. In other words there is a wealth of experience within India from which one can learn and then apply this knowledge elsewhere to achieve the stated objectives.

IMPACT UPON FERTILITY

As mentioned earlier, the effective contraceptive prevalence rate in India has increased from about 10.4 percent in 1970-71 to 34.9 percent in 1985-86. What has been its effect on fertility? The data on birth rates are provided through indirect estimates based on two consecutive censuses and on an annual basis based on the Sample Registration System (SRS). Additional information on other fertility measures is also available from two special

surveys conducted by the Registrar General of India in 1972 and 1979. Putting together this information to arrive at a consistent picture of fertility changes is not easy. However, it can be said that the crude birth rate in the 1950s was of the order of 45 and that it declined to about 40-42 in the 1960s and to about 37-38 in the 1970s (see Figure 1). The annual estimates of CBR based on SRS also showed a decline from about 37 in 1971 to 33 in 1977. But the CBR has remained constant at about 34 between 1979 and 1984. The data for 1985 for the first time since 1979 show a decline of one point in CBR to a level of 32.7. A lack of decline in CBR between 1977 and 1982 is consistent with no observed increase in contraceptive prevalence. However, a lack of decline in CBR during 1982 and 1984 in spite of an increase in contraceptive prevalence raises questions about the accuracy of two sets of figures. Alternatively, as explained below, it could also reflect the effect of other substantial changes in traditional practices such as breastfeeding.

Fertility is determined by a set of socio-biological factors, known as intervening or proximate determinants, including marriage patterns, postpartum infecundability, use of contraception including sterilization, and the use of induced abortion. Fertility levels are found to increase with a decrease in postpartum infecundability associated with a decrease in the incidence, intensity, and duration of breastfeeding; and with a decrease in the incidence of widowhood. Thus changes in breastfeeding patterns and widowhood would tend to increase fertility in a society. Fertility levels are found to decrease with an

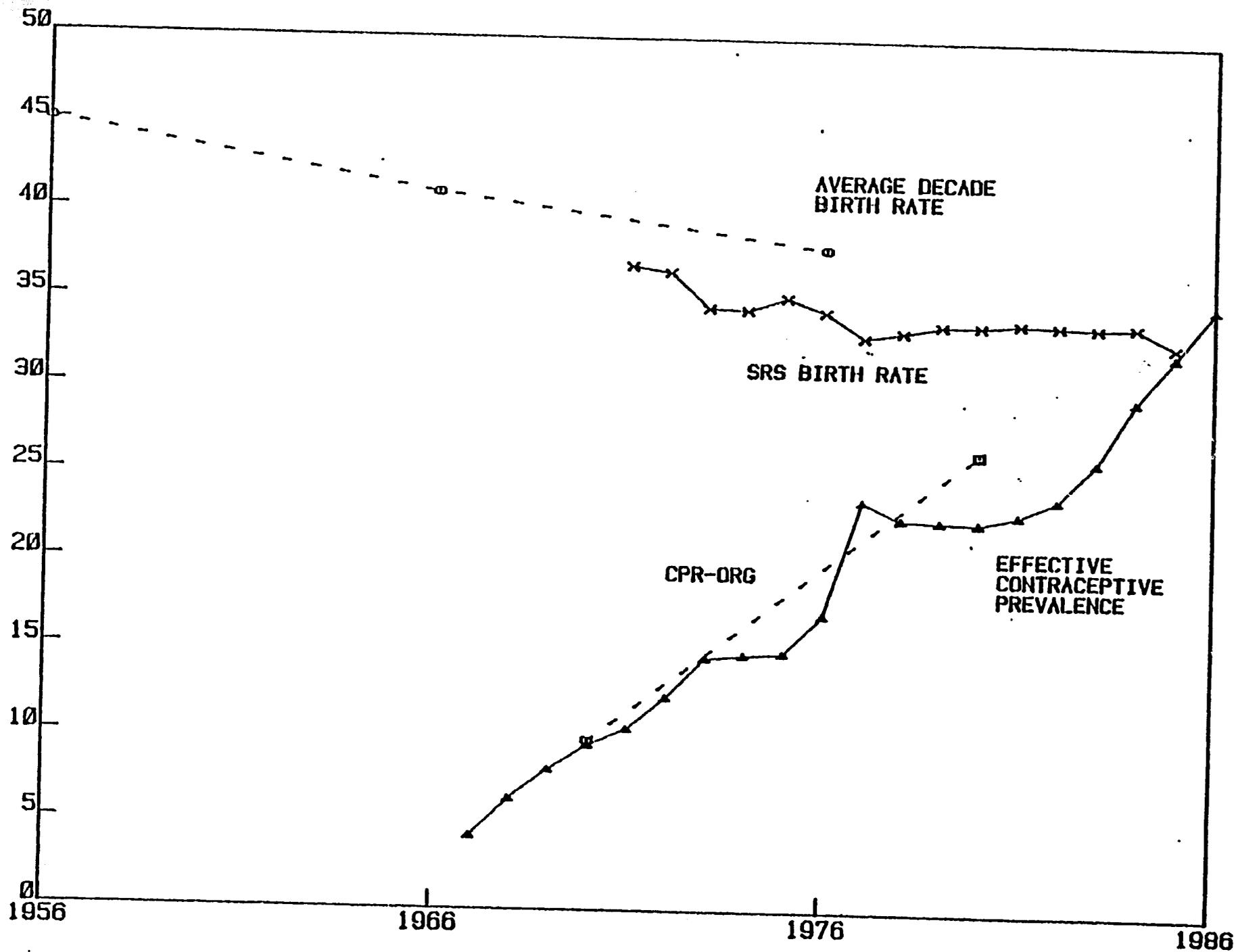


FIGURE 1: ESTIMATED BIRTH RATE AND CONTRACEPTIVE PREVALENCE IN INDIA

increase in female age at marriage, the use of contraception, and the use of induced abortion. Some of these proximate factors, therefore, have positive and others have negative effects on fertility. However, international analysis indicates that trends in fertility are primarily determined by changes in the use of contraception. In general, changes in other factors balance out the negative and positive influences on fertility (Bongaarts and Kirmeyer, 1982). This, however, need not be true in a particular situation.

In India, data on breastfeeding and postpartum infecundability at the national or state levels are practically nonexistent. Any statement about trends in these two factors would merely be a speculation based on anticipated and actual changes in other factors such as female education and urbanization. For example, in areas covered by the Integrated Child Development Scheme (ICDS) women are encouraged to introduce supplementary solid and semi-solid food around four to six months postpartum and not to depend exclusively on breastfeeding. Changes in infant feeding practices along these lines are essential to enhance child survival, but at the same time they may well reduce the fertility inhibiting effect of breastfeeding. This would result in an increase in fertility unless these changes are compensated by the adoption of contraception to maintain the original period of spacing between births.

Information about the prevalence and use of induced abortions, especially in rural areas, is also very scanty. The only available information refers to the number of MTP cases performed in government-approved facilities. The annual number of MTP cases has increased from about 250,000 in 1977-78 to 573,000 in 1984-85. However, this level of induced abortions is unlikely to have any measurable impact on fertility because in part it may reflect substitution for some of the large but undocumented number of illegal abortions and because the prevalence of legal abortions is still quite low: one abortion for 50 births.

Female age at marriage in India has been increasing continuously but gradually. According to censuses, the singulate mean age at marriage increased at about one year per decade from 15.3 years in 1951 to 18.3 in 1981. These changes are not substantial. It is estimated that changes in marital patterns between 1971 and 1981 could have contributed to a maximum of about 3 percent decline in the total fertility rate during this period (Jain, 1984).

The relationship between the effective contraceptive prevalence and crude birth rate in India is much weaker than that observed at the international level. It is assumed that the contraceptive prevalence in a fiscal year will affect the birth rate nine months later; i.e., the effective contraceptive prevalence for April 1980 to March 1981 will affect the birth rate

of 1981. With this assumption, the correlation coefficient between the two indices from 1971 to 1985 is -0.85 and the regression equation is: $Y = 37.6 - 0.16X$. In comparison, the correlation coefficient between contraceptive use and crude birth rate for 32 developed and developing countries was found to be -0.94. The regression equation of birth rate (Y) on contraceptive use found by Nortman (1982) was: $Y = 48.4 - 0.44X$.

The state-level data for two time periods 1981 and 1985 and changes during this period are shown in Table 14 and Figure 2. The correlation coefficient between 1985 CBR and effective prevalence for 1984-5 works out to be -0.52 and the regression equation is: $Y = 38.76 - 0.21X$. The correlation coefficient for 1981 data is -0.54 and the regression equation is: $Y = 39.4 - 0.29X$. The three equations for the India data are more or less consistent and suggest that not only the effect of contraceptive use is weak in India it is getting weaker over time. The regression coefficient decreases from -0.29 in 1981 to -0.21 in 1985. This is further confirmed by considering the relationship between the absolute decline in the birth rate (y) and the absolute increase in the effective contraceptive prevalence (x); the correlation coefficient between the two works out to be -0.098 and the regression equation is: $y = -0.90 - 0.023x$.

The regression coefficient in the Indian equation for 1985 implies that a decline of one point in CBR would require an

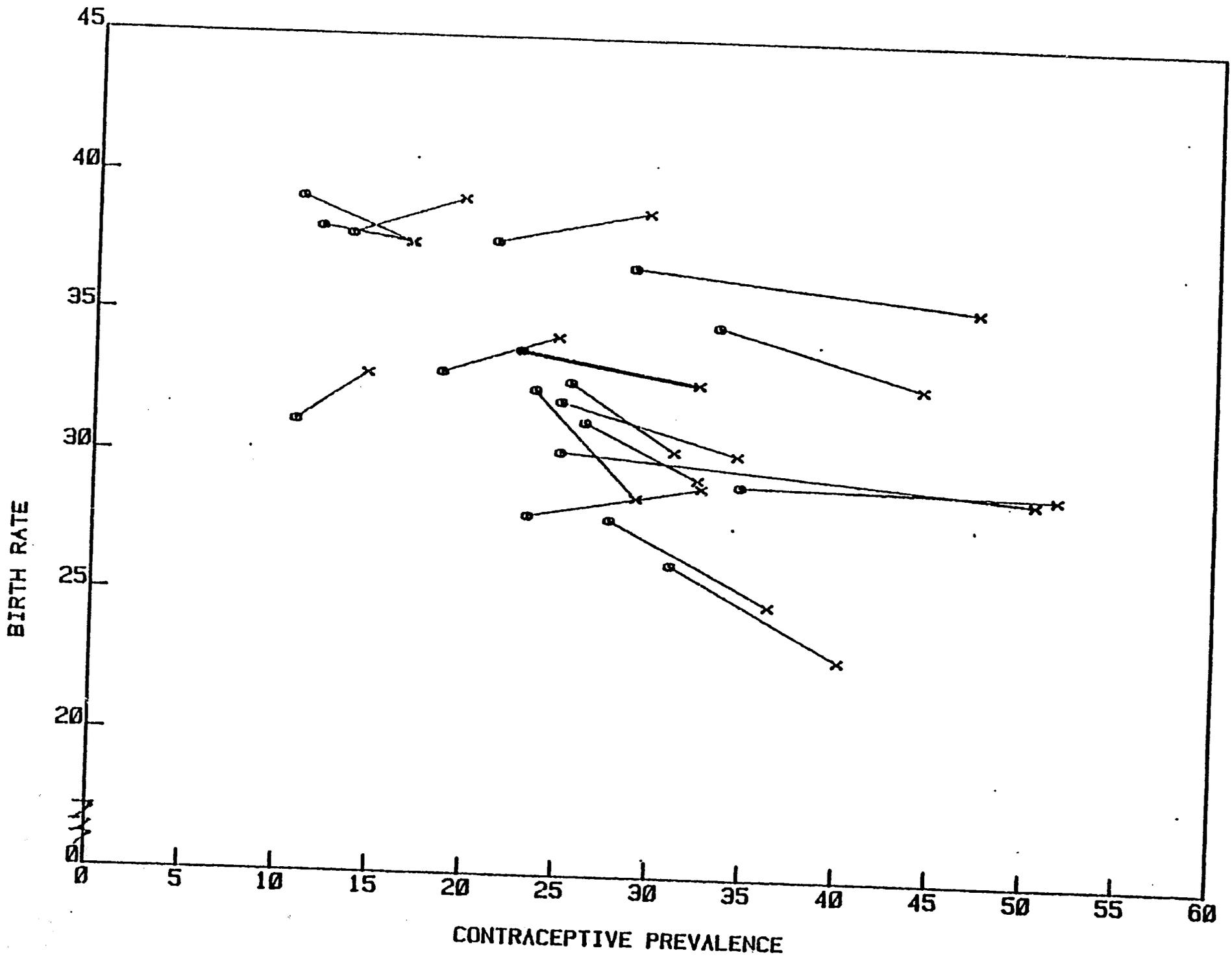


FIGURE 2: CHANGES IN STATE-LEVEL CONTRACEPTIVE PREVALENCE AND BIRTH RATE DURING 1981-1985

TABLE 14

State Level Estimates of Effective Contraceptive Prevalence
Crude Birth Rates for 1981 and 1985

States (1)	1981		1985		Absolute Change 1981-85	
	Contraceptive Prevalence March 1981 (2)	Crude Birth Rate 1980-1982 (3)	Contraceptive Prevalence March 1985 (4)	Crude Birth Rate 1985 (5)	Contraceptive Use (6)	Crude Birth Rate (7)
Andhra Pradesh	26.2	31.3	32.3	29.3	6.1	-2.0
Assam	18.5	33.0	24.7	34.3	6.2	+1.3
Bihar	11.9	38.1	16.8	37.6	4.9	-0.5
Gujarat	33.3	34.8	44.3	32.7	11.0	-1.9
Haryana	28.7	36.8	47.2	35.5	19.5	-1.3
Himachal Pradesh	24.9	32.0	34.4	30.2	9.5	-1.8
Jammu & Kashmir	10.7	31.2	14.5	32.9	3.8	+1.7
Karnataka	23.2	27.9	32.5	29.0	9.3	+1.1
Kerala	30.9	26.2	40.0	22.9	9.1	-3.3
Madhya Pradesh	21.3	37.7	29.4	38.8	8.1	+1.1
Maharashtra	34.6	29.1	51.6	28.9	17.0	-0.2
Orissa	25.4	32.7	31.0	30.3	5.6	-2.4
Punjab	24.9	30.2	50.4	28.7	25.5	-1.5
Rajasthan	13.5	37.9	19.5	39.2	6.0	-1.3
Tamil Nadu	27.6	27.8	36.2	24.8	8.6	-3.0
Uttar Pradesh	10.8	39.2	16.7	37.6	26.8	-1.6
West Bengal	23.5	32.4	29.0	28.6	5.5	-3.8
INDIA	22.7	33.8	32.3	32.7	9.6	-1.1

increase of about 5 percentage points in the effective contraceptive prevalence. If that is the case, a level of 60 percent effective contraceptive prevalence would result in a birth rate of about 26 instead of 21 envisaged in the plan documents. In other words, in order to reach a birth rate of 21 by the year 2,000, the effective contraceptive prevalence would have to be raised to about 84 percent, instead of 60 percent envisaged in the plan documents. The long-term estimates are consistent with the relationship observed in 1981 which implies an increase of a little over 3 percent in contraceptive use required for a decline of one point in birth rate.

A close look at the state level data for contraceptive prevalence and the 1985 CBR shown in Table 14 indicate that in a number of states the two values are not consistent with each other. The contraceptive prevalence rates in Gujarat, Haryana, Maharashtra and Punjab are too high in comparison to birth rates. At the other extreme are Jammu and Kashmir and West Bengal in which the birth rates are too low in view of the low contraceptive prevalence rates. In Assam, Jammu and Kashmir, Karnataka, and Madhya Pradesh, contraceptive use as well as the birth rate went up between 1981 and 1985. In Haryana, Maharashtra, and Punjab an increase of 17 to 26 percent in contraceptive use resulted in a decline of 0.2 to 1.5 points in birth rates. These type of changes are highly unlikely.

Evidently something is not correct. The weak correlation between contraceptive use and birth rate and, therefore, the observed lack of decline in the CBR during the last ten years (1975-85) can be due to a number of reasons. First, the official statistics may overestimate the actual level of contraceptive prevalence in general, as well as for selected states in particular. Second, the composition of acceptors may be skewed toward older ages with lower than average potential fertility. Third, the official statistics may differentially underestimate the level of the birth rate. Fourth, changes in certain traditional practices such as breastfeeding would reduce their fertility inhibiting effect and thus would tend to increase fertility and reduce the magnitude of the relationship between contraceptive use and fertility. A detailed analysis is required to disentangle these factors, which is outside the scope of this report. However, the state-level inconsistencies noted above confirm that the birth rate estimates in some states are grossly underestimated and the contraceptive use estimates in others are grossly overestimated. This does not rule out the presence of the confounding effect of changes in postpartum behavior affecting fertility.

Exclusion of six states (Gujarat, Haryana, Jammu & Kashmir, Maharashtra, Punjab and West Bengal) raises the correlation coefficient between the 1985 CBR and contraceptive prevalence to -0.94 and the regression equation turns out to be $y = 51.38 - 0.68X$. Exclusion of at least four of these states also improves

both the correlation and regression coefficients. For example, exclusion of Gujarat, Haryana, Maharashtra and Punjab raises the correlation coefficient to -0.85 and the regression equation becomes: $Y = 46.88 - 0.55X$; exclusion of Gujarat, Haryana, Jammu & Kashmir, and West Bengal raises the correlation coefficient to -0.77 and the regression equation becomes: $Y = 43.41 - 0.37X$. These equations suggest that with some exclusions, the relationship between contraceptive use and birth rate in India becomes more comparable with the international experience.

In order to arrive at a somewhat consistent picture, it is important to institute periodic independent surveys at an interval of about five years, which would provide at least state-level and national estimates of fertility and its proximate determinants, especially postpartum practices (e.g., breastfeeding and abstinence) and contraceptive use including sterilization and abortion. It would be also important to obtain this type of information for a number of selected districts if not all. Without these types of independent information, it remains difficult to monitor the progress of the family planning program and its impact on fertility.

CONSTRAINTS

This section identifies some of the important constraints faced by the government in achieving its desired demographic objectives. For the sake of presentation, these are divided into two broad sections: External Constraints and Program Constraints. A few suggestions to address some of the constraints identified by the Consultancy team are also discussed.

EXTERNAL CONSTRAINTS

A number of external (to the family planning program) constraints have been mentioned in earlier sections and were also described in our 1982 report. The relevance of these constraints has not changed in the last five years. The most significant external constraints include low levels of female literacy and education, high infant and child mortality, wide-spread poverty conditions, lower status of women, importance of and reliance on sons, and low age at marriage. The government has now fully recognized the fundamental importance of changing these underlying conditions for the acceptance of contraception, and the ultimate achievement of lower fertility. These key development indicators must improve at the same time as the family planning efforts intensify. If they do not, there seems to be little likelihood of the ability of family planning services alone to achieve the desired demographic objectives.

Of the various critical indicators, efforts in improving infant and early child survival in India appear to be achieving some success, although the current level of infant mortality of 95 per 1,000 births is still high, and a decline from 95 to 60 would require greatly expanded efforts. Changes in female literacy have been slow and it remains well below that of males. The literacy rates, according to the 1981 Census, were estimated to be about 25 percent among females and 47 percent among males. Enrollment ratios in the primary level (Classes I-V) for 1984-85 are estimated to be 108 for males and 82 for females. In middle school (Classes VI to VIII), the corresponding ratios were 63 for males and 36 for females. These ratios do not exactly measure the percent of children enrolled in schools because the numerators and denominators are not comparable. Moreover, given high drop-out and repetition rates in primary and middle schools, a large percentage of those enrolled in Class I drop out of schools before completing even level V education. The problem is much more severe among females. It is estimated that only about a quarter of all girls enrolled in Class I complete primary school, and about a fifth reach Class VIII.

Improvement in female education are important in its own right and has received considerable attention in the planning documents. However, there is a wide gap between intention and

implementation of policies and programs that will help to fulfill those intentions. For example, the internal allocation of education resources have been skewed toward higher education, which have disproportionately benefitted the urban middle class. As far as the reversal of illiteracy is concerned, there is more talk of adult literacy programs which may or may not be targeted toward adult females. Moreover, without adequate attention to the school-age groups, one would always be faced with larger and larger cohorts of illiterate children entering adulthood without basic reading and numerary skills. Adult programs may be good for providing literacy skills, but may have very little effect on fertility behavior or on the mortality levels of children. In order to affect demographic behavior, much more attention has to be given to the schooling of female children who are becoming eligible to enter the school system now. Given the time lag between schooling and changes in demographic behavior, it is especially important to focus attention on the needs of the school-going population now.

Overall poverty alleviation remains a fundamental goal of the Indian government, and substantial improvements have been made in a number of regions. However, the Hindi-speaking regions of Bihar, UP, MP, and Rajasthan have not seen sufficient progress in improving the standards of living to suggest that a substantial impact on fertility is likely to occur. In these same states the age at marriage remains low, the status of women also remains

low, and other problems including administration, communications and transport are all in need of major improvement.

While it is significant that the government has recognized the importance of these external constraints for fertility reduction as well as for the success of the family planning program, the MOHFW continues to be entirely responsible for achieving a reduction in fertility. Shortfalls in stated demographic objectives reflect the failure of several sectors of development in achieving their stated objectives. Moreover, making the family planning program entirely responsible for fertility decline does not foster efforts to organize and implement key developmental activities in order to optimize their potential antinatalistic effect; nor does it foster efforts to link family planning services with other key health and development activities. For example, the integrated child development scheme (ICDS) provides a major opportunity to work with rural women and children in a community-based program. This scheme is an important intervention to reduce infant and child mortality, but at the same time these efforts might be reducing the fertility-inhibiting effect of breastfeeding. If so, the net effect of ICDS may be to increase fertility in the absence of information supplied to women about the need to adopt contraception at the time of weaning in order to delay the next pregnancy. In this fashion an effective linkage between ICDS and

family planning, which is highly desirable, could be greatly strengthened. Potential for similar linkages with urban services, women's programs, NGOs, and other sectors need to be explored and established.

A realistic assessment of what can be expected under what conditions in the future is essential to define goals of socio-economic development and family planning program activities. Time perspective, availability of resources, and anticipated changes in the international economic order ought to be considered in terms of their possible influence on future trends of demographic, economic, and social development and their inter-relationships in India. If such an examination were to indicate that the prospects of a sharp fertility decline in the next 15 years are bleak, that in itself would serve the very important function of educating policy makers as well as researchers within India and outside India. It could also have an impact on the kinds of policies that are selected and implemented in India. The focus might shift from a preoccupation with immediate fertility reduction to a more realistic approach in terms of planning for the increased provision of the basic necessities of life as well as in terms of influencing the demographic behavior of couples in the long run. Such a shift in the primary focus would imply similar shifts in goals of socio-economic development and family planning programs, which are overdue.

There is no reason to maintain fertility reduction as the primary responsibility of the family planning program against which its success (or failure) is measured. To argue for keeping fertility reduction as the primary goal and responsibility of the family planning program is to assume that the national government, acting within the existing social and political structures in the country, can, through such policies alone, substantially influence individual fertility behavior. Since the government has recognized the importance of changes in the underlying conditions for fertility reduction, goals and responsibilities of the organized family planning program must be redefined. Instead of a reduction in the birth rate, the redefined goals might be to make information and services for safe and effective family planning methods accessible to all individuals of reproductive age throughout the country.

Obviously, the overall responsibility for reducing population growth rate must be shared by other development sectors too. To accomplish this, a national coordinating agency, such as the Planning Commission, must assume the overall responsibility of reducing fertility in India. Such a shift, combined with easy accessibility of safe and effective family planning methods, might not only improve the quality of life but also help India in her efforts for fertility reduction in the long run.

PROGRAM CONSTRAINTS

1. Spacing Methods. We agree with and applaud the government's desire to incorporate and expand the use of reversible methods in the program. Such a move is essential not only to achieve the demographic goals but, more importantly, to make the program a peoples' movement. There exist conflicts and practices in the program at present that inhibit the operational implementation of this desire.

A basic conflict exists between the centrally-managed, demographically-driven program and the desire to introduce spacing methods and to achieve a high-quality program sensitive to the needs of users. Although the stated goals of achieving a more high-quality "peoples' program" and higher effective continued use of spacing methods are highly desirable, the traditional approach of targets, incentives, and rewards relate most easily to the sterilization program. This approach lends itself to a permanent method requiring a single intervention, as opposed to continued use of spacing methods necessitating ongoing support of health services and consistent availability of supplies.

Target setting is centrally managed, a top-to-bottom activity rather than a bottom-up exercise. At the primary health

center level officials have little if any responsibility in setting targets. Targets are set in terms of numbers of sterilization operations, IUD insertions, and condoms, and pill cycles distributed. Achievement on these targets is translated into number of equivalent sterilizations for comparing performance among states and different types of delivery systems. These practices do not emphasize services provided, nor continued use of contraceptives. Moreover, these practices, along with the higher incentives for sterilization, encourage recruitment of couples for sterilization and do not, in practice, place high priority on providing information and services for reversible methods to potential clients. Continued use of reversible methods requires establishment of effective and continuous relationships between providers and users, which also takes into account the users' need for switching between methods. In the current system, there is no effective incentive for provision of high quality services. Nor is there any reward for continuity of services, effective provider-client relations, or IE&C efforts.

The current monitoring system itself does not monitor services provided or the number of couples using a method. For effective implementation of the revised strategy to promote reversible methods, it is essential that the program follows the couple (women) rather than a particular method. It is immaterial whether or not a particular method is continuously used for a long period. What matters is that women or men who come to the

program or who are initiated to use a method continue to use any method to postpone or avoid the next birth. In a number of countries, including India, it has been shown that women who accepts a contraceptive method achieve success in avoiding a birth but they do not necessarily stay with the original method. Such behavior, however, requires availability of various methods and emphasis on the needs of users and potential users.

Naturally, a comprehensive strategy for introducing IUDs, OCs, and condoms needs to be developed to expand the use of spacing methods. What is required is a much higher level of planning and coordination between training, IE&C, supplies, evaluation, and other components in a carefully orchestrated fashion at each level of administration--the Center, the state, district level, the PHC, the sub-centers. Maintenance of continuous supply of different contraceptives requires the adoption of a more well-developed management approach to the logistics and supply needs of the country.

In sum, an effective implementation of the revised strategy to incorporate spacing methods in the program would require some basic changes in the orientation of the program. It would require a shift from demographic orientation to couple or user orientation, from method specificity to overall needs of the couple, from equivalent sterilization to satisfied users, in setting targets and rewards to providers. Above all, it would

12

require increased attention to the interaction between the provider and the client. Other supporting activities, including I.E.&C. training, the monitoring and evaluation system, and the supply and logistic systems would also require necessary modifications to reflect these changes in orientation.

2. Flexibility. The current approach too rigidly follows a set pattern of program inputs (staff, service delivery points, targets, etc.) and does not consider wide variations among states, districts, and blocks in terms of population density, availability of transport and communication facilities, or contraceptive prevalence. This rigidity does not encourage experimentation in reaching people. The system does not demand program-relevant research because it cannot utilize the research output in changing program strategy. There is a need to introduce some flexibility into the system that will allow states to experiment with alternative strategies for delivering family planning services. Funds being spent on incentives to providers and clients can be used, for example, to increase the density of staff input in selected districts. There is a wealth of experience within India that can be applied in other low performance areas. But such learning and application would require some degree of flexibility in the system.

3. Research and Monitoring. Management Information Systems (MIS) are inadequate for management purposes in most states. Existing management systems largely provide data to state and federal levels, with no feedback coming to the district and local level. An MIS system that would provide rapid collection, analysis and feedback to program managers and to providers is an essential component of an effective management program. Little experimentation on improved MIS is being conducted.

Program research is not sufficient to satisfy program management needs, or to feed back critical information to management at the central, state and district level. While there are many competent groups in India capable of undertaking management and operations research, more needs to be done to solve specific problems faced by managers. Many problems have been identified in the system, only some of which have been mentioned in this report. Yet no comprehensive or systematic approach to seeking answers to these problems has been put in place. For example, very little research on attitudes to spacing methods has been done to determine what users and potential users think about the methods. Such information is critical to the development of appropriate strategies to introduce and expand the use of such methods. The testing of innovative delivery systems to emphasize spacing methods is needed, and could benefit from operations research and evaluation.

A number of research and monitoring issues which need immediate attention have been mentioned in the earlier section on program achievements. These include monitoring of changes in fertility and its proximate determinants at the national and state level through independent surveys carried out at least once in five years. Another important area concerns the better understanding of factors responsible for wide variations among districts in the use of contraception. It was mentioned that there may be as many as 30 districts which have crossed the 60 percent mark in 1987--a goal set for the year 2,000 for the entire country. A careful analysis and documentation of experiences in a number of these districts is essential to identify strategies that have worked and can work under different social and economic conditions. Independent studies are required first to validate these estimates of contraceptive prevalence, to establish the extent to which this level is sufficient to achieve the demographic goals of a NRR of 1 and a birth rate of 21, and to identify factors (program as well as non-program) responsible for achieving this level of performance. Other relevant studies include the secondary analysis of district-level data, and in-depth and response rate studies in selected districts. These are further elaborated in Appendix II.

4. The quality of services has been given insufficient emphasis, even though the problem has now been widely recognized by the government. The approaches being implemented now seem to

take a monitoring and inspection approach, rather than seeking to develop a continuous supportive mechanism to upgrade the services. Even more important is the need to improve provider-client interactions through revised training programs and management systems.

5. Information, education and communication, although expanding considerably and benefitting from a well-articulated strategy, still faces enormous challenges. The initial emphasis on mass media needs to be coupled with the provision of supportive materials for direct person-to-person communication. India has a highly-developed communications industry. This valuable resource has been tapped by the family planning program to some extent, but could be utilized on a much larger scale in the future.

6. Nongovernment Organizations. Despite many innovative and effective NGO efforts, insufficient attention has been given to expanding the role of NGOs, or to documenting successful programs and disseminating the results. A national and state mechanism is required to provide effective coordination between government and NGOs, and to provide resources to the most effective NGOs.

RECOMMENDATIONS TO AID

A vast and complex family planning program exists in India, and is undergoing substantial expansion. Many opportunities exist for collaboration with external agencies, both in the government and nongovernmental sector. The recommendations in this section are based on the consultant team's perceptions of significant program opportunities in India mentioned in earlier sections, together with our sense of program interests and capabilities from USAID's perspective. Naturally, each of these suggested areas of potential collaboration would require expressions of interest on the part of Indian officials, followed by extensive discussions.

1. Improvement of family planning client-provider relationships.

Considerable experience has been gained in India and other countries with techniques and management structures designed to improve the interaction between the provider and the client, in order to assure continued high quality of communication and provision of services. This is a fundamental issue that relates to many of the subsequent recommendations. USAID has experience in other sectors and in many countries on developing training, communication systems, and field experimentation to improve client-provider interactions. One such program is beginning in Uttar Pradesh, in collaboration with USAID and the MOHFW. This

program is utilizing the "T and V" approach developed in agriculture extension. This program, if successful, should be expanded within UP and eventually examined for potential adaptation to other states in India.

Other opportunities to include client-provider interactions relate to the recommendations concerning spacing methods, field experimentation, collaboration with PVOs, and IE&C programs. Consideration of this issue should inform all other activities, as success in improving this crucial interface between the program and the eventual user is of utmost importance to the success of the overall family planning effort.

2. Spacing methods.

The critically important decision of the government to expand availability of and information on spacing methods deserves priority support by USAID. Such support could take a number of forms, including the following:

- o informational support on oral contraception, some of which has already been provided through materials assembled by Family Health International;

- collaboration with the Indian Council for Medical Research in their endeavor to expand their pre-introduction studies, of spacing methods, and to include program relevant research and studies of acceptability of different methods among various groups in Indian society;

- operations research could be conducted through several Indian institutions, such as the Operations Research Group. Programs to improve the delivery of spacing methods in different settings could be subject to systematic operations research, followed by analysis and dissemination of findings. If a mechanism of support for operations research could be developed, it could be applied to many of the other areas listed here;

- the development of appropriate IE&C strategies for each of the methods to be introduced or expanded is crucial to the success of this overall endeavor. USAID could collaborate in the preparation of IE&C materials. This recommendation is expanded further under the recommendation of support to IE&C in general.

3. Field experimentation and analysis for program policy and management.

Given the wide range of achievement in family planning program performance at the district level in most states in India, a careful analysis of the reasons for this differential would be enormously important to program managers. Analysis and documentation of successful experiences in states and districts are required to understand the major determinants, both programmatic and non-programmatic, of high levels of contraceptive prevalence of as much as 60 percent in some 30 districts. Such an understanding could have major impact on program design and implementation in other districts especially within a state. A three-step process is recommended as an implementation strategy. This will involve analysis of secondary information at the district level, and in-depth and response rate studies in selected districts (see Appendix II for details). The response rate studies would consist of field experimentation through operations research or similar other mechanisms. Most important would be effective communication of the experiences both within states and between states.

Such studies could be undertaken by a variety of Indian institutions, including the population centers at the state level. USAID's present proposal to provide support to those

institutions could well be coupled with research plans to undertake analysis of this kind. Other research groups, if required, could also be engaged in this work. The efforts in this area by different institutions, however, need to be coordinated to maintain comparability and quality. If needed, U.S. based institutions collaborate in designing and implementing such studies.

4. Management information systems.

The need to improve management information systems oriented to quality of service is essential as the program shifts to a broader base. Improved MIS systems could emphasize a user-oriented and user-sensitive approach, develop and collect information on indicators of quality of services; as well as indicators of program efforts to assure continued effective contraceptive use. The utilization of micro-computer systems for rapid feedback would enable program managers at the state and district level to receive usable information rapidly, and utilize it for ongoing management requirements. Such approaches have been developed elsewhere, and could be adopted on a limited scale in several districts, and then applied on a larger level. USAID has considerable experience in MIS programs, and could provide technical and material support to such a program, both in the provision of hardware and the development of software systems

appropriate to India. Technical assistance capacity exists in several U.S. based institutions, as well as in a number of highly qualified Indian institutions.

5. Private voluntary organizations in family planning.

Both the Indian government and USAID recognize the importance of PVOs in India, and the potential for expansion of their work in family planning beyond present levels. USAID should consider a variety of possible mechanisms for collaboration with the Indian government in support of PVOs. One such model has already been established in the case of the PVO health program (PVOH), whereby a structure for solicitation and review of proposals from Indian PVOs to a central committee has enabled a large number of PVOs to receive financial support, with AID assistance. A similar mechanism might be adapted to the family planning sector, or an expanded PVO health and family planning mechanism might be developed. A similar mechanism exists in the agriculture sector, with a somewhat analogous model that might also be adapted to family planning. Such support to PVOs should go well beyond those concerned primarily with family planning, and also include women's groups, community development programs, church-based service programs, traditional medical practitioners, and other voluntary groups. Some of the more successful programs should be evaluated, and their achievements disseminated widely.

6. Commercial and organized sector.

Similar to the PVO sector, there are major opportunities for expansion of already significant family planning work in the organized sector, in industry and other national enterprises.

Over the past several years USAID has expanded its support internationally to the commercial sector in family planning, and through a centrally funded program has stimulated substantial expansion of family planning in commercial enterprises. This model could be adopted for use in India, and could be integrated with the government's intention to expand family planning through this sector, not only with industry but also with cooperative schemes.

7. Information, education and communications.

The major expansion of effort by the MOHFW in this sector deserves special attention and potential support from USAID. Many potential opportunities exist to support this effort, including technical collaboration, provision of equipment and material, support through several agencies that receive funding by AID, and research on testing materials and measuring their application in various program settings. A key element in this activity should be the participation of Indian institutions which are highly experienced in communications and information, both at the mass media and at field levels.

8. Technology transfer.

Negotiations are underway for the transfer of technology for the manufacture of Copper T intrauterine device. USAID should follow this development and offer support to the process as appropriate. Similar negotiations are just beginning with regard to the transfer of the manufacturing capability for the NORPLANT/ subdermal implant. This also should be a potential area of interest and support for USAID.

9. Biomedical collaboration.

The present program of collaboration with the National Institute of Immunology is well developed and should be continued and if appropriate, expanded. Given the importance of the work of the ICMR both in clinically testing new contraceptives and, increasingly, in studying their program features and acceptability, AID should seek to expand collaborative activities. A number of US-based institutions involved in program and acceptability research could collaborate with ICMR as their work in this area expands. The existing relationships between ICMR and various international agencies should be encouraged.

10. Population research.

USAID has submitted a proposal to the Ministry of Health and Family Welfare to support state level population research centers. Such a proposal offers important institution building

objectives, as well as providing states with capacities to undertake a number of the research and evaluation activities described earlier. This proposal should continue to receive priority attention, and could be a highly important component of collaboration between USAID and the government.

A specific need in population research is to establish a mechanism to periodically (once every five years) monitor changes in fertility and its proximate determinants through independent national contraceptive prevalence surveys. No such survey has been conducted since 1980. India has significant capacity for conducting such a survey. However, AID should consider providing assistance to the government to establish a mechanism to conduct such surveys periodically. It should also consider collaboration through the Demographic Health Surveys or a similar mechanism to provide financial or technical support as needed for undertaking a comprehensive national contraceptive prevalence survey in the near future.

11. "Beyond family planning" activities.

USAID is already deeply involved in support of various elements of the child survival program in India. This successful collaboration should be continued and expanded where possible. Opportunities for integration of family planning components into that program should be examined. Other key determinants of

fertility such as status of women, female literacy and age at marriage should be studied more closely, and their impact on fertility measured. While there is no mechanism presently available for such studies, the network of population institutes in India offer a potential research capacity. If a mechanism could be found for supporting research on determinants of fertility it would be extremely important for the program as a whole. A number of research international institutions could offer support and collaboration for such endeavors.

APPENDIX I

List of professionals with whom discussions were held during the visit.

USAID

Mike Jordan
Warren Robinson
Richard Blue, Deputy Director
Mr. Owen Cylke, Director
Mr. Silberstein, Deputy Chief, Health & Nutrition
Dr. G. Narayan
Ralph P. Lynton
Dr. E.G.P. Haran

GOVERNMENT OF INDIA

Mr. Uma Shankar, Special Secretary
Ms. Mira Seth, Additional Secretary & Commissioner (FP)
Palat Mohan Das, Joint Secretary
S.K. Alok, Joint Secretary
Rami Chabra, Communication Advisor
Somnath Roy, Director, NIHFV
Dr. Holla, Director, Evaluation
Namboodrifad,
Haracharan Singh, Advisor, Planning Commission
Dr. Paintail, Director General, ICMR
Badri Saxena, Deputy Director General, ICMR
Ashih Bose, Institute of Economic Growth

Government of Andhra Pradesh

Dr. P.S. Sanjeeva Reddy, Secretary to Government

Government of Bombay

K. Srinivasan, International Institute of Population Studies
Mrs. Ava Bhai Wadia, Family Planning Association of India

MRAS (Marketing Research & Advisory Services Pvt. Ltd.)

Partha Rakshit, Executive Director

MARG (Marketing and Research Group Pvt. Ltd)

K.M.S. Ahluwalia, Chairman
Sanghamitra Khanna, Director
Dr. Meena Kaushik, Director, Qualitative Research Division
Sonalini Mirchandani, Research Executive, Qualitative Research
Division

Kerala

Ram Kumar - Population Research Center University of Kerala
T.N. Krishnan - Centre for Development Studies
Nambodiripad - Hindustan Latex

Utter Pradesh

Mr. Shyam Suri, Secretary, Medical/Family Welfare
Dr. A.S. Gupta, Additional Director, Family Welfare

MSH

Dr. Jon Rohde

PHC - Unnad

Kanpur - Postpartum Center

PRC

Prof. Srivastva
Dr. D.N. Saxena

Tamil Nadu

Population Center

Nirmala Sawhney
Asok Kumar

National Union of Working Women

Jaya Arunachalam, President

Aravind Eye Hospital

Dr. Venkataswami
Dr. C.A.K. Shanmugham, Project Director
Dr. L. Rahamathullah

London Rubber Co. (India) Ltd.
Lorcom (Protectives) Ltd.

Dr. K. Kuppuswamy, Director
Mr. Vasu

Government of Gujarat

Dr. Om P. Gupta, M.D., Director, Medical Services &
Medical Education

Indian Institute of Management

G. Girdhar, Chairman, Public Systems Group

National Institute of Design

Vinay Jha, Executive Director

College of India

Dharni P. Sinha, Ph.D.

Delhi

FPF

Mr. Harish Khanna, Executive Director

ILO

Mr. Jalaluddin

UNFPA

Dr. Walmsley

FF

Tom Kessinger
Saroj Pachouri

IBRD

Poonam Khetrapal