FINAL REPORT ON FPMT-ASCI FAMILY WELFARE MIS STUDY

and

RECOMMENDATIONS OF THE NATIONAL SEMINAR ON MIS AND FAMILY PLANNING

G. Narayana
Administrative Staff College of India
Hyderabad, India

Peter Savosnick
Family Planning Management Training Project
Management Sciences for Health
Boston, Massachusetts, USA

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ABBREVIATIONS

ANC	Ante-Natal Care
ASCI	Administrative Staff College of India
CBHI	Central Bureau of Health Intelligence
CC	Conventional Contraceptive
CMO	Chief Medical Officer
CMOH	Chief Medical Officer of Health
D&E	Demographic and Evaluation Cell
DFWO	District Family Welfare Officer
DHO	District Health Officer
DMHO	District Medical Health Officer
DMO	District Medical Officer
ECR	Eligible Couples Register
EPI	Extended Programme of Immunisation
FF	Family Planning
FPMT	Family Planning Management Training Project
FW	Family Welfare
GOI	Government of India
ICDS	Integrated Child Development Scheme
IEC	Information, Education, Communication
IFA	Iron and Folic Acid Beneficiary
ILR	Instrument and Linen Register
IMR	Integrated Monthly Report
IUD	Intra-Uterine Device
MCH	Maternal and Child Health
MEM	Mass Education and Media
MIES	Management Information and Evaluation Systems
MIS	Management Information Systems
MO	Medical Officer
MOH	Ministry of Health
MPW	Multi-Purpose Worker
MSH	Management Sciences for Health
MTP	Medical Termination of Pregnancy
NMEP	National Malaria Eradication Programme
OP	Oral Pill
OPD	Oral Pill Distribution
ORT	Oral Rehydration Therapy
PHC	Primary Health Centre
PN	Peri-Natal
PNC	Peri-Natal Care
UIP	Universal Immunisation Programme
USAID	United States Agency for International Development
VHG	Village Health Guides

FINAL REPORT ON FPMT-ASCI FAMILY WELFARE MIS STUDY

I. FINAL REPORT

a. Introduction

This report summarises the recommendations produced at the National Seminar on Management Information Systems and Family Planning, a workshop held in Hyderabad, India in July of 1990 to examine the findings of a two-year study of the management information systems (MIS) of the MOH's Family Welfare and Health Care Programme. The study was carried out by the Family Planning Management Training Project (FPMT) and the Administrative Staff College of India under a USAID/India buy-in.

b. Background

Since 1988, FPMT and ASCI have collaborated in a two-stage review of the management information systems used by the Family Welfare (FW) and Health Care Programme in various states in India. The first phase of the project was a survey of the state-level MIS in sixteen states, while the second involved an in-depth study of the MIS at the various levels of the FW Programme in six states. The objective of this project was to identify the reasons for the successes and failures of the existing MIS in order to make recommendations for future systems development or modification. In studying the existing MIS, the project identified experimental MIS in use in several states and examined the purposes, uses, and advantages or disadvantages of these systems as well.

In order to carry out both the 16-state survey and the in-depth studies, FPMT entered into a subcontractual arrangement with ASCI to manage the programme. ASCI hired consultants from the Indian Institute of Health Management Research (IIHMR), the International Institute for Population Sciences (IIPS), and the Directorate of Health Services to assist in conducting the study. In teams of two, the consultants conducted interviews with the Directorate and Secretariat Officers responsible for the Family Planning (FP), Maternal and Child Health (MCH), Immunisation, and Malaria Programmes in each of the states. The interviews took place over a period of two years (1988 to 1990) and used two types of data-collection tools: (1) a checklist of discussion points, used in interviews with top-level administrators to identify the usage of data for planning, monitoring, and evaluation; and (2) detailed guidelines for interviews with Programme Officers, used to determine the procedures for target setting, data processing, and programme performance. Based on the in-depth studies, the consultants also developed flowcharts of various subsystems of the MIS in six states.

In March of 1990, a two-day Key Issues Workshop took place in Hyderabad to identify the issues and problems uncovered by the project. The key issues that were identified covered a wide range of areas relevant to MIS: training, data use, data collection and transmission forms, job definition and supervision, and quality control. These issues were used to draft the recommendations presented in this report.

c. National Seminar

On July 30-31, 1990, the National Seminar on MIS and Family Planning was held in Hyderabad to make recommendations for future MIS development work. The Seminar was attended by representatives of the national and state governments and of international donor agencies (USAID and UNFPA), as well as by staff from ASCI and MSH. The participants included:

Dr. Iqbal Alam
ESCAP
Bangkok, THAILAND

Mr. Samresh Sengupta
USAID
8 Palam Marg
New Delhi, INDIA
110 057

Dr. James Ray Kirkland
Chief of Population
USAID
American Embassy
New Delhi, INDIA

Ms. Ena Singh
UNFPA
55 Lodi Estate
New Delhi, INDIA
100017

Mr. R.L. Narasimhan
Director (Evaluation)
MOHFW
New Delhi, INDIA

Dr. T.K. Roy
International Institute for
Population Sciences
Govandi Station Road
Deonar
Bombay, INDIA
400 088

Dr. S.S. Narvekar
Asst. Director (HQ)
Directorate of Health Services
Bombay, INDIA
400 001

Dr. S.L. Banerjee
IIHMR
C 105 Lal Kothi Scheme
Jaipur, INDIA
302 015

Mr. S. Venkatesh
IIHMR
Jaipur, INDIA 302 015

Mr. P. Subramaniam
Director, Centre for Development
Research and Training
15 North Crescent Road
Madras 17, INDIA

Mr. A.K. Mukherjee
Jt. Director of Health Services
State Family Welfare Bureau
CIT Building 5th Floor
Calcutta, INDIA

Mr. M. Chakrabarty
Government of West Bengal
Calcutta, INDIA

Mr. R. Siva Rama Raju
Dy. Director, Health Services
Government of Andhra Pradesh
Hyderabad, INDIA

Mr. A.K. Kutty
Director, Family Welfare
Government of Andhra Pradesh
Hyderabad, INDIA

Dr. G. Narayana
Senior Faculty and Chairman
Social Services Area
Administrative Staff College of India
Hyderabad 49, INDIA

Mr. Umeshwar Panday
Faculty Member
Administrative Staff College of India
Hyderabad, INDIA

Mr. Leslie Jaushua
Administrative Staff College of India
Hyderabad, INDIA

Mr. Peter Savosnick
Family Planning Management Training
Management Sciences for Health
165 Allandale Road
Boston, MA, USA

The National Seminar began with a background history of the 16-state survey and the six state case studies. The introduction was followed by consultant presentations on the findings of the six in-depth studies. After each presentation, the participants were given the opportunity to comment on the findings. The FPMT representative then presented a summary of the key issues identified during the Key Issues Workshop.

The major discussion revolved around the series of recommendations that had been developed by two of the consultants based on the findings of the field work. These recommendations were presented one by one, debated, and prioritised. The principal recommendations for a national FW management information system include:

- No external, standardised, uniform National Health Management Information System should be imposed to address the varied needs, priorities, issues, and concerns of health programme managers at the regional, state, and district levels.

- The national MIS should be constructed around a manageable set of common indicators that can be applied and used in any MIS developed in any state, district, or regional health organisation. The goal should be compatibility, not uniformity, of the systems.

- New MIS should neither be developed from the top down nor from the bottom up; rather they should involve the users at all levels of the systems and address their needs.

- Any information systems development work must provide the users with an understanding of the importance of their work, as well as with the skills and techniques required to manage the process of change.

The goal of the recommendations is to allow the Family Welfare Programme to utilise its information systems in a more efficient and integrated manner, meeting the needs of the broad array of programme managers.

II. PROPOSED APPROACH TO IMPLEMENTING RECOMMENDATIONS

In studying the FW information systems, FPMT and ASCI examined both the original MIS established in the 1960s and the many MIS experiments undertaken since then. The findings showed that:

- the MIS have attempted to solve information problems at the micro level only, most often by trying to reduce the quantity of data transferred from one level to the next. However, by creating new forms for data collection and transmission, the experiments have only added to the complexity and confusion of the systems.
- the MIS experiments have not taken into consideration the major key issue inhibiting the existing systems: the use of data for decision-making.
- the information system users at all levels had not participated in the development of the MIS and consequently did not understand or care about the new systems. The training of users has been inadequate, for it has concentrated on data collection and transmission, rather than on the use of data as information for management purposes.

More often than not, after the initial experimentation period, the experiments were found to be neither replicable nor sustainable.

For future systems development work to be sustainable, as will be discussed in the recommendations, the techniques required to develop, implement, and maintain the MIS must become an integral part of the health system. The institutionalisation of the new MIS will depend on the skills and concepts of the users at all levels. FPMT and ASCI therefore propose the institutionalisation of these skills and concepts through a third phase of MIS development: training.

a. Goals

This training would target the personnel at the central and state Health and Family Welfare Departments. It would also include personnel from the Evaluation and Intelligence wing of the Ministry of Health. Its objectives would be to:

1. sensitise high-level functionaries of state Health and Family Welfare departments to the key issues in MIS
2. provide these functionaries with basic MIS skills so they can help manage the development, operation, and maintenance of the MIS.

The training would also:

3. teach basic concepts of systems analysis, in order to develop the capacity of MOH personnel to participate more fully in the systems development efforts
4. provide personnel with knowledge of selected areas of microcomputer operations, both hardware and software
5. provide the skills needed to develop and prepare workplans for information systems development at the national, state, district, and field levels.

One of the major objectives of this training would be to allow both the central and state personnel of the Family Welfare department to act as a resource for central and field users during the development, implementation, and operation of the new management information systems.

Once trained, this personnel would be able to provide both technical know-how and management advisory services to the state and district offices, as well as to all health units. The central and state Health and Family Welfare department staff would also coordinate the many MIS activities in the field. Coordination will ensure compatibility and integration of the systems, regardless of the various management needs at different levels.

b. Materials Development

In the initial stages of this project, FPMD, the successor project to FPMT, would work closely with ASCI to adapt existing training materials, as well as to develop new training modules, handbooks, and guidelines for daily use by participants. These "in-house" training modules and manuals would also be adapted to the regional, district, and health-unit levels.

c. Training Seminars

In providing similar training to health and family planning organisations in many countries, MSH has found that the training has a much lower impact if it does not become an integrated and continual process within the organisation. FPMT recommends, therefore, that the training courses be conducted on a regular basis and that they be integrated into the central and state health departments.

FPMT could conduct the first series of training seminars with the help of the ASCI staff. During this process, ASCI trainers would be trained in order to be able to conduct subsequent training courses with minimal technical assistance from FPMD.

The training seminars would fall into two categories:

1. a one-week program on the concepts of MIS, aimed at Secretaries, Joint Secretaries, Directors, Additional Directors, Deputy Directors, and Assistant Directors

2. a one-month program combining MIS with basic microcomputer training for health and family planning, aimed at officers from different state Directorates and Secretariats and personnel from the Evaluation and Intelligence wing of the Ministry of Health.

DETAILED RECOMMENDATIONS OF THE NATIONAL SEMINAR ON MIS AND FAMILY PLANNING

I. RECOMMENDATIONS OF THE NATIONAL SEMINAR

The National Seminar recommendations were developed in response to the problems identified during the Key Issues Workshop. Rather than respond directly to individual problems or issues, they take a broad view of MIS and systems development. The recommendations look at the systems overall in order to address the information needs of the Family Welfare Programme.

The participants of the National Seminar recommended the establishment of a national framework for MIS development, followed by the development of new management information systems. They also recommended specific activities to make the state information systems effective and sustainable. The recommendations are:

a. Development of a National Framework for MIS Development

A national-level framework for the development of MIS should be established and should provide states with a common methodology for the design, introduction, and maintenance of systems. The Ministry should appoint a committee of experts to develop the necessary long-term approach.

b. Identification of Key Indicators to be Used in MIS Development

i. Development of a set of indicators

The systems developed in every state should be based on a common set of key indicators. The total number of indicators to be used at the national level should be kept at a minimum in order to be manageable.

ii. Development of implementation strategies

Each key indicator should be identified clearly, and a strategy should be developed for its adoption.

c. Development of New Management Information Systems

The process of MIS development should ensure that the new systems are based on common indicators yet remain flexible, sustainable, and appropriate. This task will involve several components:

i. Evaluation of experiments

The experiments conducted to date should be evaluated systematically in order to pass beyond the experimental phase. This evaluation should lead to the development of new systems that consider each state as a unit.

ii. Development of strategy for systems development

The new systems that are developed should cover all subsystems (inputs, outputs, and processes). A strategy for the development of new systems should be formulated to allow each state to prioritise the development of its subsystems and integrate them within the FW program of the state.

d. Institutionalisation of Systems

i. Commitment of decision-makers

In order to institutionalise the new systems and make them sustainable, efforts should be made to ensure that the key decision-makers are committed to and actively involved in the process of MIS development.

ii. Training of Users and Managers in Use of New Systems

To ensure that the new systems are being used correctly and to their full capacity, training should be conducted at all levels and in all areas relevant to the MIS, from the filling in of registers and reports to the utilisation of information for decision-making. Key decision-makers at the national and state levels should be trained in management information systems.

e. Strengthening of Local-level Capabilities

i. Restructuring of forms

The subcentre registers, where field data are recorded, should be restructured to facilitate the daily processes of data collection, storage, and retrieval.

ii. Improvement of manual systems and introduction of computers

The quality of the manual systems used (i.e., registers and reports) should be examined before computerised systems are introduced. The level at which computer technology can be introduced should be carefully determined and specified.

f. Monitoring and Evaluation of New Systems

i. Periodic reviews

There should be a review of the new systems every three years and an evaluation of their operations and effectiveness every five years. Controls should be developed at all levels to avoid the ad-hoc introduction of registers and reports in future.

ii. Feedback from supervisors

In all cases, the immediate supervisory level should make an effort to be involved in the data interpretation process in order to be able to provide useful feedback. Feedback should be communicated with the least possible time delay.

iii. Frequency of performance reviews

The frequency of programme performance reviews should be examined, and sufficient time should be provided prior to these reviews for data analysis.

g. Planning for Sustainability

i. Resource allocation

Because the introduction of new systems and technologies is expensive, the entire process should be planned carefully. Costs should be estimated and resources allocated in such a way as to ensure the sustainability of the new systems.

ii. Dissemination of work

The institutionalisation process should provide for the full documentation and dissemination of new systems development work.

iii. Elimination of obsolete systems

The old systems should be completely withdrawn after an obligatory period during which they run parallel to the new systems.

II. KEY ISSUES ON WHICH RECOMMENDATIONS ARE BASED

The multi-state surveys and in-depth studies of the state-level MIS conducted under this FPMT project identified several issues that appear to be inherent in both the design and the operation of the information systems. The systems examined were all centrally designed during the 1960s, and most have experienced few, if any, modifications since that time. In the states where attempts were made to introduce changes, alter reports and registers, or computerise, no prior systematic analysis of the existing systems or their operating environment was conducted. Instead, the systems development work that has been carried out has focussed on specific aspects of the systems rather than on the systems as whole. Although MIS development projects have attempted to decrease the volume of data collected (registers) and transmitted (reports), little attention has been paid to the key issue in MIS: the use of information for decision-making.

The present systems analysis found that state MIS serve more as systems for data collection and processing than as functional tools for management; very few decisions are taken by the districts and states based on the MIS. Several factors have prevented the successful utilisation and implementation of either the original or the modified MIS. These factors have included: the highly-centralised Family Welfare system; poor planning; a lack of human and material resources; a lack of support for and understanding of the new systems among users and managers; and the inappropriate introduction of computerised systems. The major issues in state MIS development that were identified during the Key Issues Workshop are discussed below.

a. Need for Training in MIS

To date, the personnel at all levels of the system have received very little training in the interpretation of data and the use of information for decision-making. Occasionally, when new systems have been introduced, staff have been trained to fill out registers and reports. In the cases where important training components were included, there was considerable improvement in staff understanding and utilisation of the systems.

During the Key Issues Workshop, participants agreed on the importance of training in the successful implementation of both new and old systems. The needs are for ongoing training; training during the implementation of new systems; and training focussed on the utilisation of information at different levels and in carrying out job responsibilities.

b. Need for Improved Data for Decision-making

The state-level surveys found that, although considerable amounts of data are collected, the data are frequently unreliable and are almost never used as information (i.e., for decision-making). This problem points to a need for training in the utilisation of data, as noted above, but also indicates a strong need for more selective and higher-quality data.

The service statistics aggregated at the national level have been a major source of concern for some time. Questions regarding the reliability of data are based on several factors:

- Since the people who collect data are not the people who use it, and data are only rarely used at higher levels, personnel pay little attention to ensuring quality in data collection and management.

- The lack of standard (operationalised) definitions makes data collection difficult. For example, what is the definition of a "new acceptor": a person who has never before used a modern method? who has not used a modern method in the past

three years? who is new to the area but may have used a modern method previously? or whose previous use of modern methods has been for reasons other than family planning?

- There is no clear interpretation of the centrally-set targets for oral contraceptives: are the targets for new acceptors only, or for new acceptors as well as continuing users?

The in-depth studies show that the interpretation of target achievements varies from one subcentre to the next. In such cases, central-level emphasis placed on a specific programme or programme component tends to influence the accuracy of the information collected. For example, data from sterilisation programmes are considered more reliable than data on spacing methods, for sterilisation is an area of high priority for the Central Bureau of Health Intelligence.

The data collection and processing systems also need improvement. The vast amounts of collected data are characterised by much duplication, which causes considerable delays in data processing. The reports generated by the different levels of the system are designed to pass data from one level to the next rather than to facilitate analysis. At best, the reports discuss activities specific to a certain period of time, but do not compare these activities to previous periods or to expectations for that period. In addition, analysis of trends has been hindered by the fact that very few district offices store information for more than one year.

These concerns point to a need for clearer standards and targets, as well as for more in-depth analysis.

c. Need for Improved Supervision

The present system for supervision of employees and their work is inadequate. The studies found that Programme Officers seldom know which registers are kept and which reports are sent, and that the supervisors focus on data consolidation and target achievement. Supervisors only supervise by checking the registers kept at subcentres; furthermore, they often check only the date of the last entry because they feel that reviewing for accuracy is unfair to the workers, who have enormous workloads and few printed registers.

Programme performance review meetings usually take place without prior review or analysis of reported information. The only FP/MCH performance objectives that exist are the targets (e.g., number of sterilisations per year) set by supervisors based on the subcentre registers. These quantitative targets are considered so important that health workers spend most of their time trying to achieve them.

The Key Issues Workshop participants agreed that there was a strong need for workplans to facilitate monitoring; for documentation and follow-up of monthly monitoring meetings; for preparation of systematic supervision plans; and for development of supervisory check-lists.

d. Need for Supplies Budget

Necessary supplies have often been lacking or available only infrequently, in large part due to a lack of purchasing funds. The addition of a budget line item for supplies would help alleviate this problem.

e. Need for Better Supply of Registers and Reports

The study found a need for more available and better-designed registers and reports. Most of the registers used at the subcentre level do not facilitate the collection, storage, or retrieval of data. The problems stemming from use of the current registers and reports can be seen in the example of the Eligible Couple Register (ECR), which is the backbone of all Family Welfare activities. The ECR does not have enough space to be easily updated, so new data are usually omitted or, when added, placed in new entries or even separate registers. The ECR is too large and cumbersome for field work, so field workers record data elsewhere and transfer them to the ECR later, which leads to errors. It is difficult to locate a particular household through the ECR. Its data are often outdated, and multiple entries are common. Fewer than half of the 48 columns in the Couple and Child Section of the register are in use. In Uttar Pradesh, it was estimated that only 60 percent of the actual target population was recorded in the ECR.

In addition, the inadequate supply of printed registers and reports forces health workers to set up hand-written registers. These make data compilation difficult: they are frequently inaccurate and incomplete; some contain additional data fields while others lack certain data; and they are organised differently from the printed registers. Even when printed registers are available, they are not always distributed; their unavailability has often led health workers to stop maintaining registers or to maintain only those most convenient for their work.

f. Need for Clear Definition of Roles and Responsibilities

Although supervisory personnel at the state, district, PHC, and subcentre levels have clear job responsibilities, they lack the corresponding authority to make management decisions. Because they have no control over planning or management of inputs other than to refer matters to a higher level, they only work to achieve targets. Their lack of emphasis on management and supervision is passed on to the health workers, who believe that target achievement is more important than quality of services or accuracy of records. Supervisors need to be given some decision-making responsibilities and should, in addition, work with health workers to improve data collection.

g. Need for More Advanced Technology

There are, at present, very few personal computers in use in the Family Welfare system, and those that exist are at the directorate level. The lack of computers results in manual data processing, retrieval, and storage systems, which are slow and require much space. However, the early introduction of computers has been inappropriate due to the scarcity of good manual systems, lack of access to spare parts and maintenance, shortage of trained personnel, and unreliable power supply. There is a need to utilise existing microcomputer technology to store, compile, retrieve, and analyse family planning data, but this technology should only be introduced in suitable environments.

h. Need for Improved Transmission of Information

The current integrated reporting system is designed to compile data at the district level and send them to the Central Bureau of Health Intelligence (the Centre) for data entry and feedback, bypassing the states in order to improve the direct flow of information. However, fewer than 50 percent of the districts report on a regular basis, and the Centre has neither the resources to track late and non-reporters nor the influence to compel the districts. States that have tried to obtain information directly from primary health centres (PHCs) without involving the districts have

encountered similar problems. When the Centre receives the data, it usually takes a minimum of three to four months to prepare and send feedback reports to the states.

An additional problem in the transmission of information is that the fixed dates for the submission of reports have encouraged the use, at all levels, of expensive procedures such as telex and telephone. Efforts need to be made to improve the flow of information both to and from the Centre.

i. Need for Quality Control

There is a strong need for a system for quality control. There is, at present, no monitoring or evaluation of indicators of service delivery quality, such as provider-to-client ratios, client follow-up activities, supervision, and client perception of services.

Although subsystems for logistics and inventory control, personnel, accounting, etc. were developed to provide managers with information on the **inputs** required by service delivery (since health and family planning MIS have traditionally emphasised quantitative service delivery **outputs**), there has been very little review or analysis of these input indicators in relation to the programme performance indicators.

j. Need to Reduce Duplication

The enormous duplication of information is striking in both the old and new registers and reports in all states surveyed. Several aspects of the system contribute to this problem:

- data collection forms often repeat baseline data many times
- workers and supervisors often record Household/Family particulars and service information in multiple registers and write them up in multiple reports, in the belief that the number of registers they maintain is indicative of their performance
- new forms are frequently introduced into the system -- when programme priorities change, when new programmes are introduced, or when high-level officials simplify forms to facilitate their monitoring duties -- but add to, rather than replace, the old forms.

Duplication adds to the number of reports that must be compiled and sent, takes health workers' time away from service-delivery duties, makes data storage and retrieval unwieldy and costly, and increases the risk of double-counting. It is therefore important to reduce this problem as much as possible. Computerising the existing systems would require the complete elimination of multiple data fields and therefore the redesign of many existing registers and reports. However, before redesigning the existing MIS forms, a comprehensive development strategy should be established that would bring together the different users of the systems in a coordination of their efforts.

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All the key issues are linked to and influence one another; they must be considered as a whole, as part of the overall MIS. Past attempts to look at each of the key issues in isolation have only complicated the operating systems further. The first step in addressing these issues should be, as suggested in the Recommendations, for policy and decision-makers to conduct a comprehensive examination of the MIS in order to arrive at a framework for solving the complex problems of the overall system.

III. STUDY RESULTS

a. Overview of 16-state Survey

Between 1988 and 1989, the FPMT Project managed by MSH and its subcontractor, ASCI, conducted a state-level survey of the Family Welfare management information systems in place in 16 states in India: Andhra Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Karnatak, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh, and West Bengal. The objectives and methodology of the study were developed jointly by ASCI and FPMT during several workshops. The objectives of the study were:

- to understand the nature of the reports sent from the districts to the state
- to assess the timely flow and periodicity of information
- to elicit opinions on the adequacy and reliability of information
- to determine feedback mechanisms and data-processing techniques
- to examine patterns of information utilisation.

In order to assess these components of the MIS, teams of two consultants each interviewed the Directorate and Secretariat Officers responsible for the Family Planning, Maternal and Child Health, Immunisation, and Malaria Programmes in each state. The interviews focussed equally on input data (personnel, training, supplies, finance, and transport) and output data (programme performance); elicited information about the use of data for planning, monitoring, and evaluation; and identified the procedures used for target-setting, data processing, and programme performance.

The teams documented the presence of elaborate information systems for the various programmes in all the states, but found that the operation and utilisation of these systems varied greatly by state. Different programmes were emphasised from one state to the next, and data were collected, stored, and used differently. However, there were also similarities in the state systems, most notably in the many registers and reports used, which had either been designed for the original system or as part of the restructured, integrated MIS set up by the Central Health Intelligence Bureau (Centre) in the 1980s. The following pages describe the differences and similarities found in the various components of the MIS.

i. Reporting Systems

Demographic and Evaluation Cell: At the state level in each of the states surveyed, the Demographic and Evaluation (D&E) Cell is responsible for the consolidation and processing of data received from the districts. It processes FP data and forwards them to the Programme Officers, Directors, Secretaries, and concerned Officers at the Centre. In several states, the D&E Cell also collects MCH and immunisation data and forwards them to the concerned Programme Officers for processing.

In addition, a few states have centralised systems for collection and analysis of programme performance data. Programme Officers, assisted by storekeepers, keep data on supplies, while the Administrative and Financial Officers, generally seconded from the state administrative cadre, are responsible for data on finances and administration.

Functions: In many states, the functions of Family Welfare (FW) and Health are distinct, each headed by a separate Director, while in a few states, one Director oversees both components. In states where FW is a special priority, there is a Secretary in charge of both Health and Family Welfare as well as an additional Special Secretary who oversees only the Family Welfare Programme. In all states surveyed, the Programme Officers, who are responsible for technical supervision and have little other authority, have little to do with the processed information they receive.

The Directors, Secretaries, and Programme Officers vary from state to state in numbers, functions performed, and experience. Their placement depends more on the size of the state and the demand for promotional opportunities than on programme needs and requirements. There is a lack of continuity of high-level officials at these levels that makes change difficult:

- the Programme Officer positions are constantly merged, separated, and shifted and in many cases remain vacant for a long time
- most Directors of Health and Family Welfare are promoted to a position just before retirement
- many Secretaries are regularly shifted from one ministry to another because of their skills as general administrators.

The only officers who remain in their positions for a considerable time are those in charge of the D&E Cell and the Mass Education and Information Units. In fact, it is in the states with greatest continuity at the higher levels that attempts to change the information systems have been most effective.

ii. Types and Content of Reports

The state MIS generate a great many reports. However, inadequate storage facilities at the Centre do not permit ad-hoc requests for information to be answered easily. As the same retrieval problem exists at the state level, states often turn to the districts for data which has already been compiled and supplied.

Some states have introduced integrated report forms as part of experimental MIS. The integrated report is intended to replace the old programme-based reporting, covering all programmes as fully as the old forms, but runs parallel to the old system. The new forms are only accepted when they are highly similar to the old forms.

The reports most often produced are discussed below, by programme area:

FW: Altogether, 28 Family Welfare Programme reports are sent to the states from the districts. The states, in turn, send the districts feedback reports, though the contents of these reports vary from one state to the other. The FW reports can be divided into four categories:

- Programme performance reports deal with institution-wise sterilisation, IUD insertions, oral pill and conventional contraceptive targets and achievements, and medical terminations of pregnancies. (A separate report is sent to urban and rural centres distributing oral contraceptives.)
- The sample verification of acceptors is conducted by the state D&E Cell in one or two districts each month, and its findings are sent to the Centre. These reports

discuss the accuracy of samples, missing cases, discrepant entries, and unrecorded data, as well as the number of ineligible coupies operated on and the reasons for discontinuation of spacing methods. Details of phony cases, cases reported twice, and ineligible cases operated on are furnished in a separate report.

- Reports on supplies follow no standardised forms, although they all contain the annual requirement of supplies, delivery schedules, and stock position. Ad-hoc requests are prepared as needed.

- Expenditure statements are submitted monthly and quarterly on standard forms, head-wise by all states.

MCH: The MCH Services Report, which is submitted twice a year, provides data on immunisation performance, antenatal and post-natal services provided, and the number of deliveries conducted. In addition, the Extended Programme of Immunisation (EPI) and the newly-introduced Universal Immunisation Programme (UIP), both coordinated by the Immunisation Programme, submit monthly performance reports containing similar data.

IEC: Monthly and quarterly reports discuss films shown, opinion leader camps conducted, publicity material distributed, equipment in use, and supervisory tours made by state-level Officers.

Malaria: Under the National Malaria Eradication Programme (NMEP), as many as 44 reports are sent from the districts to the state. Of these, 12 are annual reports, one is weekly, and the remaining are either monthly or quarterly. These reports cover epidemiological information, services provided, spraying operations done, supply requirements, and expenditure statements. Some reports provide information by district, while one contains data by PHC. Almost all the states use forms supplied by the Centre, though the quality of data collected varies.

Input subsystems: There are no regular reports on training, personnel, or transport. Since training activities are determined by GOI training targets alone, training has become a routine activity with no basis in genuine programme needs. For personnel information, states must rely on estimates as data are not collected or become outdated quickly; payroll data cannot be easily obtained because salaries are maintained by different administrative officers. The lack of personnel reports often results in prolonged vacancies as well as promotions with retrospective pay. Similarly, because there is no data on numbers of vehicles, their road-worthiness, and maintenance problems, replacements for condemned vehicles do not arrive on time, and drivers without vehicles as well as vehicles without drivers are common.

iii. Flow of Information

The flow of information is largely determined by several factors:

Emphasis on programme: The importance given a particular programme or set of activities greatly influences the flow of information. For example, there is considerable pressure to get timely performance figures on the FP and immunisation programmes, no matter the cost, because these programmes are part of the Prime Minister's 20-Point Programme. In general, more emphasis is placed on programme performance data than on input data.

Time pressure: All District Medical Officer meetings stress the importance of sending information by the tenth of every month. When delays occur (usually due to difficult terrain, poor communication facilities, vacant positions, utilisation of staff for other programme activities,

and lack of adequate interest among Medical Officers), Programme Officers are pressured by requests from high-level state authorities, urgent (sometimes daily) phone calls, and warnings issued in the presence of other officers.

Since the districts have to collect data from all institutions within their borders and consolidate the reports before sending their performance figures to state headquarters, they only supply provisional figures in the first week of every month. The large number of figures given orally or submitted as provisional reports makes the final tallying of figures at state level difficult.

Lack of urgency: Since there is no pressure for the Malaria, IEC, and MCH Programmes to produce expenditure reports or other results, these monthly statements are usually delayed, incomplete, and/or inaccurate. This problem leads to funding problems at later dates for programmes such as the Malaria Programme, which is 50 percent funded by the state.

Necessity: Rather than submit regular reports on supplies, especially vaccines, special messengers are sent with requisitions whenever a particular item is out of stock. The heavy costs incurred by state spending on special messengers and telephone bills do not appear to be a consideration.

iv. Reliability of Information

Certain monitoring mechanisms exist to determine the accuracy of information reported:

- random checks by Programme Officers during their supervisory visits
- Regional Directors' field trips
- evaluation by D&E Cell investigation teams
- regular systematic evaluations by the Central Evaluation Teams
- a limited number of visits by supervisors to the field.

In the case of the supervisory visits, however, supervisors spend most of their visiting time attending meetings, giving new sets of instructions, and monitoring target achievements.

FP: The general perceptions regarding the reliability of FP data are that:

- some performance figures are more reliable than others
- distortion occurs at all levels
- distortion is on the increase because of intense competition, continuous pressure, and unrealistic targets, especially in the last quarter of the fiscal year.

Additional distortion may occur when an acceptor is unintentionally listed twice, or due to the calculations of target achievement and couple protection rates.

Because of understaffing and the lack of adequate facilities, the D&E Cell is not able to undertake regular random FP acceptor checks for the Centre. In those cases where D&E Cell personnel have carried out evaluations and reported distortions, they have been frustrated by the fact that no lasting action has been taken. The only way of discovering distortions, therefore, is through the regular, systematic evaluations sent to the state governments by the central teams.

MCH: In contrast to FP, there is a general feeling that the MCH figures are underreported. The lack of regular performance review and of pressure to achieve targets dissuades female workers from recording services provided. Immunisations are also thought to be considerably underreported, as private hospital and voluntary immunisations are difficult to tally.

Malaria: No reliability checks are conducted on malaria performance figures, although officers perceive large-scale distortions in the reporting of blood smear collections and DDT spraying.

v. Data Processing and Feedback

Once the monthly performance data is received in its final form, the processing begins.

Data analysis: The targets set by the states for district FP and immunisation achievement form the basis for data analysis; these targets are supposed to be derived from a formula developed by the Centre, although most states distribute higher figures to the districts. The states analyse data in order to determine district target achievement, overall performance, and activity-specific performance for sterilisations, IUD insertions, and distribution of oral pills and condoms, and sometimes for immunisation, malaria, and IEC. There is rarely any analysis beyond these rankings. One state, however, does prepare an elaborate analysis that includes a graph of three-year performance trends, Programme Officer notes for each programme, a defaulters' list, and a note on the assistance required from the Directorate and Secretariat.

Data processing: Depending on the centralised or programme-based structure of the state Directorate, the D&E Cell compiles and processes all programme information or just the information on Family Welfare or Family Planning. D&E Cell analyses are invariably more rigorous than those of the Programme Officers when the Programme Officers are responsible for analysing their own programme data.

Data are analysed manually in most states. However, there is one state that has computers but lacks operators, and another that only uses its computers for data storage.

Feedback: All state Directorates provide the districts with written feedback on the FP and Immunisation Programmes, whether in the form of monthly bulletins, reports, or warnings. In addition, Programme Officers brief District Officers on their performance analysis as discussed at state-level meetings that are chaired by either the Director or Secretary. A few states hold District Officer meetings at the Directorate level for the same purpose.

The MCH, IEC, and Malaria Programmes receive little attention and almost no feedback. Many state-level officers do not consider performance review based on ranking to be useful for improving performance.

vi. Utilisation of Information

The most common purposes for which Programme Officers utilise district information are:

- to meet Centre requirements for data transmission
- to monitor select programmes, particularly Family Planning, in terms of targets achieved
- to introduce an element of competition among districts and to put pressure on low-performing districts based on rankings.

In no case is there a thorough analysis of the reasons for high or low performance, an identification of problems, or any development of alternate strategies. A few states have attempted to identify trends by analysing information for the past three years, which has at least been helpful in making District Officers aware of shortfalls in performance. In states that conducted special studies on low and high FP performance and identified behavioral variables as

major contributing factors, no strategy was evolved either to strengthen the leadership or to bring about attitudinal changes.

In most states, information is never used for planning purposes, but only to monitor programme performance and implement central schemes. Even the Secretaries and Directors feel that the state has no planning role, for the Centre is responsible for manpower norms, technology selection, financial allocations, target allotment, incentive schemes, and the design of training plans.

Because even the limited processed information available at the state level is not used, planning and strategy development are generally based on ad-hoc decisions. The centralised authority system is usually considered responsible for the non-use of information for decision-making.

b. Overview of In-depth Studies

i. Family Welfare MIS in Andhra Pradesh

With a population estimated at 6.21 million in 1988, Andhra Pradesh is the fifth most populous State in India. The state has a birth rate of 29.9 and a death rate of 10.34. At 39.2 percent, Andhra Pradesh's couple protection rate is two percent higher than the national average.

In 1988, the state's Health and Family Welfare Services were separated; the state-level Health Services are headed by a director drawn from the health sector, while the Family Welfare Services are directed by the Commissioner of General Administration. The services are still combined at the district level, where the District Medical and Health Officer (DMHO) heads the department, assisted by the Additional DMHO, and Programme Officers look after each of the national programmes. Below the district level, each of the primary health centres (PHCs) has three Medical Officers (MOs). The first-line supervisors, known as female health supervisors and male health supervisors, supervise the work of four female and male workers each.

In the early 1980s, as part of the India Population Project, a state study identified several problems with the existing MIS: overabundance of registers and reports, duplication of data, non-availability of printed registers, lack of uniformity, and inadequate concern for reliability. A new management information and evaluation system (MIES) was subsequently introduced on an experimental basis in three districts. The new MIES was later extended to the 20 remaining districts and now serves the district level and below, while the old reporting system continues to serve district-to-state needs. In the project districts, the position of Statistical Officer was created to assist with data collection and processing, although this facility was not extended to the other districts.

Study Design: After lengthy discussions with the appropriate officials, a high-performance district, Visakhapatnam, and a low-performance district, Chittoor, were selected for the study. In order to select two PHCs from each district, consideration was given to PHC performance in family planning and MCH, as well as to staff position at the PHCs. The PHCs selected from Chittoor were Bammasamudram and Choudepalli, and those selected from Visakhapatnam district were Aganampudi and G Madugula. Four subcentres were selected from each PHC in order to collect data from male and female workers.

Family Planning Subsystem: The Family Planning Subsystem was found to maintain two sets of registers. One set provides male and female workers with information about their area of operation in order to plan their activities; this set includes the Eligible Couple Register (ECR), Village and Household Register, Birth and Death Register, and Daily Diary. The other set, which includes the Sterilisation and IUD Register, Oral Pill Distribution (OPD) Register, Nirodh Distribution and IUD Register, Consent Register, and Minor Ailments Register, serves to record services rendered. General planning registers are also used for the other subsystems. While most of these registers are standardised, a few, such as the Consent Registers, are not.

A total of six reports is sent from the subcentre to the PHC. The Integrated Monthly Report, a printed forma made available to health workers, covers all programmes and is submitted separately by male and female workers. In addition, reports on performance by method, such as the Sterilisation Report, Oral Pill (OP) Regular Users Report, Nirodh Users Report, and Target Couple Contact Report, are sent on hand-written forms. These separate reports have resulted in a considerable amount of duplication.

In Chittoor district, the only register maintained is the Consolidation Register, which covers all programme and IUD registers. This register is maintained separately by male and female supervisors. In Visakhapatnam, on the other hand, male and female registers are not separate. Several registers are maintained: the FP Performance Register, IUD Insertion Register, Register for Regular Users of Nirodh, and Consent Register.

In both districts, all supervisors maintain a Tour Diary and must consolidate their workers' reports and submit an Integrated Monthly Performance Report covering all programmes. (The form used by both workers and supervisors is the same.) Supervisors must additionally submit other monthly reports such as the Individual-wise Achievement on FP, List of Sterilisation and IUD Acceptors Report, and Consolidated Report on Target Achievement. A joint "Report on FP Acceptors" is also submitted once a year. Except for the integrated report, all reports are hand-written.

At the PHC level, Chittoor district only maintains the Sterilisation and IUD Register. In Visakhapatnam, by contrast, Block Extension Educators at the PHCs maintain registers on Individual Performance, FP Performance, and FP Acceptors. The PHCs in both districts send monthly performance reports on integrated forms.

The hand-written forms submitted monthly include: the Individual Performance Report, Division-wise Achievement for and up to the Month, and Doctor-wise Performance of Family Planning Work for and up to the Month. The district maintains registers similar to those of the PHCs and sends the same type of reports, although it also includes reports on Cause of Death, Sterilisation Bed Performance, and Annual Performance. Chittoor district has a feedback report on PHC performance, but Visakhapatnam district does not.

MCH Subsystem: The Maternal and Child Health Care Register is the core register for planning MCH activities. Printed copies of the register are supplied in all subcentres and are updated regularly. The other registers used to record information on services provided include: Immunisation Register, Nutritional Supplement Register, subcentre Clinic Register, Antenatal Register, and UIP Register. The content as well as the number of MCH registers submitted vary widely; these variations are noticed not only in the subcentres but also in the PHCs.

In addition to the Integrated MIES Report, several reports, almost all of which are hand-written, are sent from the subcentres to the PHCs. These reports include the Month-wise Return on MCH Services, Monthly Report on EPI, UIP Report, New Antenatal Report, New Perinatal (PN) Report, Subcentre Clinic Report, Anganwadi Report, and Birth and Death Report.

At the PHC level, the districts only maintain one register in common: the Immunisation Consolidation Register, which gives performance details on all work and activities and is prepared on the basis of workers' monthly performance reports. The PHCs in Visakhapatnam district maintain the ICDS Register and the Register of Village Health Guides (VHGs) Monthly Meeting.

In Chittoor district, only one report is submitted, while in Visakhapatnam, a total of eight reports, mostly hand-written, are sent. These include the UIP Report, Report on Drought Relief Measures, Monthly Return on MCH Services, Form for Collection of Statistical Data on MCH services, Monthly Surveillance and Vaccination Report, BCG Vaccination Report, subcentre Clinic Report, and Report on Review of Health Assistant.

Like the PHCs, the districts all maintain an MCH Consolidation Register, in addition to a series of other registers -- such as the UIP Consolidation Register, EPI Consolidation Register, MPW Scheme Register, and Institution-wise Consolidation Register.

The districts not only submit different types of reports, but follow completely different patterns of report submission. They send a total of ten types of reports: Report on EPI Performance, Report on Intensive Immunisation Programme , Report on Immunisation for Mothers and Children, Consolidated Report on BCG Vaccination Performance and Utilisation of BCG Vaccines, Report on Village Health Guide Scheme, Return on MCH Services, UIP Monthly Report, EPI Monthly Surveillance and Vaccination Performance Report, Fortnightly Report on Drought Relief Measures, and Monthly Report on Morbidity and Mortality due to Diarrhoeal Diseases under Five Years of Age.

IEC Subsystem: At the subcentre level, there is no specific register for recording information-education-communication (IEC) activities. Such activities are usually recorded in the daily diary. Every month, subcentres submit an MEM report, using a common form, to the PHCs. In addition, the Integrated Monthly Report (IMR) also has a section for IEC activities. At the sector level, a hand-written Health Education Register is maintained and a monthly report, with the same form used by subcentre, is sent to PHCs. The PHC maintains two registers: Mass Media and Cultural Programme Register, and Orientation Training Camp Bio-data Register. The PHC prepares the MEM/IEC Report, MEM Target Achievement Report, and MEM Report. These are all hand-written with considerable duplication of information. The district maintains an IEC Register to consolidate all the reports received from the PHCs. In addition, there is also a Film Show Register on the films exhibited in the district. IEC Reports from the districts include MEM/IEC Monthly Report and Report on Film Shows. The monthly report is consolidated and sent on a quarterly and annual basis. There are no feedback reports for IEC activities.

Supplies Subsystem: Generally, both male and female workers collect items such as oral pills, Nirodh pieces, etc. without indents from the PHC and maintain a Stock and Issue Register for these items, as well as one for vaccines. In Chittoor district, no report is submitted for stock position. However, in Visakhaptnam workers send two reports, one on the stock position of vaccines and the other on Nirodh and OP cycles. Both are prepared by hand as no printed form is available. In Chittoor district, a printed register called the Stock and Issue Register was introduced but not used, as the workers get their supplies directly from the PHC.

The PHCs receive supplies from the DMHO stores, but no indenting systems are followed. The district allots medicines and other items to the PHCs based on the stocks in the district stores. The number of registers maintained varies from one PHC to another. Some of the PHCs maintain registers by programme and others by item. Most of the PHCs maintain the Family Planning Drug Register, Nirodh Register, General Drug Register, Family Planning Injection Register, Surgical Instruments Register, Linen Register, and Furniture Register. These registers contain the same information and are maintained on hand-written forms. The PHCs prepare the Nirodh and OP Stock Reports and the IUD Stock Report on a monthly basis on a cyclostyled form.

The districts receive their supplies from the state and the Centre. The Family Planning Stock Register, Immunisation Stock Register, Immunisation Equipment Stock Register, and MEM Stock Register are the principal registers maintained at the district level. The districts do not submit any report exclusively on stocks of various items.

Finance Subsystem: The financial registers and reports are the same for both districts. All the PHCs maintain the Establishment Pay Bill and Acquittance Register and the AC-DC Bill Register, both of which are updated on a regular basis. In addition, the GPF Advance Register and Festival Advance Register are maintained to record any advance amounts given to employees. The PHCs submit an expenditure report in the third week of every month. The district maintains a series of registers for such activities as the reallocation of funds received from the Directorate, disbursement of salaries, and payment of incentives. Before receiving financial allocations, the

districts submit two statements (the revised estimates and final revised estimates) of the amounts needed by different programmes within the district for a particular year. After receiving the allocations, budget line-item expenditure statements are sent to the state government.

Personnel Subsystem: There are no personnel registers at either the subcentre or sector levels. PHCs maintain two registers relating to personnel matters: the service register of every PHC employee, and a register of leave taken. Each month, every PHC submits a staff position report, which includes information on the number of staff positions, number of staff in place, and vacant positions. At the district level, separate registers are maintained for each category of employees. The Gazetted Establishment and Ministerial Service Increment Register is also maintained.

Four reports are sent from the district to the state. Of the two monthly reports, one deals with vacant positions for medical professionals within the district, and the other with vacant positions in institutions within the district. The other two reports sent to the Directorate are annual: one deals with the establishment of subcentres and the other with the establishment of upgraded PHCs.

Transport Subsystem: Apart from a log-book kept at PHCs and districts, there are no separate registers maintained for vehicles. A vehicle maintenance team at the district level, however, keeps one stock register for spare parts and another for tyres and batteries. No reports are sent.

Conclusions: At the subcentre level, workers (particularly females) continue to carry the burden of maintaining a large number of registers. Their workload has been increased by the new MIES because the new system is running parallel to the old. The problem has been multiplied by the lack of printed registers and reports. In the case of the new printed registers, the columns are not always wide enough to fill in. As field workers do not carry registers with them, in most cases details are simply jotted down for later transmission to the registers. The supervisors rarely check the registers.

The MIES is still more complex at the PHC level, where registers are updated once a month, but no standardised set of registers is maintained and major variations are found from one PHC to the next. This problem also exists at the district and applies equally to the registers kept and the reports sent out.

The main problems hindering the efficiency and effectiveness of the systems are:

- inadequate supply of registers and reporting forms
- duplication of data
- lack of training
- lack of supervision
- over-emphasis on quantitative target achievement
- multiplicity of registers and reports
- unreliability of data
- insufficient utilisation of data.

ii. Family Welfare MIS in Himachal Pradesh

Himachal Pradesh is a hilly state with a largely-rural population of 4,280,818. The crude birth rate and general fertility rate are 32.9 and 133.8, respectively. The annual birth rate for the state decreased from 32.9 to 30.1 between 1983 and 1988, and the death rates have also shown a downward shift of 1.6 points for the same period.

The immunisation programme for infants and mothers has been fairly successful, with an average target achievement of nearly 75 percent for BCG, DPT, OPV, and measles, and of 62.3 percent for pregnant mothers. Himachal Pradesh has performed very well in family planning; 1986-87 statistics found a target achievement of 94.3 percent in sterilisation, 102.5 percent in IUD, 115.89 percent in conventional contraceptives (CC), and 165.48 percent in OP.

The health and family planning delivery system at the district is headed by the Chief Medical Officer (CMO), who also controls the administration of the district hospital. A separate district Family Welfare Office (DFWO) exists to look after the FW programmes for the district, although in practice the administrative and financial powers needed by the DFWO are vested in the CMO. The other Programme Officers assisting the CMO are the Medical Officer for Health and Malaria, the Leprosy Officer, and the Hospital Superintendent. The immunisation programme is under the control of the Medical Officer (Health).

In recent times, some modifications have been made to the existing registers and reports. These have included: the addition of columns in the ECR for the purpose of recording follow-up and observations; the introduction, with the launching of the UIP, of a new Antenatal Care (ANC) Register which allows recording of village ANC and immunisation services; the addition of information on the age of the beneficiary in the immunisation report; the introduction of the 20-point programme report for Family Planning; and the introduction of feedback report from Directorate to district and from district to PHC.

Study Design: The study was conducted in two districts of the state in order to gather information on the status of MIS for the Family Welfare Programme. Districts were selected based on their couple protection rates; a rate of 42.5 percent was set as a cut-off point in order to divide the districts into well-managed and poorly-managed categories.

Bilaspur district was selected from the first category and Kangra district from the second. Using the same procedure, two PHCs from each district and four subcentres from each PHC were selected in order to study the registers maintained and reports sent. All the subcentres selected have a population under 3,000. The minimum population covered by a subcentre was 1,573, little more than half of the norm. All the villages selected were within four kilometres of the subcentre.

To collect information regarding the existing MIS, questionnaires were administered to the workers at various levels (i.e, male and female workers, male and female health supervisors, PHC medical officers [also known as Block Medical Officers] and the District Medical Officers). The factual information on registers and reports, as well as the feedback received, were studied by examining the maintenance of these registers and reports.

Family Planning Subsystem: Since the introduction of the multi-purpose scheme, an integrated package of family planning and MCH services has been provided, along with other health services, by the multi-purpose workers operating from the subcentres. However, the highest priority is accorded to the delivery of family planning services by the field-level multi-purpose workers.

At the subcentre level, the distributions of family planning materials and medicines are recorded in separate registers. The female worker maintains an IUD Register and a Contraceptive Issue Register separately for regular and non-regular users, as well as an OP Distribution Register. A Sterilisation Register is also maintained by the female worker to record details of operations undergone by the beneficiaries. Of these registers, only the Contraceptive Issue Register for regular users and the Sterilisation Register were in printed forms; others were maintained in

notebooks. There is one consolidated, hand-written register called the Family Planning Register, which is maintained by female workers to note details on acceptors of all Family Planning methods.

The Tour Diary is the basic record in which the workers make note of the services rendered in the villages. On the basis of this register, the various other registers are filled. The Tour Diary is not, however, used for planning. The male workers maintain a separate Tour Diary, a sterilisation register for recording details of cases motivated for sterilisation, and a family planning register in which details of both OP and CC distribution are entered.

Of all the registers maintained by the male and female workers, only the sterilisation register and the IUD register were found to be regularly updated, for these methods involve incentives for the beneficiaries and are likely to be checked by the state Family Welfare Bureau staff. Even in these registers, the columns meant to record follow-up services were not filled in, because those services were provided only in cases of complications.

Every month, as part of the integrated MIES Report, the subcentre workers report the services delivered through the 20th of the month. The form of this report is comprehensive and covers (in addition to FP and MCH services) malaria and other diseases, as well as minor ailments, environmental sanitation, health education, etc. It has a section for recording the stock position of various drugs and materials. The study found that, because of the shortage of printed report forms, workers usually enter the details on hand-written forms, using the printed forms as guidelines. Most of the workers said that these reports were filled on the basis of the Tour Diary rather than the other registers. In some cases, the integrated reports from the subcentres are consolidated by the male and female supervisors for male and female workers, while in others they are given directly to the PHC during the monthly meetings. There are no specific registers maintained at the sector level, except for the Tour Diary which is maintained individually by the supervisors.

Apart from the integrated reports, the subcentres send two annual reports, which are jointly made by the male and female workers. The first report is called the Annual Survey Report and is submitted every July after completion of the Eligible Couples (EC) survey. The second report, the Annual FP Acceptors Report, pertains to the monthly target achievement of sterilisations and gives demographic particulars of the acceptors. In some cases, this report is prepared individually.

At the PHC level, the reports received are compiled either by the computer or by the sector supervisors who operate from the PHC. Four registers are prepared on the basis of the reports, namely: the Consolidated EC Register for the PHC, the Sterilisation Register, the IUD Register, and the Family Planning Register. These registers detail target achievement by worker and by subcentre, as well as the demographic details of the acceptors. The consolidated ECR is maintained at the PHC and updated every year on the basis of the annual reports sent from the subcentres. The other three registers are used at the PHC to prepare various reports which are taken by the Medical Officers to the district meetings held on the 26th and 27th of every month.

Four reports are prepared by the PHC: Form P1 for sterilisation and IUD, Form P2 for distribution of conventional contraceptives, the MTP Report, and the Annual FP Acceptors Report. These reports detail the delivery of these services in the PHC area by private practitioners, in addition to describing the achievements of the workers. These reports are prescribed by the GOI and are prepared on hand-written forms. At the district level, the statistical assistant maintains one register with four separate sections to record achievements of PHCs and other institutions and to collate performance by method. The district sends the same

reports (Forms P1 and P2, the MTP, and the Annual FP Acceptors Report) to the state. These reports are prepared by the Statistical Assistant and sent by the CMO.

The PHC Medical Officers give oral feedback on the subcentre reports, which generally centres on the targets achieved. The director (state), however, sends a monthly feedback report on districts' achievements. The districts are ranked and awards are given to the highest-performing district for the month. Similarly, the districts send a written feedback report giving the comparative performance of the different PHCs within the district. While the feedback from the Directorate is regular, the feedback from the district to the PHC is usually delayed for a period of three weeks.

MCH Subsystem: The Antenatal Register is the core register for MCH services and is maintained by male and female workers. While the female workers record the details of all services provided to the beneficiaries during pregnancy and child birth, including follow-up, the male workers record only details of the cases identified, in hand-drawn registers. At each month's end, an abstract is written in the register in order to facilitate the preparation of reports. A separate Iron and Folic Acid Beneficiary (IFA) and Vitamin A Register is also maintained by the workers for the doses given during pregnancy and for other categories of women. In addition, the female workers maintain two registers, the Delivery Calendar and the Birth Register, which contain much duplicate information.

The services provided to children are maintained in two registers. One of these, the Immunisation Register, is intended to record details for the entire family, although it is not used this way in practice. The Vitamin A Register for children is the other register, from which monthly abstracts are made regarding vitamin A distribution to children. These registers are maintained by both male and female workers.

Reports on the MCH achievements are sent in a form separate from the integrated report. The methods of reporting vary: while in one district, the reports were compiled separately for both male and female workers, in the other district, the reports were combined. The reports also include details on deliveries conducted by other workers (trained, untrained dais, and institutional deliveries), the stock position of vaccines, and nutritional supplements, in addition to the FP and Immunisation camps conducted and planned. The reports are consolidated by the sector supervisors.

At the PHC level, three registers are updated by either the computer or the sector supervisors based on the above reports. The antenatal part of the report (i.e., new cases registers, bases contacted and referred, and immunisations given) is recorded in the ANC Register, while a Delivery Register is used to record the number of deliveries conducted during the month per subcentre, along with the progressive totals. Details on immunisation are recorded in the immunisation register by subcentre, as are details on the number of cases initiating and completing doses of IFA and Vitamin A.

Two reports pertaining to MCH activities are prepared in the PHC and carried by the PHC (block) Medical Officer to the district-level meetings. The first, the UIP Report, was introduced two years ago with columns added for information on the Instrument and Linen Register (ILR) and refrigerators. (The details of the working of the equipment and any cases of abscesses or untoward reactions are new additions to this report.) The other register maintained at the PHC is an MCH register.

Conclusions: The insufficient supply of register and report forms significantly increases the workload of field-level subcentre workers, who must spend many hours drawing the necessary columns. Field workers' attitudes toward the maintenance and updating of information tend to be

casual, for they perceive the MIES to fill that function. The over-emphasis on target achievement is another contributing factor to the under-utilisation of information. To compound the problem, valuable information such as the EC survey, which takes at least two months a year, is not taken into account while targets are being set. The concept of planning is lacking among the subcentre workers.

Supervision also needs attention. Reports submitted by subcentre workers are used by their supervisors only to compile and not to monitor work. In many cases, the reports even bypass the level of the first-line supervisors. The supervisors' role as a vital link between the subcentre and the PHC should be given due recognition; much might be accomplished if supervisors are trained to look into and interpret the work of the subcentre workers.

Duplication of information is another problem. The availability and proper design of the register and report forms could avoid much duplication, as well as reduce the workload of the workers. The time saved could be used to conduct field visits and provide services.

iii. Family Welfare MIS in Kerala

Kerala state has a population estimated at 27 million and a very high quality of life index as compared to other Indian states. The state has recorded a literacy rate of 70.4 percent, a crude birth rate of 22, and a crude death rate of 6.4. In regard to family planning acceptance, Kerala has achieved a couple protection rate of 52 percent, 15 points higher than the national average.

In 1983, a multi-purpose scheme was introduced in Kerala, and major changes were brought about in the titles and functions of workers and supervisors. Currently, at the subcentre level, female workers are supervised by public health nurses who in turn are supervised by the female health supervisors. Similarly, male workers are supervised by senior health inspectors who report to male health supervisors. At the PHC level, there are three medical officers, the most senior of whom acts as the administrative head. The district has been divided into two zones, each of which is looked after by a team of officers consisting of the Deputy Medical Officer of Health, the Deputy District Media Officer, and the Public Health Nurse or MCH Officer. The District Medical Officer of Health is the administrative head of the district health organisation.

Kerala has been experimenting with its management information systems for more than three years. First the reporting systems were taken up for modifications. The key indicators from each programme were identified, with both input and output indicators given equal importance. The final list included 104 indicators divided into six major categories. The information in 20 of these items relates to administration, while the remaining indicators deal with programme performance. Under the new system, PHCs report to the district, which forwards information to the state. All the reports are processed by computer, and feedback is given to all districts and PHCs. Kerala began redesigning its subcentre-level registers three years ago, although the redesigned registers have yet to be pretested. Ultimately, all subcentre-level registers will be replaced by five registers: the Family, the Mother, the Child, the Acceptance, and the Stock.

Study Design: All the districts in Kerala were ranked based on family planning and MCH programme performance over three years. Kottayam, a high-performance district, and Palghat, a low-performance district, were the districts selected for the study. The PHCs in both districts were divided into high- and low-performance clusters. Kodaloor and Karukachai were the PHCs selected from the low- and high-performance clusters, respectively, in Kottayam district, and the Koduvayyur and Ambalampura PHCs were selected from Palghat district for the study.

Family Planning Subsystem: Two types of registers are maintained by male and female workers: one set is used for workplanning and the other to record information on services provided. Male and female workers maintain information in separate registers, use information in different ways, and submit individual reports to the higher levels.

The Common Planning Registers submitted by the female workers are the Tour Diary (the only register taken to the field), the Work Plan Register, and the Eligible Couple Register, although the actual utilisation of this information for planning purposes is very low. In addition to these planning registers, a few subcentres in Palghat district also have the new Family Health Registers, which are expected to replace the old Eligible Couple Registers, although this has not yet occurred. The other registers maintained to record information on the services provided by the female workers are the Sterilisation and IUD Register, the Oral Pill and Conventional Contraceptive Register, and the Health Education Register. All reports submitted by female workers are monthly performance reports, and a monthly consolidated performance report covers all programmes. In addition, the Monthly Report on Family Welfare activities is submitted to cover family planning performance by method.

Compared to their counterparts, male workers maintain fewer registers. The registers maintained by males include: Tour Diary, Eligible Couple Register, Conventional Contraceptive and Oral Pill Issue Register, and Community Education Activities Register. Male workers send only one monthly report, the Report on Family Planning and Community Education Activities. Both the male and female workers maintain the registers largely on hand-written forms and updating is done after considerable time gaps.

No separate registers are maintained for family planning activities at the sector level, since all sector supervisors have their offices at the PHC headquarters. At the PHC level, no distinctions are made between male and female workers. There is only one register, the Consolidation Register for Family Planning Activities, for the recording of performance data obtained from male and female workers. There are also a series of registers known as the Demographic Particulars of Sterilisation Acceptors, New and Views Register, Register on Community Education Activities, and Laparoscopy Camp Register.

The number of reports and their contents vary from one PHC to another. In Kottayam district, both PHCs send two consolidated reports and two programme-specific reports. In Palghat district, two reports are sent by one PHC and four reports by another. The Consolidated Performance Report on Individual Achievement of Workers and the Area Achievement Report are some of the common reports. Except for the Integrated Monthly Report, all others are on hand-written forms.

Statistical Assistants at the district office maintain registers based on reports received from PHCs; all district-level officers have access to this information. Two registers (the Month-wise Family Planning Register and the Individual and Institution-wise Consolidation Register) are maintained to record data on family planning performance. The Film Show Register is the other register maintained to note the audio-visual programmes carried out in the districts. Two reports are sent on family planning performance: the newly-introduced Integrated Report and the Technique-wise Family Planning Report. In addition, the Report on Demographic Particulars of Acceptors is sent without any particular time schedule. Two types of IEC reports with similar contents are sent to the Directorate, one on a monthly basis and the other on a quarterly basis.

MCH Subsystem: At the subcentre level, there is a proliferation of registers regarding MCH activities. Different types of registers are in use; most subcentres maintain only the registers considered important by the concerned workers. The Child Health Register, Clinic Register, and Maternal Birth Register are some of the common registers maintained by all female workers.

Greater variations are found in the service registers maintained; among the service registers commonly maintained are the Immunisation Register, UIP Register, Vitamin A Issue Register, Iron and Folic Acid Beneficiary Register, and Immunisation (School Health Programme) Register. Generally, three reports are sent from the subcentre to the PHC: the Monthly MCH Report, Immunisation Report, and Prophylaxis Report. MCH performance is also a part of the Integrated Monthly Report.

In spite of the large number of MCH registers at the subcentre level, only one register is maintained at the PHC level to consolidate information on MCH performance. In both the districts, printed copies of this register are made available. This register includes month-wise and institution-wise acceptors of MCH services. The main reports prepared at the PHC level are the Monthly Report of MCH Activities, EPI/UPI Report, Beneficiary Report on Prophylaxis Against Nutritional Anaemia, and Vitamin A Beneficiaries Report. In Kottayam, a new report form (the "Special MCH Programme Report") was introduced by the district Medical Officer of Health, who found it difficult to go through all the separate reports submitted by PHCs.

At the district level, as in the PHCs, only one consolidation register is maintained. Several reports are sent to the state on a monthly basis. These include the Report on Immunisation Performance, Monthly Report on MCH Activities, BCG Vaccine Report, and Report on ILR and Prophylaxis Against Nutritional Anaemia Beneficiary Report. Although there is no feedback exclusively related to MCH activities, feedback from the Integrated Monthly Report includes MCH indicators.

Supplies Subsystem: Three types of supplies are provided subcentres and PHCs: contraceptives, medicines, and equipment. The subcentres record supplies in the Register for General Medicine and Equipment. Since subcentres are not usually supplied with medicines, many of the columns of this register have remained blank in Kottayam district. Both districts also maintain the Conventional Contraceptives and Oral Pill Stock Register, and a report on stock position is part of the programme performance reports. The supplies subsystem becomes more complex at the PHC level, which receives supplies from many sources and assigns responsibility for maintenance of stocks and for distribution of items to many categories of personnel. Indenting procedures exist, although they are not strictly followed. The principal registers maintained are the Equipment, Instrument and Linen Register; the General Medicines Register; the Register for Mixtures, Powders and Dressing; the Stock Register for Family Planning Items; and the Stock Register for Educational and Publicity Aids. All these records are kept on hand-written forms. As no reporting is done on supplies, the only use of the registers is to know about stock position and to make them available for annual audit. Similarly, the district level maintains five main records: Register for Quotations, Stock Register of Medicines, UIP Stock Register, Register on IEC Materials, and Registers for Account Forms and Common Stationery. No reports are submitted by the district on stock position.

Personnel Subsystem: There are no registers maintained on personnel at either the subcentre or the sector level. At the PHC level, only service books on employees and leave registers are maintained, and no personnel report is sent to the district. However, the number of vacant positions and the number of personnel in position are included in the Integrated Monthly Report. The district office maintains a large number of registers on the personnel working at the district level as well as at the PHC and below. These registers cover cadre-based information, leave taken, recruitment done, and transfers made. A total of nine registers are maintained; the main district-level records are the Medical Cadre Register, the Leave Register for MOs, the Cadre Registers for other employees, the Applications Register, the Recruitment Register, the Register on Declaration of Probation, and the Transfer Request Register. No reports on personnel are sent from the district to the state.

Finance Subsystems: PHCs do not have any flexibility or the power to spend money, apart from an insignificant contingency amount. As a result, most financial functions are related to bookkeeping done by the UDC, under the supervision of the in-charge PHC MO. There is no variation from PHC to PHC as far as the registers maintained. The main PHC-level registers are: Establishment Pay Bill Register, Treasury Bill Book, Cash Book, Acquittance Register, Contingency Register, Miscellaneous Purpose Fund, Multi-purpose Fund Register, Provident Fund Register, and Festival Advance Book. In addition, six registers are maintained for sundry items such as postage stamps, stationery, list of articles for condemnation and auction, and despatch of letters.

The district office has two main functions: to disburse funds to other institutions in the district, and to maintain the district office accounts. The financial transactions and registers maintained at the district are identical to those maintained at the PHCs. In addition, the district maintains three registers for the recording of transactions with other institutions. These include the Allocation of Budget Amounts, the Disbursement of Advance Payment, and the Payment for Vehicle Repairs registers. Each month, the PHCs send a printed Consolidated Expenditure statement to the district office. The PHC statements are reconciled at the district level with a similar statement obtained from the Treasury. Each month, the districts prepare a consolidated statement for the Directorate. The same statements are consolidated and sent again on a quarterly basis.

Transport Subsystem: Apart from the log book maintained by the driver, no registers on vehicles are maintained at the PHC level, while at the district level, information on vehicle repair is maintained by the mobile team. The PHCs also maintain no reports on transport. The mobile team at the district level maintains six registers and sends three reports to the Directorate. This information, however, is not shared with the district office.

Conclusions: Basic information on the total population is collected at the subcentre by means of an elaborate survey. Both male and female workers participate in the process of data collection and the transfer of data to standardised registers. The sharing of information, however, is nonexistent. None of the registers are carried to field except a blank notebook known as the Tour Diary. New entries are not made properly in the registers because the retrieval of information is a problem. Though family planning registers are standardised, the MCH registers are not. Interestingly, the "better" workers maintain more registers than the other workers, whether needed or not; none of the supervisors have ever questioned this practice. Most of the registers are maintained on hand-written forms. Duplication of information is a major problem. The PHCs and districts maintain fewer registers than the subcentres. More registers are maintained for family planning than for MCH. Usually the PHC MOs and district officers do not look into these registers and it is not an exaggeration to say that they are not even aware of the number of registers maintained.

The Integrated Performance Report which was introduced takes into account the key indicators. However, since the old report forms remain in use, the introduction of the integrated report has only increased workload at all levels. The PHCs and districts send more reports than do the subcentres, and more importance is given to output reports dealing with family planning and MCH indicators. Though input information is recorded, there is no flow of this information on regular basis, and its use for decision-making purposes is minimal. The feedback given at various levels is usually oral and is based on achievement of targets given. Written feedback comes from the Directorate but only after a gap of several months, and these reports are usually placed on file.

iv. Family Welfare MIS in Maharashtra

As the third largest state in India, Maharashtra has a population estimated at 72.7 million in 1988. In 1987, the estimated birth and death rates were 28.7 and 8.3, respectively. Approximately 65 percent of women currently married have been effectively protected by various contraceptive methods.

The District Health Officer (DHO) is responsible for the implementation of health and family welfare programmes in the district. The DHO is assisted by one Additional DHO, one Assistant DHO, the District Tuberculosis Officer, the Assistant DHO (Paramedical), the District Malaria Officer, and the District Extension and Media Officer. Purposive grants are paid to Zilla Parishads (bodies of elected district representatives) for various programmes which, in turn, provide administrative support and supervision to the district Health and Family Welfare units. Each PHC has two medical officers, two first-line supervisors, and six male and six female multi-purpose workers.

Before the 1980s, there was no system in Maharashtra for collecting reports on the various health activities. In 1981, however, Maharashtra developed its own MIS. The first step was to identify all reporting units responsible for submission of data and to fix an inflexible time schedule for the submission of reports and for data compilation, analysis, review, and feedback. Thirty-nine key indicators covering all health programmes were then selected for monthly monitoring. The list of indicators was later expanded to 150, then to 157, and finally to 168. In 1987, it was again revised and reduced to 104, of which 34 are identified as key indicators. For each of these indicators, weights are assigned, performance is measured against targets given, and ranking is done as part of feedback. Monetary incentives are given to high performers.

Two additional pilot projects have been undertaken by the Maharashtra Government. In Kolhapur district, the Central Bureau of Health Intelligence introduced an integrated report form in 1988. Health personnel at various levels were trained by key trainers identified for this purpose. Nevertheless, data collected were still under-utilised. In Nasik district, after reviewing the existing records, the ESCAP Population Division launched a pilot project to design and introduce a Family Health Card. The card registers both identification data and services provided, with follow-up, for 24 months. An evaluation of the system showed a reduced workload for health workers and improved community participation in health and related matters.

Study Design: Two districts, Nasik and Kolhapur, were selected to study the status of MIS in Maharashtra. Kolhapur represented a well-managed, high-performance district, and Nasik belonged to the low-performance category. The PHCs selected from Nasik district were Aliabad and Chandor, and the Kadgaon and Radhanagari PHCs were selected from Kolhapur district. Four subcentres were selected from each PHC to collect data from male and female workers.

Family Planning Subsystem: A total of six registers are maintained by the male and female multi-purpose workers at the subcentre level. These include: Daily Diary, Eligible Couple Register, OP and CC Users Register, Sterilisation Follow-up Register, CU-T Follow-up Register, and Family Planning Stock Register. The Daily Diary is a rough notebook used for all purposes, while the Eligible Couple Register is filled in annually after a survey every April and May. Services provided are noted in the OP and CC Users Register, Sterilisation Follow-up Register, and CU-T Follow-up Register. In most cases, printed registers are not available, information duplication is common, and utilisation of information is minimal. The Monthly Report on Family Planning Performance and IEC Activities is submitted by all workers. This information is provided in loose cyclostyled sheets in Nasik and on printed forms in Kolhapur. Workers at the

subcentre level do not receive any written feedback, but a monthly performance review is conducted by PHC Medical Officers during workers meetings.

At the PHC level, only three registers (CC and OP Register, Sterilisation Register, and Cu-T Register) are commonly maintained. In addition to these, Kolhapur district maintains a Sterilisation Case Rejection Register, as well as a Sterilisation Complication Register. All these registers are maintained in a hand-written notebook, since printed forms are not available. The PHC sends a hand-written, integrated monthly report on family planning performance and IEC activities. This report has 11 sections and covers characteristics of sterilisation of CU-T acceptors, method-wise family planning performance statistics, number of sterilisation operations done by medical officers, urban and rural coverage, post-partum cases, number of camps arranged, follow-up services provided, and IEC activities carried out. The programme performance of the PHCs is discussed during the monthly meeting at the district office. In addition, written feedback is given after ranking all PHCs according to their performance.

At the district level, a total of seven registers are maintained. These include: Sterilisation Register, Laparoscopic Camp Register, Oral Pill Register, Nirodh Register, Group Meetings, OTC and Exhibition Register, Film Show Register, and Film Distribution Register. The Monthly Integrated Report on Family Planning Performance and IEC activities includes information on method-wise FP performance; area-wise laparoscopic sterilisation camps; details of laparoscopic operations done; details of surgeons conducting operations; depot holders scheme; FP performance in tribal, non-tribal, and urban areas; health centre performance; post-partum cases handled; training activities; mass education media activities; facilities for sterilisation at PHC and characteristics of acceptors. The state ranks districts by performance and sends them feedback reports every month.

MCH Subsystem: As part of the maternal and child health subsystem, three registers (ANC and Perinatal Care (PNC) Register, Immunisation and Child Health Register, and Clinic Register) are maintained at the subcentre level, and printed copies of the registers are made available to all subcentres. The female subcentre workers send only one report on immunisation and MCH. While Nasik workers use hand-written forms, Kolhapur workers have been supplied with printed report forms. As opposed to the FP subsystem, no written feedback is given for MCH.

Four MCH Registers are maintained at the PHC level in both the districts: Clinic Register, Delivery Register, School Health Register, and Immunisation Register. These registers are used either to consolidate the information or to record the services provided at PHC headquarters level. The Integrated MCH Report, sent monthly from the PHCs to the district, contains four sections. The first section deals with the number of cases attended and deaths; the second contains information on the number of cases suffering from any of seven diseases, by age of persons; the third provides information on the number of beneficiaries of immunisation services; and the fourth deals with the number of tribal and non-tribal beneficiaries. Two other reports are sent to the district every month: a summary of work done by ANMs and a report on maternal deaths. MCH performance is discussed in the monthly meeting of PHC MOs presided over by the district Health Officer. Written feedback, in terms of target achievement and rank of PHC in terms of performance, is also sent every month.

At the district level, only one MCH register is maintained and two reports sent. This district-level MCH Register is based on PHC reports and is used to prepare MCH report and UIP report. Feedback reports, which are sent from the state to the districts, rank the districts according to their performance. Programme performance is reviewed during meetings with the Director of Health and Family Welfare.

Supply Subsystems: At the subcentre level, three registers are maintained to record the stock position of medicines, vaccines, and contraceptives: Monthly Stock Book, Vitamin A Register, and Small FS Register. No report is sent from the subcentre to the PHC regarding supplies, nor does any feedback report come to the subcentre from the PHC. The PHCs, for their part, maintain six registers on supplies: Stock Book for PHC, Stock Book for FP, Stock Book for MCH, Daily Tablet and Infection Register, Contingency Stock Book, and Stationery Register. The PHCs send supply reports to the district each month, two of which deal with indents of MCH items and medicines and a third with contraceptive supplies. Finally, the district maintains one register each for the medicines, vaccines, and contraceptives. Thus, the total number of registers maintained is large, while each register contains the same information. The district sends two reports to the state every month: one covers the inventory control of contraceptives and the other covers vaccines.

Personnel Subsystem: All records on personnel are kept in the Zilla Parishad (district administration) office. However, a few registers on day-to-day administration are maintained at the PHC level. These include Attendance Register, Casual Leave Register, Late Register, Movement Register, and Increment Watch Register. The PHC sends a report on personnel position to the district every month, along with two reports on general administration, one dealing with the number of unpaid bills and the other with any misappropriations. At the district level, the same type of registers are maintained, although only one report regarding staff sanctioned and in position is sent to the state on a monthly basis.

Finance Subsystem: The PHC maintains a Contingency Cash Book, PHC Cash Book, and Family Planning Cash Book. Each of these registers contains the same information; all are used to record receipts and disbursements of money at various stages. The PHCs do not submit any reports on financial matters. The district maintains six registers -- Contingency Register, Register of Bills, Register for Cheques, Cash Book, Expenditure Register, and Register for Loans and Advances -- and submits no reports to the state.

Transport Subsystem: In Maharashtra, every PHC is provided with one vehicle. Two registers, one Log Book, and the other POL Register are maintained at the PHC. The PHC sends the district three monthly reports: the Abstract Report covers distances travelled and details of P[illegible]L; the Vehicle Utilisation report deals with the dates of servicing and the consumption of petrol; and the Report of Vehicle contains information on repair work done and renewal of registration.

The district maintains ten registers: History Book, Log Book, Dead Stock Register, Petrol Stock Account Register, Stock Register, Old Spare Parts Register, Registration and Tax Certificate Register, and Information on Drivers. The district sends the state four monthly reports, covering the accidents met with by vehicles, vehicle position, number of vehicles requiting repairs, and repairs carried out.

Conclusions: The following suggestions seek to make the MIS more effective:

1. There is a need to train workers at various levels, not only in maintenance of systems but also in utilisation of information.
2. A shift away from a performance-oriented approach is required.
3. As the key record maintained at the subcentre level, the Eligible Couple Register requires more attention.
4. Workers should be trained in planning their activities.
5. Printed registers and reports should be made available to all workers.

6. A review of the present set of indicators is needed in order to streamline systems and change weightages depending on priorities.
7. Supervision of field activities is inadequate; supervisors should be able to relate the information available to the work accomplished.

v. Family Welfare MIS in Uttar Pradesh

Uttar Pradesh is a vast fertile belt of the Indian Peninsula with 57 districts under 12 divisions and covers an area of approximately 294,413 sq kms. The population of Uttar Pradesh was found by the 1981 Census to be 110.9 million. The crude birth rate in 1984 was 39.1, and the infant mortality rate is 132. Contraceptive prevalence rates are very low.

The head of the Health and Family Welfare organisation at the district level is the Chief Medical Officer. A Deputy Chief Medical Officer looks after the family welfare programmes in the entire district and is assisted by one Administrative Officer and one District Health Education and Information Officer. The concept of Programme Officers responsible for a specific programme in the district has been abolished. In its place, the district has been divided into smaller geographical zones and one Deputy Chief Medical Officer is responsible for all programmes in the Zone. Usually there are three to four Deputy Chief Medical Officers in each district. At the PHC level, there are three medical officers, the most senior of whom is designated the in-charge medical officer. The Block Extension Educator at the PHC level is responsible for all media activities. As in other states, subcentres are manned by one male and one female worker who are in turn supervised by male and female health supervisors.

The India Population Project funded by the World Bank in 1972 had a major MIS component. External consultants were employed to study the existing systems; based on their findings, new registers and reports were designed and introduced. However, due to the lack of attention paid to the new system, when the project period ended, it was the old MIS that was retained. Attempts are once again being made to change the systems.

Study Design: All the 59 districts were ranked based on the couple protection rate and then divided into two clusters. Jhansi district was selected from the upper cluster and Basti from the lower cluster. The Harraiya PHC from the high-performance category and Naugarh PHC from the low-performance category in Basti district were selected, while in Jhansi district, the Gursari PHC and Babina PHC from the high- and low-performance categories, respectively, were chosen. Data on MIS were collected from the existing registers and reports, as well as by interviewing workers, supervisors, and medical officers.

Family Planning Subsystem: Each subcentre is expected to have a male and a female worker. Of the total 16 subcentres covered in the study area, male workers were in place only in seven subcentres. Female workers provide IUD services, distribute oral pills and condoms, and motivate sterilisation acceptors, while the male workers motivate sterilisation cases and distribute condoms. Follow-up of acceptors is generally done by female workers.

The Eligible Couple Register and Family Health Register are two registers that are used to collect baseline information and to plan activities. However, the number of eligible couples noted never exceeded more than 60 percent of the total in the area, and the Family and Household Register was supplied to only 40 percent of the subcentres. This led to considerable duplication of effort. The Tour Diary is a notebook maintained by both male and female workers to note all details on services provided for later transfer to the other registers. Separate registers are maintained for

each type of services provided at the subcentre and community levels. These include the Sterilisation Register, IUD Register, Oral Pills Register, Nirodh Register, and Movement Register.

Most male and female workers use hand-written forms to send the monthly reports. Individual reports are sent on sterilisation, IUD, Oral Contraceptives, and condom acceptors every month. The details reported vary from one subcentre to the next; while some mention targets and achievement, others provide details about total acceptors or contraceptives distributed. sector supervisors neither maintain registers nor send reports. In a few cases, they collate the information received from subcentres and submit it to the district.

At the PHC, only two consolidation registers are maintained, one for sterilisations and the other for IUDs. A separate register is maintained for IUD cases that have been provided services at PHC headquarters. A series of monthly reports by institution and by method are sent from the PHC to the district; these include the subcentre-wise Sterilisation Report, Monthly Report of Oral Pills, Monthly Report on IUD and Nirodh, Monthly Programme Report on Family Planning, and Monthly Report on Family Welfare Acceptors with one or two Children. All these reports are maintained on hand-written forms. Based on reports received from the PHCs, the districts maintain two registers, one to cover family planning acceptors by method and the other to cover the MTP acceptors. The main reports sent by the districts to the state are the Monthly Progress Report on Individual Methods, Monthly Report on Sterilisation and IUD, and Monthly Progress Report on MTP. PHCs and districts also submit an Annual Report on Eligible Couples.

MCH Subsystem: All the registers on MCH kept at the subcentre are maintained by the female workers. The main registers are the Antenatal Care Register, Birth Register, Immunisation Register, Iron and Folio Acid Register, Vitamin A Register, and OPD Register. Except for the ANC Register, all other registers are maintained to consolidate the information received from subcentres. Like the subcentres, the PHCs also send immunisation and MCH reports. Only one Consolidation Register is maintained at the district level to cover all information related to the MCH subsystem. The district, however, sends two reports, as do the subcentres and PHCs. Feedback is given verbally during monthly meetings at the PHC and district levels. Written feedback is provided by the Directorate to both the districts and PHCs, although there is usually a delay of three to four months in receiving this feedback.

Conclusions: The Uttar Pradesh Family Welfare Department has tried time and again to change the information systems. Lack of systematic planning and commitment, however, has prevented the replacement of the old systems with the new. Though an integrated report form was developed and introduced a few years back, the workers resorted to method-wise reports when the printed forms were unavailable. Another problem is the proliferation of new reports and registers due to programme changes and the introduction of new programmes. There is considerable duplication in the information collected, and utilisation of data is very low. Training of personnel in MIS is almost nonexistent.

vi. Family Welfare MIS in West Bengal

West Bengal is the fourth most populous state in India, with an estimated population of 60 million. It has a birth rate of 29 and death rate of 8.7. After the introduction of the multi-purpose scheme, many organisational changes have been brought about at the district level and below.

The Chief Medical Officer of Health (CMOH) is the overall administrative head of the district. The CMOH is usually assisted by three Deputy Chief Medical Officers of Health and three Assistant Medical Officers of Health, who, in turn, supervise the Block Medical Officers of

Health. Under each Block Medical Officer of Health are first-line supervisors called Block Sanitary Inspectors and Block Public Health Nurses. These supervise the work of the male and female multi-purpose workers respectively at subcentre level.

Steps to introduce new management information and evaluation systems were initiated in West Bengal in September 1985 as part of the Fourth India Population Project. The objectives of the new MIES were to: design new systems to suit the job responsibilities under the multi-purpose scheme; provide training in MIES to functionaries at all levels; supply printed registers for recording and reporting forms; reduce the number of registers and reports; and replace old systems with new. Before designing the new systems, a detailed study of the old systems was undertaken, and the Programme Officers at various levels were involved in the design of forms for new registers and reports. Pretesting was carried out over a three-month period in Purnea district. A manual on the new MIES was prepared and supplied to all personnel. The new MIES was introduced in a phased manner throughout the state.

Study Design: An intensive study of the family welfare MIES was taken up in two districts, Burdwan and Hooghly, which represented the low-performance and high-performance categories, respectively. Tarakeswar and Chandital PHCs from Hooghly district and Pursa and Kurmun PHCs from Burdwan district were selected for the study. From each of the PHCs, four subcentres were selected. All personnel in the selected subcentres, PHCs, and districts were interviewed, and information on both system inputs and outputs was collected.

Family Welfare Subsystem: As part of the FW subsystem, a total of five registers are maintained at the subcentre level: Eligible Couple and Children Register, Tour Diary, IUD Register, Sterilisation Follow-up Register, and Oral Pill and Conventional Contraceptive Register. Printed registers are supplied to all workers. Three types of reports are prepared by the subcentre: one annual, one monthly, and one weekly report. The annual report, the Summary Report of Eligible Couples, contains information on the age of contraceptive acceptors and parity levels. The common complaints regarding this report are that the health workers are not adequately trained in preparing and using tables to plan and monitor work. On a monthly basis, each worker submits information on printed forma on programme performance and stock position. The contents of this report form the basis for the monthly worker performance review at PHC monthly meetings. During the second and third weeks of every month, subcentre workers prepare a hand-written report on performance by method. No registers are maintained at the sector level, although first-line supervisors prepare a sector-level monthly performance by consolidating all worker reports. This consolidated register is submitted to the PHC. There is no written feedback to workers. Although sector-level meetings are held on all Saturdays except the first of the month in order to review and monitor performance, there is no systematic record of the proceedings and no follow-up action on decisions reached.

At the PHC level, the Family Welfare Review Register is maintained for the review of method-wise performance of subcentres and individual workers. However, this information is not maintained in standardised forms. A second register, the IUD Payment Register, contains details on IUD acceptors, motivators, and inserters; a hand-written book is used for this purpose. The details maintained in this register vary from PHC to PHC. The Payment Register for Sterilisation is maintained at PHC level for payment of incentive money to acceptors, motivators, and surgeons. In some PHCs, a distinction is made between cases provided with services at PHC headquarters and those provided services at other locations.

Each PHC submits two reports on family planning. The Integrated Monthly Report covers 15 different areas: malaria, family welfare, ORT, MCH, principal communicable diseases, training, mass education and health education, cold chain facilities, immunisation, tuberculosis, position of

subcentres with staff, vacancies, characteristics of acceptors of IUD and sterilisation, stock position of medicines and vaccines, and position of vehicles. The quality of information on family welfare, immunisation, and ORT is generally better than other programme components. The summary of Eligible Couples is another report sent by the PHCs to the district every year. While printed forms are available for the first report, the latter is maintained on hand-written forms.

There is no written feedback given to the PHCs. Although monitoring meetings are held at the district level for all PHC medical officers and block-level supervisors, no agenda is prepared for the meetings. The review of performance revolves around target achievement and input requirements.

The district level maintains two registers. The Receipt Control Register records the date PHCs submitted their monthly reports and allows delayed submissions to be discussed in the monthly meetings. The other register, known as the Family Welfare Register, gives performance statistics by method and by centre. Both these reports are maintained on hand-written forms.

The district sends five reports. The Performance Report on Family Welfare is a telegraphic message sent before the seventh of every month to the state Family Welfare Bureau and followed up by a detailed report on performance. The Technique-wise Tubectomy Report lists tubectomy operations by technique used. A break-up of the Eligible Couples Report is submitted every year with details on family welfare methods used, number of living children, and age of wife. The district Review Report is prepared every month before the district monitoring meeting. This report contains information on performance by centre in regard to family planning methods and immunisation.

MCH Subsystem: MCH services include ante-natal, natal, post-natal care of mothers; immunisation of infants and children; treatment for minor ailments of children; treatment for diarrhoeal diseases; and nutritional services. Some of the registers, such as the Eligible Couple Register and Tour Diary described earlier, are common to both family planning and MCH services. In addition, six other registers are maintained at the subcentre level. These include: Antenatal Case Register, Post-natal Case Register, Immunisation Register, Other Immunisation Register, and Patient Register. The subcentres also submit three reports (Weekly Report, subcentre Monthly Report, and sector Monthly Report) which have already been discussed in th. section on the FP subsystem.

At the PHC level, only the Review Register (Immunisation) is maintained. This contains information on subcentre and worker performance and serves as the basis for the monthly report to the district. There is no written feedback, but a performance review is carried out through monthly and weekly meetings with workers. Similarly, the district maintains a Review Register (Immunisation) based on monthly performance reports submitted by the PHCs. The other register maintained by the district level is the Receipt Control Register. In addition, the district sends the monthly District Review Report, the UIP Report, and the MCH Report. It does not receive any feedback reports.

IEC Subsystem: Most of the IEC activities carried out by the male and female workers are included in the Tour Diary; no separate registers are maintained for this purpose. IEC activities are reported on as part of the subcentre Integrated Monthly Report. At the PHC level, the Stock Register (IEC) is maintained on materials received. The sector reports on IEC activities are consolidated and included in the Monthly Integrated Report. The district follows the same procedures for registers, but prepares a separate IEC quarterly report which summarises all IEC activities carried out in the district. The form for this quarterly report is supplied by the Mass

Media Wing of the Central Government. There are no feedback reports, and review meetings only rarely touch upon IEC activities.

Supplies Subsystem: Medicines, vaccines, and equipment are procured at the district level either from the family welfare stores or from the central medical stores of the state Directorate. Some medicines are also purchased at the district level. The subcentre maintains a Stock Register of Medicines and Vaccines, in some cases separately by male and female workers, in others, in one combined form. No printed forms are available for this purpose. There are no separate monthly reports. The Stock position on vaccines and medicines is part of the Integrated Monthly Report, although few the workers fill in the details. Four registers are maintained at the PHC level, two by the FW section and two by the general section. Each section maintains one register for medicines and another for equipment. A few PHCs also maintain a separate register for UIP vaccines. The Integrated PHC Monthly Report has a section on stock position; however, the information provided is largely inadequate and incomplete.

At the district level, there are two stores for medicines and equipment. One of these stores is with the office of the Deputy Chief Medical Officer of Health, while the other, the District Reserve Stores, is with the Chief Medical Officer of Health. The first maintains three stock registers, and the procedures for all registers is the same. While a few registers have printed forms, others are maintained on hand-written forms. No routine report is prepared at the district level on supplies. When the district requires information on certain supply items, it makes ad-hoc requests.

Finance Subsystem: Allocations are made under different financial heads for different programmes such as family welfare, UIP, MCH, ORT, etc. Budget provisions made under these programmes are generally allotted to the districts through the audit, accounts, and verification branch of the Directorate. For each head of account, a separate register is maintained. The main registers maintained at the PHC level are: Bill Register, Transit Register, Cash Book, Payment Register (IUD), Payment Register for Sterilisation (PHC Cases), Payment Register for Sterilisation (outside cases), and Acquittance Roll. A quarterly expenditure statement is sent from the PHC to the district, giving information on the allotment of funds and amount of expenditure for each head of accounts. The district follows the same procedure for the maintenance of registers and for sending reports.

Personnel Subsystem: At no level is any information on personnel systematically recorded, updated, or compiled. Data on the vacancy position of different categories of staff are collected from the district from time to time. A similar ad-hoc procedure is followed for both preservice and inservice training.

Transport Subsystem: Neither the block nor district level maintains any register on vehicles apart from the log book. There is no collection or flow of information on vehicles allotted, vehicles in roadworthy condition, or maintenance work carried out.

Conclusions: In West Bengal, the introduction of the new MIES was preceded by training of all personnel in the system. However, the training imparted has been inadequate, and the utilisation of information remains low. The printed forms and integrated reporting have reduced the workload of personnel at various levels and are welcomed as a step in the right direction. Although a considerable amount of information is generated, it is not utilised for planning and decision-making at any level, as monitoring of targets and performance takes precedence. Centralised authority, over-emphasis on quantitative achievements, and lack of motivation among programme administrators are the main reasons for the under-utilisation of information.

Beyond a reduction in the number of registers or standardisation at the subcentre level, there is additional room for improvement. Few registers are supplied in printed forms to workers. The possibility of reducing the total number of registers to five is being explored at present. In many cases, the roles and responsibilities of the officers and staff are not well-defined; the many overlapping areas of activity result in confusion, and therefore both the quality of work and the information system suffer. There is a need to create a separate budget provision for printing of forms, training, supply of stationery, etc. There should also be a central authority to review MIS from time to time and to discard the unnecessary forms introduced by various levels. Currently, outputs are given more importance than inputs, particularly in regard to financial matters. As this confusing financial information situation has caused a sense of helplessness at the block and district levels, the expenditure aspect of the programme should be brought under the regular MIES.

c. MIS Experiments in Study States

MAHARASHTRA

1. 1981 -- State-developed Systems

   New reporting forms were introduced and inflexible time for submission of reports and feedback was fixed.

   First report forms were developed on the basis of 39 key indicators. Later, the number of indicators was increased to 168 and then finally reduced to 104.

   These new reporting forms replaced all the old reporting forms followed for programme performance.

2. 1988 -- CBHI-sponsored Project in Kolhapur District

   New records and reporting forms were introduced in the district.

   All health and family welfare personnel were trained in new MIS with the help of 16 key trainers.

   Male and female workers were advised to submit common subcentre report.

3. 1987 -- ESCAP-sponsored Project in Nasik District

   A family card system was introduced in 8 PHCs in Dindori Block of Nasik District.

   The cards, one retained by the family and the other kept at the subcentre, contain identification details and data on services provided.

KERALA

New integrated report form was introduced in 1986 in all districts of the state.

New form consists of 104 indicators divided into 6 major categories. Twenty of total indicators are on inputs. System was pilot-tested in a couple of districts and later extended to all districts.

PHCs were first advised to send information directly to the Directorate and later through the districts. Computerisation of performance is done at Directorate level and feedback is given to districts and PHCs. Feedback reports reach very late to be useful. The reporting system runs parallel to the old system.

Kerala has also designed five new registers viz., The Family, The Child, The Mother, The Acceptance, and The Stock. These registers are to replace all the existing registers at subcentre level. Pilot-testing of the registers has been planned in Palghat District at the time of this study.

WEST BENGAL

As part of the India Population Project, in 1986 new registers and reports were designed involving the family welfare personnel at various levels. Integrated report forms covered subcentre, sector, and PHC levels. Both input and output indicators were included and printed forms were supplied to all units in the state. This integrated report form replaced all other old reports.

Eligible Couple Register was withdrawn and new register called Eligible Couple and Children Register was designed and introduced in all subcentres in the state. All personnel up to the PHC level were given training in maintaining and using the new information systems. MIS module was introduced in both induction and in-service training programmes. A standardised Clinic Register is being designed to replace all other registers at the subcentre level.

UTTAR PRADESH

As part of the India Population Project, with the help of external consultants, three new registers were developed to replace all old registers at subcentre level. These registers were introduced in selected districts.

HIMACHAL PRADESH

No major changes have been brought about or major experiments conducted in Himachal Pradesh.

ANDHRA PRADESH

Andhra Pradesh experimented with the systems in three districts as part of the India Population Project in 1983. Before new systems were developed, earlier systems were evaluated and shortcomings were noted.

New registers at the subcentre level were designed and integrated monthly reporting fom covering all levels up to the district was developed. Old reporting forms continue from district of state. Manpower in the form of a statistical officer to collate and process data at district level was added. The state government decided to extend the system to all other districts.