achment 1. 68

ETHICAL REVIEW COMMITTEE, ICDDR,B.

Date 20 July 1982

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plication No. 82-036

Supporting Agency (if Non-ICDDR,B) USAID

itle of Study MCH-FP Extension Projects Research Protocol*

Project status:
(X) New Study
( ) Continuation with change
( ) No change (do not fill out rest of form)

Circle the appropriate answer to each of the following (If Not Applicable write NA).

1. Source of Population:
   (a) Ill subjects — Yes (No)
   (b) Non-ill subjects — (Yes) No
   (c) Minors or persons under guardianship — Yes (No)
2. Does the study involve:
   (a) Physical risks to the subjects — Yes (No)
   (b) Social Risks — Yes (No)
   (c) Psychological risks to subjects — Yes (No)
   (d) Discomfort to subjects — Yes (No)
   (e) Invasion of privacy — Yes (No)
   (f) Disclosure of information damaging to subject or others — Yes (No)
3. Does the study involve:
   (a) Use of records, (hospital, medical, death, birth or other) — (Yes) No
   (b) Use of fetal tissue or abortus — Yes (No)
   (c) Use of organs or body fluids — Yes (No)
4. Are subjects clearly informed about:
   (a) Nature and purposes of study — (Yes) No
   (b) Procedures to be followed including alternatives used — Yes (No)
   (c) Physical risks — Yes (No) NA
   (d) Sensitive questions — (Yes) No
   (e) Benefits to be derived — Yes (No)
   (f) Right to refuse to participate or to withdraw from study — (Yes) No
   (g) Confidential handling of data — (Yes) No
   (h) Compensation &/or treatment where there are risks or privacy is involved in any particular procedure — Yes (No)
5. Will signed consent form be required:
   (a) From subjects — Yes (No)
   (b) From parent or guardian (if subjects are minors) — Yes (No)
6. Will precautions be taken to protect anonymity of subjects — (Yes) No
7. Check documents being submitted herewith to Committee:
   - ✓ Umbrella proposal - Initially submit an overview (all other requirements will be submitted with individual studies).
   - ✓ Protocol (Required)
   - ✓ Abstract Summary (Required)
   - ✓ Statement given or read to subjects on nature of study, risks, types of questions to be asked, and right to refuse to participate or withdraw (Required)
   - ✓ Informed consent form for subjects
   - ✓ Informed consent form for parent or guardian
   - ✓ Procedure for maintaining confidentiality
   - ✓ Questionnaire or interview schedule *

* If the final instrument is not completed prior to review, the following information should be included in the abstract summary:
1. A description of the areas to be covered in the questionnaire or interview which could be considered either sensitive or which would constitute an invasion of privacy.
2. Examples of the type of specific questions to be asked in the sensitive areas.
3. An indication as to when the questionnaire will be presented to the Ctte. for review.

e agree to obtain approval of the Ethical Review Committee for any changes involving the rights and welfare of subjects before making such change.

James F. Phillips — Principal Investigator

Trainee

* Short title of the study. Full title appears on the reverse of this page.

* Title: The MCH-FP Extension Research Project: An Experiment in the Transfer of Some MCH-FP Strategies from Special Non-Governmental Projects to the Government Health, Population Control and Family Planning Services, in Two Thanas of Bangladesh.

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SECTION I -- RESEARCH PROTOCOL

1. Title: The MCH-FP Extension Research Project: An Experiment in the Transfer of Some MCH-FP Strategies from Special Non-Governmental Projects to the Government Health, Population Control, and Family Planning Services in Two Thanas of Bangladesh

2. Principal Investigator: James F. Phillips, Ph.D.

3. Co-Investigators: A.P. Satterthwaite, M.D. (tentative)
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Dr. Mustaqul Huq

4. Starting Date: October 01, 1982

5. Completion Date: December 31, 1984

6. Total Direct Cost (All Externally Funded): US $ 276,458.00

7. Scientific Program Head:

This protocol has been approved by the Program Development Committee.

Signature*

Chairman: W.B. Greenough
William B. Greenough III, M.D.

Date: 09-08-82

*This signature implies that the Program Development Committee Chairman takes responsibility for the planning, execution, and budget for this particular protocol.

8. Abstract Summary: A common problem in community health service and population research is that findings from special demonstration projects are often under-utilized for policy and action. This protocol reviews the record of special projects in Bangladesh and concludes that the Bangladesh Government appears to have failed to implement some of the more promising service strategies. A review of the international literature shows, moreover, that this problem is, by no means, unique to Bangladesh: Demonstration projects, research, and technical innovations are often not effectively used for policy or programs. In the course of a review of this literature we extract themes bearing upon the central question of the proposed research: Can innovations of special projects in rural Bangladesh be absorbed by the Ministry of Health and Population Control (MOHPC) Service System? If so, then what are the promising strategies and what are the appropriate methods for introducing institutional change? If not, then, what are the specific operational problems that represent barriers to research utilization when a change effort is undertaken?

In this study we propose to post a team of change agents to work with the MOHPC staff in two thanas on the problem of transferring health and family planning service strategies to the MOHPC system. Research will involve a variety of methods to monitor programme inputs, operations, and output over time. Intervention will include comprehensive health and family planning training in the two thanas, counterpart support by trained ICDDR,B paramedics working with MOHPC staff in selected unions of those thanas, and field demonstration of health service methods and technology in Matlab and elsewhere.

Work will commence on October 01, 1982, extend for three years and encompass four stages of implementation in Sirajgonj and Noapara.

Abstract Summary In Particulars

1. (Describe the requirements for a subject population.)

   There is no subject population in the proposed study in the sense that we are training Government workers to provide services. There is a subject population in the sense that Ministry of Health and Population Control workers will be studied and will be informed of the nature of the research prior to work.

2. (Describe risks to the population.)

   There are no risks; social, legal or otherwise.

3. (Describe procedures for protecting against or minimizing potential risks.)

   This is not applicable except possibly if Government Officials were to somehow misperceive or research on workers as information that could be used for supervisory or disciplinary action. All such interviews are unlinkable to workers and procedures will develop prior understandings that information is being collected for research purposes only.

4. (Describe procedures for safeguarding anonymity.)

   Village questionnaire forms will enumerate individuals by name. In subsequent rounds names will not appear. In any case no forms will be released and access is restricted.

5. (Signed consent.)

   The ICDDR,B will not be providing services. All consent procedures of the MOHPC will be in force when ICDDR,B personnel are present, but we will have no authority over consent procedures. In the unlikely event that we become directly involved in service delivery in our capacity as counterparts, we will use Matlab (ICDDR,B) consent forms and procedures now used in the Community Health Services Project. These, in turn, were modeled on the MOHPC procedures.

6. (Interview procedures.)

   Respondents in questionnaires have the right to refuse. Interviews vary in length, the longest taking an average of 40 minutes.

7. (Possible benefits.)

   Our aim is to improve the quantity and quality of MOHPC primary health care in two thanas. If this succeeds, research should show reductions in fertility mortality and morbidity of tetanus (hence neonatal mortality). This research will also aim to identify more general operational problems with implications for national health care delivery.

8. (Records)

   Sample vital registration records will be maintained on the Matlab/Teknaf DSS model. Before and after interviews will be conducted of villagers and MOHPC service providers.

Procedure to Maintain Confidentiality

Village questionnaire forms will enumerate individuals by name. In subsequent rounds names will not appear. In any case no forms will be released and access is restricted. Staff with access to the identifying information are trained and aware of its confidential nature.

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SECTION II -- RESEARCH PLAN

A. INTRODUCTION

1. Objectives

The past decade has witnessed the implementation of several health and family planning projects in rural Bangladesh, each of which has achieved a measure of success. The Companigonj Health Project,[1] the Matlab Family Planning Health Services Project,[2] the Gonoshasthya Kendro Project,[3] and the Bangladesh Rural Advancement Committee are but a few of the special projects which have been successfully implemented in rural Bangladesh villages. These special projects show more success than the national efforts to achieve demographic change and health development. Despite a strong policy and financial commitment from the Government of Bangladesh (GOB) and considerable foreign assistance, there is no evidence, as yet, that the national MCH and Family Planning Programme has produced demographic effects. On the health side, certain vertical health projects, such as the smallpox eradication campaign and malaria control, have achieved marked success, but rural health services which provide sustained primary health care in the village have been relatively difficult to develop and remain poorly implemented to date. There is a clear need to undertake research designed to foster replication of the success of the special projects and utilization of research outcomes. This protocol proposes a paradigm for utilization of ICDDR,B field research findings in Matlab for policy and programme development.

The approach that we propse to extend to the government is not strictly limited to the Matlab experience, however. While family planning is successful in Matlab and certain MCH strategies are well developed there, the Bangladesh primary health care literature suggests that there are other strategies that hold promise for Bangladesh. Our objective is therefore broad: to test the capacity of the GOB health services system to absorb innovations that have been successfully tested in special projects. This objective is to be pursued on the premise that innovations can be instituted in the GOB system without major structural change. Thus we accept the organizational model that the existing GOB programme represents and propose to work within it as change agents.

---

[1] See the reports of Christian Commission for Development in Bangladesh on Companigonj Health Project in Noakhali (CCDB, 1980).

[2] See the report of Bhatia, et al. (1980) on the Matlab Family Planning Health Services Project, and a study by Phillips, et al. (1982) which assesses its effects.

[3] See the report of Coombs (editor) in his book "Meeting the Needs of the Rural Poor".

A subsidiary objective to testing the transferability of innovation is researching the problems and difficulties in doing so. Failure to research the operational problems of transferability is tantamount to fielding yet another special project with special resources. It is thus important to be clear from the outset that an objective of this proposed work is not to provide direct health services. We aim instead to collaborate with the Government in diagnosing the critical health problems of three extension thanas, to assist in training and staff development and to evaluate the impact of our efforts to that end. Such an approach differs markedly from the ICDDR,B research stations where the direct provision of services is a vital component of research.

We conclude, in summary, that the purpose of this extension project is fostering research utilization and researching the utilization of research in the area of maternal and child health and family planning. The central hypothesis of this project is that the GOB can successfully utilize MCH-FP service innovations from special projects without incremental resources or major institutional change.

2. Background

This review will be presented in five parts: First, we present an overview of the central policy questions that emerge from the literature on primary health care and family planning. Next, we review the literature on the utilization of research with the aim of identifying the general elements of our efforts to address those policy questions. Thirdly, we review the Bangladesh institutional setting, specific operational problems of human service organizations in this country, and implications for the prospects of fostering change. Fourth, we review the operational lessons learned from special projects in Bangladesh in the broad area of primary health care and family planning. Finally, we summarize the background literature implications for project objectives that are congruent with our discussion of general issues in research utilization, the unique problems of Bangladesh, and our inventory of lessons learned from special projects.

2.1 Primary Health Care and Family Planning: A Commonality of Policy Issues

In the decade of the seventies, intense international attention was addressed to the question of whether public policies and programmes of third world governments can reduce fertility and mortality in the absence of concomitant social change and economic development. While the specific issues involved in the literature on these questions differ for the health and family planning fields, this general question is common to both fields. Let us review each, in turn.

2.1.1 Third World Government Rural Health Programmes: Can Current Policy Succeed?

The decade of the seventies has been among health planners, politicians, social scientists and the international and national development specialists growing awareness that most governments in the Third World have failed to meet the basic health needs of the rural masses. Opinions differ on the causes of this problems, on its nature and on the possible remedies to be used.

E de Kadt and Malcolm Segall's (1981) introduction to a study on health needs and health services in rural Ghana notes that ... "There is little agreement over what should be done. There is common if not ubiquitous expression of intent to pay more attention and devote more resources to rural areas, but it is rarely translated into action to the extent, for instance, of rural areas receiving the greater part of increases in health services budgetary allocation. Currently in vogue, also, is the concept of community participation in health activities or 'health by the people'; again, what has so far been put into practice in most countries is meagre beside the weight of advocacy of the approach particularly in international circles. Many conceptual problems remain inadequately explored."

But more fundamental, perhaps, than the problem of a paucity of action is the question of priorities. If development is a necessary precondition to primary health care delivery, then economic development programmes merit priority in national health planning. Historical evidence supports this view. Evidence suggests that the major reductions in mortality in Western Europe in the Nineteenth Century antedated the development of modern medicine and were largely a consequence of social change and household sanitation (cf. de Kadt and Segall, 1981, pp. 397-404 and Illitch, 1975). Nevertheless, one can question the premise that the history of Western Europe affords evidence that historical conditions lead to health development. There are conditions for similar changes in contemporary South Asia. Health advances in certain socialist countries and in Kerala and Sri Lanka, for example, have improved markedly in recent years.

The conclusion might be drawn that a drastic reduction in infectious and communicable diseases is easy, once the commitment is there. Also, the weapons of contemporary pharmacology now exist; they can be (and are being) applied to bring about reductions in mortality which, in Western Europe, had to await improvements in living standards. As de Kadt and Segall note:

"... it is only on rather different grounds that it is possible to sustain the argument that the reduction of illness has to await the reduction of poverty and underdevelopment in the Third World today. These grounds are that poverty and underdevelopment inevitably affect the working of the health services as they affect every other aspect of society, preventing them from being effective. Low budgetary resources limit the amount that can be spent on health services and more important, underdevelopment implies all the inefficiencies which lead to poor use of the resources available. Some would point particularly to the tendency at all levels for the resources to be misallocated, favouring the better off. Even so, all that may still lead to one of two conclusions: either that action can and should be taken against the features of underdevelopment within the health services as part of the effort to overcome underdevelopment in the society; or that nothing of any significance can be achieved until more decisive changes take place in the overall organization of the society and economy. In contrast, to the difficulties encountered by government projects, non-governmental pilot projects from more than ten private projects associating various components of primary health and nutrition care suggest that mortality declines were notably more rapid in a clear majority of the project sites than would have been expected in the projects absence..." (and that) "... infant and child mortality can be reduced by one third to one half or more within 1-5 years, at a cost of under 2 percent of per capita income."

Evidence appears to show that existing technology can be applied at affordable costs, to make major improvements in the health of the most disadvantaged groups. Two kinds of evidence support this conclusion: (1) Some developing countries have achieved much lower rates of infant mortality than otherwise similar developing countries. The means by which this has been achieved are not fully understood and there thus is much debate about transferability of programmes and a clear need for research on the transferability of strategies (see, for example, Ratcliffe, 1978). (2) Evidence from a pilot and demonstration projects, in number of different developing countries, have shown that major improvements in health can be achieved at reasonable costs in low income communities, rural and urban. Although each project is different in detail, there are several important characteristics shared by most of them which together make the elements of primary health care. Bell (1980) cites six reasons for the relative success of special projects:

"- These health activities have been designed and carried out with major participation by the community to be served and at least some of the resources needed have been mobilized in the community.

- They have been carefully tailored and selected to fit the actual circumstances of different communities and they vary widely, therefore, in content depending on the level of income, ecological characteristics, health, problems, and other aspects of the particular community.

- They have been dependent on paramedical personnel of appropriate kinds, with support in the form of technical knowledge and supplies from secondary and tertiary echelons to which emergency cases could be referred.

- They have been broader than medical activities and included other elements such as nutrition, water supply and health education as well as immunizations and treatment for specific illnesses.

- They typically emphasize maternal and child health including family planning and often reach communities not previously reached by family planning services.

- To be successful they need to be part of an array of development efforts in such fields as education, agriculture and other income producing activities."

The critical research issue is therefore as follows: for a particular country, do the causes of the failure of the government health services to meet the needs of the rural masses lie in an implementation failure where misdirected training, insufficient supervision or lack of support can be held responsible, or do the causes of failure relate to the basic 'model' of the health services. If it is the former, then the solution lies in correcting operational deficiencies. If it is the latter, then changes in supervision, new refresher courses or improved supply procedures and the like are not likely to remove the problems identified. Rather, their origins must be sought in 'model failure' and only a reformulation of basic institutional concepts and a restructuring of the health care system around them can to lead to improvement. A central question of the research to be conducted in this protocol is thus whether Bangladesh can achieve health development with Government managed services in the absence of major prior social or economic change.

In summary it appears that, in most developing countries, the government health services have failed to meet the needs of the rural masses, on a national scale. In contrast, small-scaled projects, often associating research and delivery have shown significant results, even in the absence of socioeconomic changes. The question is therefore: What can national health services learn from these research projects?

2.1.2 Third World Population Programmes: Can Current Policies Succeed?

The decade of the 1970s witnessed a debate on the efficacy of family planning programmes that parallels the central issue in the primary health care debate. As in the case of literature on health policy the historical evidence derives from the experience of Europe and North America: major declines in fertility occurred without the introduction of contraceptive services (Carr-Saunders, 1936) presumably because reproductive motives changed in response to mortality and social[1] change. This theoretical perspective, which holds that reproductive motives must change before contraceptive use can have major effects, has brought into question the rationale for family planning service programmes (cf. Davis, 1969; Blake and Das Gupta, 1975; Hauser, 1969).

Authors have noted that there is no conclusive evidence that national population programmes can initiate fertility change in the absence of social change and economic development (see, for example, Hernandez, 1981)[2], although areal analysis suggest that the intensity of family planning programme effort is related to the pace of fertility change in a number of countries (Mauldin and Berelson, 1978). Nevertheless, there is no evidence of systematic fertility change in either India (Visaria and Visaria, 1981), Pakistan (Yusuf, 1981), or Bangladesh (cf. Committee on Population and Demography, 1981 and Hong, 1980) and thus there is no clear indication that strong government commitments to reducing fertility in this region will succeed.

The apparent failure of official policy in this region is often taken as prima facie evidence that economic development must occur prior to demographic change (see, for example, UN, 1975) in analogy to the argument that improvement in primary health care is contingent upon economic development.

The record of special projects, however, is more promising that the record of Government population policies. In India, for example, several successful special projects have integrated rural health services with family planning delivery and have achieved significant effects.[3]

---

[1] A useful discussion of the demographic transition is in Coale, 1973.

[2] Several studies have documented pronounced fertility changes following the introduction of family planning services (see, for example, Knodel, et al. 1980). Most countries with vigorous national programmes have experienced major fertility declines (cf. IBRD, 1974 and Cho and Retherford, 1973).

[3] See, for example, the reports of the International Confederation of Midwives (1978) on three projects in Moharashtra and the Gandhigram Project in Tamil Nadu (Pisharoti, et al. 1971).

In Bangladesh, the Matlab project provides the best evidence of the potential impact of family planning (Phillips, et al. 1982) although several other special projects have undoubtedly had effects (see, for example, Timm et al. 1980). Thus the challenge for researchers is to test the transferability of the success of special project family planning to the Government system, just as it is important to test the transferability of health service interventions. We conclude, in summary, that the record of the performance of primary health care services and family planning programmes is mixed: where government programmes have failed, special projects often succeed. It is thus important to research the utilization of special service project innovations. We therefore turn to a review of the literature on research utilization before we examine elements of special projects that merit transferal to the Government system.

2.2 The Utilization of Research: The International Literature

There is a vast literature of knowledge utilization and even a cursory review leads to the conclusion that the problem of translation of research into action is not a problem that is unique to Bangladesh[1]. While many of the problems that arise in the utilization of field experiments for policy are unique to particular settings, some considerations have a special relevance to the Bangladesh situation. We first review the more salient issues that represent barriers to research utilization, next some general principles that emerge from the literature that can guide our overall strategy in this project, thirdly a tentative research utilization paradigm, and finally a review of the stages of introducing planned change.

2.2.1 Principal Barriers to the Utilization of Research in Human Service Organizations

Barriers to research utilization can be simply classified into four general categories: economic, structural, historical and operational relevance.

a) Economic. Special projects are often operated with special resources. Since research and service costs are indistinguishable it is not clear whether it is feasible to utilize the innovation

[1] See, for example, the report of the Human Interaction Research Institute (HIRI) entitled 'Puting Knowledge to Use: A Distillation of the Literature Regarding Knowledge Transfer and Change'. The report reviews several medical, agricultural, and indistrial innovations in the United States and notes that the mean duration between the time of development to the time of public utilization was 19 years. Since this gap is not fully explained by technological problems the report formally reviews factors that explain delay in the adoption of research findings.

for action[1]. The problem of costs as a barrier to utilization is exacerbated when accounting procedures of special projects differ from the procedures of the target organization. A critical problem is the issue of salaries for workers: special projects are designed to be implemented quickly so that priority is placed on paying relatively high salaries, on minimizing procedural details, and on having good equipment in adequate quantities. This need for rapid implementation creates financial procedural differences that, while having no bearing on the scientific merit of the proposed innovation, can represent an important rational for their rejection (Havelock, 1969a).

b) Structural. Even if finance is not an issue, the incompatibility of research design with the institutional structure that will absorb results can be an important barrier to utilization (see, for example, Glaser, 1973). Organizations that are structured differently from the experimental situation are slow to adopt procedural changes that are suggested by results (Lippitt et al., 1958; Miles, 1964; Rubin et al. 1974) and in any case, bureaucratic structures tend to resist change because they are monocratic and stress conformity rather than change (Thompson, 1965 and 1969). This is particularly problematic if the target organization defines the role of workers by emphasizing formally defined job descriptions (Aiken and Hage, 1968) as opposed to formally prescribed goals and clearly developed mechanisms for achieving them (Glaser et al. 1967).

One therefore expects, a priori, that South Asian Government institutions would be more cautious in the utilization of health services research than other large scale organizations: roles are formally and strictly defined, lines of authority are classically bureaucratic with little scope for deviation or change except through senior executive order.

It is reasonable to assume that structural difference exacerbate the problem of utilization where there are procedural differences, as well. The Matlab project, for example, not only has a separate structure from the GOB which produces a different staff composition and worker density, there are numerous procedural differences in supervision, pay scales, training, logistics, and the like which so thoroughly isolate the project from the GOB system that utilization of results is impaired.

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[1] In a review of projects Zaltman et al. (1973) conclude that this incompatibility of costing is a critical problem — costs to the researcher cannot be compared, in detail, with the potential costs of the innovation to the utilizer. All major reviews of utilization cite this problem (Davis, 1973 and 1971; Havelock, 1969a; Glaser, 1973; HIRI, 1976).

c) Historical. A potential barrier to the adoption of innovation is the institutional capacity to undertake change: the ability of leaders to understand the operational implications of scientific research, the commitment to undertake change, the complexity of the administrative changes required and other factors that characterize the institutional climate for innovation and change. While there are volumes of literature addressed to such issues, we shall focus upon a few themes that may have bearing upon research utilization in Bangladesh.

It is obvious that regional history profoundly affects the capacity of institutions to innovate. The structural problems noted above are bureaucratic legacies of colonial regimes. Such consumer organizations are less likely to be innovative than institutions from otherwise similar historical settings because colonial bureaucracies are designed for maximizing the power of a few with highly developed formalization of rules, narrow spans of control, and numerous hierachical levels -- features developed to prevent change (see, for example, Banerji, 1974).

The recent history of an organization can also impair its capacity to innovate or change. An obvious factor affecting utilization of research is the personality of key decision makers and their commitment to change (cf. Havelock, 1969a and Glaser, 1973). But also important is the institutional climate: civil service tenure rules (Griffiths, 1964), vested interests in the existing system (Watson and Glaser, 1965), and professional interests in preventing change all retard utilization of research.

d) Operational relevance. A barrier to research utilization is the fundamental incongruence between the goals of research and operational needs. For research to be translated into action to must be communicated to decision makers. Scientists testing hypotheses and theories, however, often have little to say that is directly relevant to administrative operations (Van de Vall and Bolas, 1980). Thus the greater the scientific rigor (i.e. reliance upon theory) the less likely that social research will affect social policy (Boalt, 1969; McTavish et al. 1977). The Matlab Family Planning Services Project is an example of this incongruence between science and administration. Work was undertaken to test the hypothesis that health and contraceptive services would initiate fertility change in rural Bangladesh -- an hypothesis that is puzzling to administrators who have been working in a programme that, for 20 years, has been premised on an acceptance of this hypothesis. While it is essential to test underlying theories governing social policy as the Matlab study has done, scientifically rigorous tests of the Matlab variety are often irrelevant to operations: achieving conditions for testing hypotheses required rapid deployment of a trained and effective work force so that the study could examine the socio-demographic effects of comprehensive family planning

services. Achieving this required the investigators to insulate the project from contaminating factors and to free the project from the administrative limitations of Government operations. While it could thus be argued that Matlab is not an operations research project, it is nevertheless clear that the operational value of the rigorous Matlab study is demonstrated by what it did not show: if optimal conditions had failed to achieve results the entire rationale of the GOB population programme would have been subject to challenge. Thus we are in no respect critical of the Matlab study; rather, we argue that the question of addressing the administrative implications of the research is an issue that is best pursued in a series of operational research projects outside of the Matlab area.

Achieving congruence between research aims and aministrative needs is greatly facilitated by collaboration between research scientists and practitioners. Of primary importance is the joint identification of a research focus that reflects the needs and concerns of those who must utilize results (cf. Fairweather, 1967; Garner, 1972; Glaser and Taylor, 1969). In centralized highly formal bureaucracies it is important for this collaboration to involve the top management (cf. Fairweather, 1967 and Glock, 1961).

2.2.2 Fostering Research Utilization and Change in Human Service Organization

The barriers that have been noted above are not insurmountable. Specific attention to such problems, is by necessity, incorporated into any formal effort to foster change in large-scale organizations. In addition to the need to understand and deal with these general problems, there are approaches to achieving change which have been successfully implemented elsewhere and may be applicable to our situation. We shall discuss a few of these approaches, in turn:

a) Change agents. It has long been recognized that the adoption of innovations can be expedited by assigning change agents to the target organization (see, for example, Watson, 1945). "Change agent" is a term which applies to consultants whose job is solely to introduce operational changes in organizations. The role of change agents in industrial organizations has developed considerably in the past 2 decades from mere conveyors of new facts and ideas, to facilitators and catalysts who advise organizations, not only about the nature of innovations, but also about the process of organization development that can institute an innovation. Extensive research is available which shows that the utilization of research is greatly enhanced by assigning outside experts to an organization for the sole purpose of fostering change. Typically this role has four functions: (1) change agents serve as conveyors or information

about promising leads (whether involving technological innovations or operational strategies); (2) they are consultants who assist in the identification of problems and resources, process observers and advisors; (3) they serve as trainers; and (4) they are facilitators who provide leadership when needed, defense of strategies, and political support for the change process if possible (see HIRI, 1976 and Havelock, 1969b).

Considerable research is available which suggests that the composition of change agent teams affects their degree of success. Often teams of counterparts are more effective than a few experts who interact with top management, particularly if change agents operate a several levels of the target organization so that peer interaction is facilitated (Halpin, 1962). This approach has been especially successful in China where the promoters of innovations are typically specially designated successful users. Thus model communes are established in which model workers at each level serve as counterparts to workers at corresponding levels (see Chen, 1977 and Chen and Miller 1975).

b) Interpersonal communication. Scientists typically communicate their findings to others in written reports or technical conferences. These media, while they serve the needs of scientists communicating among themselves, are less useful to managers who typically rely upon verbal communication and practical demonstration. Thus scientists place a dysfunctional reliance upon printed media in situations more suited to frequent and open verbal communication between change agents and recipients. This informal style of information transfer is often an essential element of research utilization (cf. Glock, 1961 and Mackie, 1974). Achieving this, in turn, is contingent upon the concurrence and support of key leaders in the adopting organization (Glaser, 1973).

c) Work conferences. An institutional mechanism has been developed for the utilization of innovation in the People's Republic of China. Work conferences are assembled periodically in which ministry officials brief subordinates, local level officials give progress reports, and party officials ensure the ideological correctness of the plans that are formulated. The final product of these conferences is an annual plan of action for a given regional, provincial, or country area (Chen, 1977).

One function of the work conference is to identify exemplary units. Planned birth workers at all levels are encouraged to innovate and explore better ways of promoting birth planning. Once high performance is identified an evaluation team is dispatched to investigate the relevance of the

innovation for other teams. If the innovation shows promise, "on the spot conferences" are convened in which the innovators train their peers, relate their experiences, and promote the new procedure. This approach demostrates not only the innovation, but also the notion that another unit facing similar constraints has surmounted the problems encountered. Thus, the Chinese have inculcated in their planned Birth Teams an ideology of innovation diffusion which most observers agree has been highly successful (Chen, 1977, Appendix II; Quinn, 1974; Horn, 1969).

d) Collaboration. Perhaps the most ubiquitous findings of research on the utilization of research is the salience of collaboration between researchers and practitioners in all phases of research. Joint work fosters identification of research questions that reflect the needs of potential users of results (Fairweather, 1967; Mackie, 1974). Once a problem is identified joint work should proceed through study design, data collection, and interpretation of results.[1] Collaboration improves the flow of information and fosters a sense of ownership of results that enhances commitment to its application.[2] This is particularly evident among key decision makers: senior officials should have a sense of participation and ownership of results (Fairweather, 1967).[3]

e) Clarity of reciprocal responsibilities. Although the change agent approach has been shown to hold considerable promise for developing service systems, a critical problems is that the role of change agents is often ill defined, powerless, and threatening -- conditions conducive to conflict. Minimizing the risk of conflict through careful identification of reciprocal responsibilities greatly enhances the prospect that a replication study or research utilization effort will achieve results (see Poser, et al. 1964 and Mackie, 1974).

f) Demonstration projects. When special projects are fielded site visits are often conducted to disseminate results and foster utilization of findings. Visitors are invariably impressed, but such visits have regretably little impact on actions, presumeably because observers are impressed as much by the contrasts of the special project with their own system as they are with their success (see Watson, 1964). Thus a successful special project can have the ironical outcome of generating of rationale for inaction. Larsen et al.

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[1] See, for example, Croker, 1961; Rodman and Kobodney, 1965; Glaser, 1967; Glaser and Taylor, 1969.

[2] This has been observed in numerous studies (cf. Spicer, 1952; Watson and Glaser, 1965; Wiles, 1965; Glaser et al. 1967; Greiner, 1967).

[3] One should note, parenthetically, that a balance must be achieved between research independence and collaboration. Too close a link between researchers and programme personnel can mire the implementation of research in the very problems that it is intended to solve.

(1974) have found, however, that visitation to a special project coupled with sustained change agent consultation greatly enhances prospects for utilization, presumeably because consultation can be addressed to specific problems and developing the potential for change.

2.2.3 A Change Paradigm that Emerges from the International Literature

No observer of the Bangladesh situation, in even the most casual analysis of the institutional climate of the MOHPC, would propose an intervention strategy for improving health services that is based solely upon international literature. We nevertheless propose a tentative strategy to motivate our discussion of specific service problems of government organization and special project achievements in section 2.2 below.

2.2.3.1 Implications of Barriers to Change

Our review of the literature has thus far been more general than the specific focus of this protocol -- researching the utilization of special projects by the MOHPC. We have noted four barriers to the utilization of research and service innovations: economic, structural, historical and operational. In Table 1, we summarize the implications of this literature for this protocol.

a) Economic. The special resources of special projects are likely to explain, to some degree, their relative success. For our extension project to result in changed GOB operations, our inputs must be realistic. While every effort should be made to attract resources to the study thanas of the project, those resources should be consistent with existing national plans and capabilities. Thus services are to be offered by existing GOB workers who are compensated by regular pay scales. We should press for a full complement of MOHPC staff in project areas, improve logistics and supplies up to GOB specified plans and standards, and maintain a continuing record of the operational constraints that current fiscal policy generate. What we must not do, however, is solicit donor support for service activities that we know, a priori, cannot be replicated by the GOB in our absence.

b) Structural. Organizational structures of special projects typically differ in important ways from the GOB system--a feature of projects that represents an obstacle to their utilization. While it is thereofre reasonable to structure service elements of a replication within the GOB system this has the obvious disadvantage of subjecting our intervention to the very problems that it is intended to solve. We must therefore achieve a balance between working in collaboration with GOB workers as counterparts, but preserving our separate identity and flexibility as external change agents. Our project should be neither totally absorbed by the GOB system nor completely separate from it.

c) Historical. In our review we noted that the history of bureaucratic systems in South Asia has origins which predispose organizations to resist planned change. Since the formal hierarchy and rules are well developed, the success of any change effort is contingent upon strong hierarchical support. It seems reasonable to posit that utilization in the South Asian setting will be promoted by developing strong links between senior officials and change agents, and by developing a change team that reflects, to some degree, the hierarchical orientation of administrative systems. Thus a transfer experiment will be more likely to succeed if there are technical counterparts to key administrators both in Dacca and in the field, than if change agents attend to field staff only. Organization of the change agent team should reflect, to some degree, the hierarchy of the programme so that counterparts exist at the top to collaborate on decision making and junior counterparts also exist to undertake training and peer leadership.

d) Operational relevance. Administrators and researchers often address their work to different goals. In this project, however there must be a close correspondence between research goals and operational needs. Large-scale data collection and sophisticated analyses must be consigned a minor role in this project with emphasis instead on short term operational studies with immediate implications for decision making. Demographic monitoring must be on as small as scale as possible with rapid reporting of results. Every effort must be made to involve GOB officials who must be the consumers of results in the planning and execution of research. Again, however, a degree of autonomy for our staff is essential, and achieving the appropriate balance between full collaboration and complete independence will have to be carefully developed over time.

2.2.3.2 Implications of Strategies for Planned Change

Table 2 lists five elements of planned change efforts which have achieved results elsewhere: the use of change agents, emphasis on interpersonal communication, work conferences, collaborative research, and formalization of reciprocal responsibilities.

a) Change agents. In our literature review we noted that training and provision information is useful to introducing organizational change but the prospects for achieving change are greatly improved if a team of transfer personnel are assigned the task of introducing change and supporting the process of change on a sustained basis. Given the formal hierarchy of the civil service it is reasonable to assign counterparts to several levels, reflecting the distribution of authority. At an early stage, a GOB counterpart to the ICDDR,B principal investigator should be designated.

Table 1. Possible Implications of Findings from the International Literature for Research Utilization in Bangladesh Regarding Barriers to Implementation of Research Outcomes

Barrier to Utilization	Implication
a. Economic disparity between project and consumer agency resources.	a. Use existing manpower of the GOB service system. Document resource constraints and research operational resource deficiencies.
b. Structural differences between the special project and the consumer agency.	b. Minimize the extent of structural change required in the project design. Operate within existing structures.
c. Historical primacy of rigidity and hierarchy.	c. Involve senior officials and stress the importance of hierarchical support.
d. Operational relevance of research to policy.	d. Avoid prolonged field experiments and rigorous statistical surveillance. Opt instead for short term operational studies addressed to decision-making. invite consumers to participate in planning and implementation.

Table 2. Strategies for Fostering Change and Innovation and Corresponding Project Implications

Strategy for Inducing Change	Implication
a. Change agents	a. Post a semi permanent change term to focal thana to provide information, diagnose institutional problems, assist in change, and train staff.
b. Interpersonal communication	b. Place small field teams of change agents as field counterparts. Use continuous orientation and on the job training.
c. Work conferences	c. Organize teams of workers at several levels for the purpose of discussing progress and formulation plans.
d. Collaboration	d. Involve, as much as possible, senior officials in projects.
e. Formalization of reciprocal responsibilities	e. To minimize the prospect of conflict, devote considerable attention to arriving at an early understanding of change agent roles.

b) Interpersonal communication. Scientific report writing will be a central activity of the project, but it should not be viewed as the means by which we will achieve transfer of innovation to the MOHPC system. Continuous direct contact and rapport between change agents and GOB staff is important, particularly at the early stage of the project.

c) Work conferences. Meetings among project and GOB staff to focus on specific goals and activities is a critical need of the project. The purpose of such activity will be to demonstrate and discuss initiatives, resolve problems, and foster communication across administrative levels.

d) Collaboration. We have mentioned the importance of collaboration. General continuous data collection activities need to be discussed and understood by all parties. An agenda of joint activities must be devised. In particular, the research that is done must represent a resource to the study thanas, not a source of embarassment.

e) Formalization of reciprocal responsibilities. The problem that all change agents face is this lack of power in the institution to be changed. At an early stage, the consumers of the change process must have a clear sense of responsibility for the project. In our ICDDR,B planning all obligations to perform are assumed by us and we in turn account to our donors. This must be changed so that GOB personnel must also account to their superiors for their progress in achieving project goals. Superiors, in turn, must respond in a way that inculcates a sense of achievement among thana workers who perform well in this collaborative effort. That is, goals should be operationalized and set jointly, with immediate and obvious benefits to accrue to staff who achieve them.

2.2.3.3 Stages in the Transfer of Innovation

We have said that the ICDDR,B will assemble a team of change agents charged with the task of transferring the approaches of special projects to the MOHPC system. Our team will reflect the hierarchy of the MOHPC system in that designated ICDDR,B staff and MOHPC will be jointly responsible for the success of the project and will share a degree of partnership in its execution. In this protocol, we have yet to discuss how we intend to achieve this, and the specific steps of project implementation. First, we shall turn to the international literature on research utilization with the aim of clarifying the elements of our organizational change paradigm.

a) Arousing concern and awareness of a need for organizational change. The sequence of events leading to the creation of the MCH-FP Extension project have been entirely external to the thanas where we must work: The ICDDR,B attempted to fund its project in Matlab and at the advice of donors and planning Commission staff, agreed to undertake a project elsewhere in Bangladesh. While senior MOHPC personnel have been helpful in formulating plans, thana officials must be oriented and encouraged to support this effort. The literature on research utilization suggests that this sequence of events is not conducive to success. The literature suggests that prospects for success are enhanced if there is a strong prior perceived need at the operational level (in this case, the thana) and that senior administrators recruit change agents to assist in solving a set of problems that are widely perceived by the members of the consumer organization (in this case the MOHPC) to be somehow threatening.[1]

In this project the participation of ICDDR,B in an MCH-FP Extension project was originated by the GOB but opinion varies regarding the nature of the project. Few, if any, GOB personnel at the district level or below perceive this as a project that is needed to help them do their job better. Rather, informal encounters in the field suggest that the ICDDR,B is perceived as a service organization posted to the area to assume a share of the health services. Clearly, a vital element of success is therefore to clarify our role and to develop a joint perception with the GOB staff that this project is in response to MOHPC needs in the localities served and its success will ultimately benefit individual numbers of the MOHPC staff. We should not expect cooperation and support to be automatic, but the value of cooperation and support must be cultivated from the beginning and must eventually become manifest to all concerned. Some themes from the Chinese experience may be relevant to this end:[2]

i. Senior officials should introduce the project to thana staff.

ii. Workers should know that cooperation is noticed, formally sanctioned, recognized, and praised by senior officials.

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[1] The literature on this theme is voluminous. See, for example, Spicer, 1952; Zander, 1962; Coe and Berhill, 1967; Glaser and Taylor, 1969; HIRI, 1976, p.33.

[2] A useful review is in Chen and Miller (1975).

iii. To achieve this we could explore the possibility of awards, letters, certificates, etc. signed at the district level for extending recognition for completion of each stage in in-service training.

Whatever strategy is used, there must ultimately be a joint perception that the project is needed and worthwhile among staff at all levels. Given the sequence of events leading to fielding of the project, achieving this must be an early objective of field activities. A key element is determining early in course of work the goals of the MOHPC and whether or not goals are being met. Thus early in the project there should be a simple and short turn around assessment of MOHPC programme impact and communication to all concerned that ICDDR,B involvement is intended to address the problems noted.

b) Diagnosis. Even if there is agreement that something must be done it must also be clear as to which specific operational changes are needed. In Section 2.3 below we address the question of which special project innovations are consistent with national health and population control plans and objectives. This inventory will provide a preliminary list of objectives for the project. Given the agenda for planned changes that emerges from this review, there must be an assessment of institutional capacities to absorb the needed operational changes and barriers to introducing the specific changes proposed. This assessment is a stage in change agentry that is termed "organizational diagnosis" (see, for example, Chin and Benne, 1969; Bowers and Franklin, 1976 and Neff, 1965).

Organizational diagnosis is a type of research which typically combines the techniques of survey research with participatory observation.[1] In the case of human service organizations, surveys of clientele are incorporated with studies of personnel of the service programme.[2] This permits assessment of the extent and quality of interchange between outreach staff and clientele which, in turn, provides direct guidance to change agents and trainers. The experience of numerous exercises in planned change has shown that diagnostic research, in the setting where change is introduced, is a vital component of the transfer of innovation.

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[1] See, for example, Bowers and Franklin (1976) and Bennis (1969).

[2] Two useful examples of organizational diagnostic studies in Bangladesh are 1) the research of Quddus (1979) on the performance of Family Welfare Assistants and 2) S. Rahman (1981) study of the determinants of health service utilization.

Diagnostic research typically undertakes the following:[1]

i. It assesses the extent to which services are implemented.

ii. It assess the degree of congruence between official proposed changes such as ...

- inappropriate distribution of power
- conflict
- blockages
- communication gaps (lateral and vertical)
- lack of clarity about goals
- lack of technical capabilities
- resource constraints
- leadership strengths and deficiencies

as well as other issues.

A difficult issue in diagnostic research is that the study of such issues can be misperceived as a prelude to disciplinary action. Many pitfalls in the diagnostic phase have been documented in the literature: spending too much time on diagnosis, destructive confrontation and conflict between change agents and the personnel studied, bias in the identification of problems, premature and inappropriate use of diagnostic insights, and many other issues (see, HIRI, 1976, pp.34-35).

c) Review of alternatives. Once the ICDDR,B has developed a sense of the specific problems which block introduction of change on the other hand, a detailed action plan can be formulated in work sessions with key MOHPC officials. Armed with an high level agreement on the specific elements of the change process field work can begin. Rogers and Svenning (1969) suggests two steps in this phase:

i. For each diagnosed problem identify the target individual to be affected by the proposed change. Consider specific alternatives and agree upon desired outcomes.

ii. Define the steps that must be taken to introduce the desired change.

This process must be a collaborative effort of senior investigators and key administrators of the target organization.

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[1] See HIRI, 1976; and a useful manual by Katz and Snow, 1980.

d) Implementation. Once the steps are agreed upon, specific changes need to be introduced. In the case of this project, implementation of change may consist of 1) a series of technical training exercises on health and family planning issues or 2) executive orders for specific operational changes, or 3) some combination of 1) and 2).

e) Evaluation. A key element in successful efforts to introduce innovations into large scale organization is the evaluation of outcomes——a repeat of the diagnostic process. The literature on this area is vast,[1] but it is appropriate to note at the outset that success of the MCH-FP Extension Projects is likely to be contingent upon the fielding of several small evaluative studies, each addressed to assessing the efficacy of elements of the project interventions.[2]

2.2.4 Summary of Implications

The ICDDR,B has been engaged in MCH-FP work in Matlab with significant success. It must now transfer the lessons learned to the Government of Bangladesh and research the operational problems in doing so. The literature on research utilization is instructive because we gain insights into the strategies for planned change that are appropriate for this effort. Our review suggests that training alone will not suffice. We will have to embark upon a carefully planned dialogue with senior officials to insure commonality of goals and to establish that the obligations to succeed are reciprocal obligations with potential benefits to all concerned. We will undertake a series of assessments, using a variety of instruments, to clarify the operational problems in the areas served. These assessments will be shared with key officials for joint development of a change strategy. Next, we will embark upon a programme of training, guidance, counterpart support, work conferences, demonstration visits, collaborative research and the like with the aim of introducing specific changes. Finally we will evaluate our success both in terms of outputs (morbidity, mortality and fertility trends) and in terms of process changes (operational research) to guide our efforts in improving performance and understanding the pitfalls of translating research findings into Government operations in rural Bangladesh.

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[1] See the useful review of Suchman, 1967.

[2] In much of the literature a key theme is the importance of continuous evaluation and modification of approaches. See, for example, Likert and Lippitt, 1963; Wilson, 1961; Lippitt and Havelock, 1968, among others.

2.3 The MOHPC System: Prospects and Options for Change and Development

In the previous section we outlined the background literature on research utilization and concluded that a multifaceted research and training programme was needed if we are to research the transferability of special projects to the MOHPC system. In this section, we attempt to clarify what needs to be done. Our review undertakes three tasks: 1) a review of the principal deficiencies of the existing health and family planning service system; 2) an inventory of the elements of special projects and which merit transfer to the MOHPC; and 3) a preliminary identification of which of these elements will actually be feasible to test and which can be assumed, a priori, to be not feasible in the MOHPC system.

2.3.1 The Health and Family Planning Service System

Reviews of the effectiveness of the Health and Family Planning Service System in addressing the needs of rural Bangladeshis have undertaken the consecutive steps: They

a) ... seek to determine the health needs, perceived or real and rank priorities.

b) ... achieve on understanding of the functioning of the Government health care system. This phase includes, the study of the allocation and use of budgetary resources, the availability and disposition of material and human resources, and the organization of the primary health care services.

c) ... determine how the health needs are met by the health services and possibily the reasons of failure of the government health services to meet the community needs as well as its mechanisms in order to identify possible solutions.

We shall review the research record with respect to each step.

a) The first step was undertaken by the GOB and WHO during the 1977 Country Health Programming exercise. In the first of the two Country Health Programming documents, the Information Document (Ministry of Health and Population Control, 1977a), data from all available sources on demographic patterns, community structure and organization and disease patterns were described and summarized. This document merits review.[1]

Not surprisingly, the report shows that the pattern of morbidity and mortality in Bangladesh reflects the poverty and illiteracy of its masses. Very little, if any, sustained health improvement has occured over the last 10 years, particularly in remote rural areas.

[1] An abridged version is also available (Bangladesh Health Information Unit, 1977).

In the Second Country Health Programming document, priorities are identified and strategies defined (Ministry of Health and Population Control, 1977b). Its recommendations helped to shape strategies described in the 2nd Five Year Plan (Planning Commission, 1980).

b) Structural features of the service system. The most important single observation to emerge from macro-analysis of the GOB MOHPC service system is the absence of clear delineation of responsibility for population activities: as a matter of policy, the programme is integrated, but in practice separate administrative structures exist.[1] The incongruence between policy and operational structure generate conflict, redundant services, and other dysfunctions (see, Planning Commission of the People's Republic of Bangladesh, 1980).

c) The deficiences of the Government health services. Analysts of the situation in Bangladesh consistantly agree that Government Health Services are far from adequate for meeting the needs of the rural people. The Second Five Year Plan stated, in this regard that ...

"Although the health infrastructure and manpower have expanded during the (previous) plans, minimum health care has yet to reach the vast majority of the people particularly in the rural areas. Of 8,500 doctors now available in the country, less than 10 percent are in the rural areas. Our of 15,485 hospital beds, only 3,800 beds (24·54 percent) are in the rural areas. Severe shortages of medical assistants, nurses, paramedics, particularly in the rural areas, makes the situation still worse. Thus the accessibility of the rural masses to modern health care is very limited. The utilization of even the existing health facilities in rural areas is very poor. The bed utilization rate in thana health complexes is only 30 percent as against more than 100 percent in the urban areas. This is not due to less morbidity in the rural areas rather it reflects generally the poor quality of services arising out of poor management and technical inefficiency coupled with gross inadequacy of supply of drugs, medical and surgical requisites. Consequently, the rural health institutions do not enjoy complete confidence of the local people leading to the phenomenon of by-passing such institutions and over-crowding in the urban hospitals (Planning Commission of the People's Republic of Bangladesh, 1980)."

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[1] The Country Health Programming Information Document (Ministry of Health and Population Control, 1977a) describes the organization of the Government Health, Population Control and Family Planning as well as its functioning. Achievements for the First Five Year Plan (1973-78) and the Two Year Plan (1978-80) can be found in (Ministry of Health and Population Control, 1977b). Major targets and indicators to achieve "Health for All" by the year 2000 can be found in (Planning Commission, 1980). An 1982 updated organogram of the present organization is included in Appendix A (Huq, Mustaqul; 1982).

According to this document "The present infant mortality rate is 150 per thousand live birth while child mortality (1-4 years) rate is 229 per thousand children. Thirty-nine percent of all deaths are due to infant mortality." Such figures are surprising when one realizes that the major causes of death are either immunizable (tetanus, measles, respiratory disease) or manageable by paramedics (diarrhoeal diseases). Estimates for maternal mortality range between 5 and 25 per thousand live births (See, for example, Chen et al. 1974). According to the 1975-76 National Nutrition Survey, protein energy malnutrition (PEM) is widely spread among children; expectant and lactating mothers were found to be suffering as well: 85 percent of them from low hemoglobin, 45 percent from protein deficiency, 42 percent from vitamin A deficiency and 40 percent from clinical goitre.

The Second Five Year Plan identified the following major constraints to government health services activities:

i) An inability to produce adequate mid-level health manpower and a failure to post health manpower, even in categories where production was near about the target, (e.g. doctors) to the rural areas.

ii) A shortage of essential drugs and medicines particularly in the rural health institutions.

iii) Ineffective delivery of health and family planning services to the masses of the people owing to the bifurcation of health and family planning and a lack of cooperation between the two.

iv) Inefficiency of the operational system and administrative structure.

v) A lack of manpower with requisite skills, experience and training in planning, project formulation, implementation, monitoring, evaluation and management of services.

vi) Inclusion of many projects outside the plan, in most cases not consistent with plan priorities without a corresponding increase in allocation and implementation capabilities.

With so many fundamental structural and operational problems, it would be presumptuous to claim that special project innovations will address all the problems noted. Table 3 lists each deficiency and some possible implications for the MCH-FP Extension project. Clearly, such fundamental problems

Table 3. Five Year Plan Constraints and Diagnostic Research Implications for the MCH-FP Extension Project

Deficiency	Diagnostic Research Implications
1. Inability to produce manpower and post them	- Assess manpower needs and budgetary implications in study thana - Assess alternative manpower strategies - Assess training quality and needs vis-a-vis current plans and operations
2. Shortage of drugs and medicine	- Research the logistics and distribution system - Assess needs.
3. Ineffective service delivery	- The implications of structural problems should be researched and recommendations drafted. Draft a research based operational plan for achieving integration.
4. Inefficiency of personnel	- Identify specific operational deficiencies and policy implications.
5. Lack of skilled manpower	- Undertake a systematic training needs assessment
6. Inclusion of redundant projects	- Undertake an inventory of plans in the study thanas and assess overlap and its implications

indicate a need for careful diagnostic research aimed at assessing specific dysfunctions and potential areas of project intervention. Some general research areas appear in Table 3, although, as we shall see in the section that follows, there are some particularly promising leads to pursue in the course of refining our strategies for the MCH-FP Extension project.

2.4 A Review of the Findings of Some of the Special Pilot Projects in Bangladesh

In the introduction, above, several successful health and family planning projects in rural Bangladesh were cited. The best known of these projects are the Matlab Community Health Services Project (CHSP), the Companigonj Health Project in Noakhali, the Gonoshasthya Kendro (GK) project in Savar, the BRAC project, the main features of which are described in Appendix B.

We are summarizing here the operational lessons learned from these special projects:

2.4.1 Theoretical Credibility of Interventions

By achieving significant reduction of mortality and fertility the projects reviewed have demonstrated that it is possible to achieve results with the approaches used. If these projects had failed, then the potential for successful implementation of integrated MCH-FP projects would be in question. Because the projects have been successful, however, the question of transfer of approaches or paradigms to larger scale now arises.

2.4.2 The Efficacy of Health and Family Planning are Appropriately Delivered a Package of Services

One is tempted to generalize from the various reviews of the MOHPC programme and the special projects that vertical GOB programmes are more successful than integrated ones while the reverse is true of special projects. On closer examination, however, one must conclude that there is no definitive scientific evidence that integration is necessarily a more effective strategy than several vertical programmes.[1] It seems a reasonable to conclude that multipurpose workers can deliver care more efficiently than several cadre of single purpose workers. For this reason, special projects integrate services: they have the

[1] An often cited comparison of vertical versus integrated family planning strategies is the vertical failure of the contraceptive distribution project in Matlab and pronounced subsequent success of an integrated project in the same area (see Stinson et al., 1982 and Phillips et al., 1982). It should be noted however, that comparison is flawed by the fact that workers and contraceptive methods were different for the second project and supervision and training were improved. Moreover, the "integrated" project succeeded as a family planning project before the introduction of MCH.

institutional capacity to undertake the complex task of multipurpose worker supervision and the flexibility to recruit workers who can be trained to perform a variety of tasks. Whether this works better than the GOB system because it is "integrated" or because it is better supervised is an open question. While it is not in our mandate to do so at present, the MCH-FP Extension project might best be structured into an experiment in MOHPC integration: Two thanas receive comprehensive training of supervisory and technical staff. In one the administrative structure is redesigned to a unified scheme in keeping with the models of Matlab, GSK, and elsewhere, while the other is explicitly bifurcated into separate family planning and health structures. Whatever is the outcome of our diagnostic research and the ultimate project design, it is clear from the outset that special projects that succeed have had multiple components with a unified administrative structure--in short, integrated designs.

Aside from the efficiency of integrating services, there appears to be direct operational benefits in doing so. In Matlab, for example, trained MCH-FP workers could deliver family planning more effectively than family planning workers, in part because they could treat side effects and refer women with persistent problems. While MCH was developed relatively late in the project, the paramedical skills of workers had direct benefits to family planning service delivery even before MCH was implemented. For example, more methods could be offered--some requiring medical and paramedical support, because of the integrated MCH-FP system.

Most projects, except Matlab, addressed the issue of an integrated approach with elements outside of the health field: agriculture, employment opportunities, adult education etc. with the aim of integrating development activities with family planning.

2.4.3 The Importance of Comprehensive Family Planning Care: The User's Perspective

All projects in Bangladesh which have achieved success in the family planning field have incorporated the following elements:

a) Multiple methods freely available to all couples in their homes;

b) Rigorous follow-up services;

c) Village-based delivery of information and careful attention to community organization and achieving rapport with leaders;

d) Referral services with surveillance for side effects, ancilliary health services, and counselling, and

e) Village workers who were selected with community participation and assigned to their home village.

These findings are consistent with observations, reported from numerous settings, which show that programmes which are oriented to the needs of the individuals served work better than programmes which are oriented to the technical problems in the provision of specific methods. By maximizing the range of choice of method, overall use is enhanced. By emphasizing follow-up and alternative methods, continuity of use is fostered. Thus special projects have been "user oriented" rather than "method oriented". The problem is not one of providing contraceptive technology, but one of delivering a package of high quality services that can be readily adapted to specific individual needs (See, Zeidenstein, 1979).

2.4.4 The Importance of Collaboration

All projects were concerned about the limits of their own activities and of the status of their projects as "special projects". This can be found in documents (McCord 1976, CCDB 1980) in the Savar intention to undertake a joint venture with the GOB (as quoted in Coombs, 1980) and in the present ICDDR,B protocol. All projects identified the next step in work to be a collaborative venture with the GOB health service system in several places; and various guidelines for such a venture can be found in Appendix B. In no case, however, was this collaboration achieved. One project, in Tangail, was explicitly a collaborative efforts (See UNFPA, 1979), although work was never implemented. A second, fully collaborative project in Noakhali involving DANIDA was never begun despite two years of field work. Collaboration should clearly be a goal, but the prospects for success do not appear to be altogether promising. Collaboration must be a carefully developed strategy with an eye to achieving an understanding of specific barriers to collaboration.

2.4.5 Targeting: Achieving a Balance Between Community Services and the Needs of Vulnerable Groups

All projects had to face the following paradoxical situation: Overall strategies of health and family planning delivery focus on social groups while specific components have specific target groups. Family planning motivation, for example, requires the involvement of the husband, mother-in-laws and sometimes neighbors rather than a simple dialouge with an individual woman. Nevertheless, some women--especially, high

parity women, require special individual attention. All projects have found that it is vital to approach the community as a whole. Needless to say, this presupposes knowing the community, its culture, traditions, leadership and power structure, its economic potential, how its resources are distributed and the nature of its local institutions and decision-making processes. In addition to the administrative challenges of achieving a balanced set of operational objectives for community participation, all projects have found it necessary to address the specific needs of particularly vulnerable groups and therefore set priorities in identifying as expected high risk or target group such as under-five children, for MCH, or high parity women for family planning.

Target setting, in summary, is complex and focuses on the specific plans for types of services to be provided rather than outcomes to be achieved.

2.4.6 Decentralization and Service Delivery Administration

In all projects administrative structures and procedures deviate considerably from the GOB system. In order to make health care and family planning accessible to people, services had to be decentralized and close to their homes. This meant relying heavily on village based line workers (Community Health Workers, Village Health Workers etc...), on community participation and on strong supervision to achieve implementation. These workers are multipurpose workers who have been assigned tasks essential to the needs of the community in which they live and work. These tasks cut across the spectrum of health activities which are often thought to be the prerogatives of medical doctors only. The responsibilities of the front line worker as well as the possibility of a category of assistant vary according to the projects.

Instead of the traditional emphasis on static facilities at headquarter levels, all projects have emphasized the absolute necessity of small care units (union levels) and of a network of mobile multipurpose workers. All projects have emphasized the role of literate female workers with some paramedical training and a system of referral and back-up.

As an adjunct to this village orientation, projects have decentralized decision-making. In Matlab, for example, record keeping and supervision are decentralized to the Union level with fortnightly compilation and analysis of data by groups of village workers. Thus the purpose of data collection is immediately apparent to workers: It is used for administrative decision-making on the day that it is reported to supervisors.

There is immediate discussion of problems with goals addressed to resolving them before the next fortnightly meeting (see, Bhatia, et al. 1980)

2.4.7 Continuous Staff Supervision and Training

All projects emphasize the training of workers and have developed a continuous methodology for it, including detailed task lists, training materials, and in-house experts. Training is typically not limited to technical matters only. Themes of training include developing a commitment to the rural poor and achieving empathy and respect for villagers.

The tasks of supervision have been well defined and supervising to workers in the field is a critical role for the supervisors. The quality supervision is monitored to guarantee worker performance and goal achievement. Thus special projects have well developed management control systems.

2.4.8 Community Participation

While community participation is a term that conveys a variety of meanings (see, for example: Coombs, 1980; Newell, 1975; Djukanovic and Mach, 1975); the projects have all successfully implemented delivery system with some form of community participation in their service.

a) Local "specialists" in a community based programme who render specific services to their neighbors: The local health and family planning workers and indigenous midwives in Savar and BRAC; the bari mothers in Matlab and the dais in Companigonj are but a few of the examples of this.

b) Local contribution of money or labour and material to help defray the costs of a service or project: examples include the Savar and BRAC health insurance scheme and the organization of decentralized community maintained treatment centres, such as Sotaki and Matlab.

c) Creation or strengthening of self run local institutions and mechanisms such as the cooperatives created under BRAC for fishermen and handicrafts for women workers.

d) All projects emphasize the importance of educating the users in order to ultimately have them assume their role of change agents. More than technical information, the users must get new insights on the causes of the present situation and how it can be changed.

2.5 Summary: Objectives Congruent with Needs and Constraints

The overall objective of the project, we have said, is to test the capacity of the MOHPC service system to successfully utilize MCH-FP service innovations from special projects without incremental resources or major institutional change. Having reviewed the literature it is appropriate to return to the matter of identifying specific project objectives that are consistent with the constraints and realities that we face.

First, it is important to reiterate what this project will not be doing: 1) it is not an objective of this research project to have the ICDDR,B deliver health or family planning services, 2) it is not an objective of this project to test the restructuring of health services. Testing the introduction of integration may ultimately become an objective, but this objective would only arise if presentation of organizational diagnostic research to the GOB (to be described below) were to result in a formal request from the GOB for such a study. Our current options are therefore somewhat limited in the face of the problems at hand.

2.5.1 Some appropriate Operational Goals

The operational problems noted in analysis of Bangladesh rural health services are so general, so ingrained in the institutional fabric of the MOHPC that the early stages of work must be addressed to clarifying and focusing our goals. We aim to improve the quality and quantity of the delivery of health and family planning, but the specific candidate interventions must be evaluated and prioritized. Table 4 lists candidate interventions from special projects that we have highlighted in Section 2.4 above. Fulfilling the aims that follow from this list would be a formidable undertaking. Therefore, an assessment must be made of what is feasible. We shall attempt to specify the specific aims according to Table 4 but detailed tasks and operational goals will have to be worked out once we have a better diagnosis of the local needs of the project areas.

2.5.2 Some Probable Operational Constraints

The establishment of a field project with the six aims in Table 4 will be constrained by the central problem of service implementation in Bangladesh: Intergration is a stated policy, but disintegration prevails in the field. Developing multipurpose skills may be possible in the course of training, but implementing the work of a cadre of multipurpose workers may not be possible. Research must therefore be addressed to achieving a full understanding of the integration issue with the aim of drafting recommendations on how dysfunctional practices should be changed.

Table 4. Findings from Special Projects and Implications for MCH-FP Extension Project Objectives

Findings from Special Projects	Implications for the MCH-FP Extension Project Objectives
1. Credibility of interventions: Primary health care can be delivered at reasonable cost by village workers. Family planning services can reduce fertility.	Aim for GOB implementation of ... - comprehensive MCH - village based FP Monitor: - mortality - morbidity - fertility
2. A package of services works better than single purpose projects.	Aim to develop a cadre of multipurpose village based workers with requisite skills for both MCH and FP care.
3. Comprehensive family planning care works better than one or two methods. Follow-up and referal is essential.	Aim to implement a multiple method approach with services in the village and union subcentre services for back-up.
4. Collaboration is an objective of special projects, although none has formalized joint work.	Aim to clarify the nature of collaboration and ultimately an agenda for joint research. Address joint work to small well defined operational questions.
5. Supervision and training is continuous and strongly emphasized.	Aim to facilitate regular staff meetings, routine field work, and supervisory support. Aim to train supervisors in supervisory methods. Provide technical training to workers.
6. Community participation is a key element in project success	Aim to idenfity local institutions and develop strategies for improving linkages between MOHPC staff and the communities served.

3. Rationale

While it is realized that the health problems of developing countries are a consequence of poverty and income inequality, we have nevertheless posited that it is feasible to implement strategies that will reduce fertility and mortality despite the constraints of the present system, that implementation failure and not model failure accounts for the problems of the program. Low cost and effective technologies are known but not utilized. Resources are allocated,but implementation lags. Special projects have developed service delivery systems which achieve results, but their unique achievements are not replicated. Thus the principal rationale for this project is the need to establish sites where specific operational questions regarding the implementation of rural health and family planning services can be addressed and problems can be resolved under realistic conditions. In particular, it is important to examine the overall rationale of special projects by testing whether lessons learned are replicable in the GOB context. If not, one could argue that "lessons" are not operational lessons at all, but findings which attest to the inadequacy of the institutional model that govern the provision of health and family planning care.

B. SPECIFIC AIMS

In this project, we aim to test the capacity of the CCB health services systems to absorb innovations of special projects and replicate their impact on fertility, mortality, and morbidity.

1. Specific Research Aims

The specific research aims of this protocol are:

1.1 To identify and define, from the experience of the private/pilot projects which have been successful in rural areas of Bangladesh which strategies are likely to be successful in reducing maternal and under-five mortality, reducing fertility and improving the health in these groups. Such strategies should be

a) addressed to the health needs of the rural people as defined by themeselves and by health professionals,

b) compatible with the strategies already identified by the government,

c) cost/effective in the specific frame of the Bangladesh Government services and culturally compatible in the context of rural Bangladesh.

1.2 To test the hypothesis that transfer of successful service strategies from small scale private/pilot projects to larger scale government health services is possible.

1.3 To document the modalities of barriers to this transfer during the duration of the project.

1.4 To document the results of the transfer and analyze its impact on the health and fertility of population.

1.5 To identify the causes of success and failures, and in the event of failure, to address the question of whether implementation has failed or whether the basic structural model has failed.

1.6 To make recommendations for national health and population programme development.

2. Subsidiary Aims

Next, we shall utilize our review of the literature to decompose these specific aims into more specific operational aims of the project.

In Tables 1-4, various implications for our extension projects were extracted from the literature. In this section, we return to those implications, listing each together with the hypotheses to be tested in the course of our work.

2.1 Barriers to the Implementation of Research Findings (Table 1)

a) Economic disparity between special projects and the MOHPC system. A specific aim of this project will be to improve operations within the fiscal constraints of the GOB. We undertake this objective under the hypothesis that inadequate resources--while representing a critical problems to the MOHPC--are not the principal constraint to implementation. Addressing this issue will require research examining the extent of implementation of services before, during, and at the end of our intervention, and monitoring inputs to insure that only MOHPC resources are used, and that resource levels are not exceptional. Most importantly, operational constraints that arise from resource constraints must be detected and documented in the course of the project.

b) Structural and procedural discrepancies. A specific aim of this project is to assist the MOHPC in identifying critical barriers to implementation and jointly collaborating on their removal through training, counterpart support, and technical assistance without reorganizing services on some special project model. The hypothesis underlying this aim is that implementation problems relate to readily manipulatable administrative issues rather than to institutional structure. Thus we posit, for example, that the effects of Matlab are to some degree independent of the organizational structure that operates the project.

c) Historical primacy of rigidity and hierarchy. A specific aim of this project is to establish a close dialogue between scientists, change agents, and administrators at all levels to foster implementation of our project and utilization of results. We undertake this dialogue under the hypothesis that planned research based change is possible in the Bangladesh bureaucratic setting.

d) Operational relevance of research to policy. We aim to implement a series of short term highly focused operational studies in collaboration with MOHPC decision makers to establish a sense of GOB ownership of the project and collaboration in its execution. The hypothesis underlying this aim is that implementing research for policy decision making can be developed in Bangladesh, and that collaboration will foster utilization of results.

2.2 Strategies for Fostering Change (Table 2)

a) Change agents. We aim to assess the critical health service delivery problems in two thanas, assign a team of trainers and counterparts to the areas, and assist in a systematic way in the resolution of problems noted. We undertake this effort at "change agentry" under the hypothesis that external consultation and support will transfer knowledge and skills and result in operational change.

b) Interpersonal communication. A specific aim of this project is to foster operational change through informal communication between change agents working in the field and MOHPC counterparts. The hypothesis underlying this aim is that job performance is at least in part a function of technological knowledge of the staff involved, and that on the job training and support will therefore contribute to performance. Testing this hypothesis will entail before and after worker KAP surveys (be described below) and functional analysis of operations in the course of the project.

c) Work conferences. A specific aim is to foster the exchange of knowledge among workers within the study thanas by arranging seminars and conferences on specific technical problems and issues. We posit that neither high nor low performance is noticed in the normal work routine of MOHPC staff, and that by according special recognition and attention to successful workers we can contribute to improve job motivation and overall programme performance.

d) Collaboration. Complete collaboration on all aspects of the project between the GOB staff and the ICDDR,B is neither desired nor possible. Nevertheless, achieving a general sense of collaboration with the GOB is a specific aim. Moreover, we intend to identify selected specific researchable questions to address in joint studies to test the hypothesis that action research can contribute to operational change in Bangladesh.

3. Diagnostic Research Implications (Table 3)

We noted in our review that the GOB, by its own reckoning, has cited constraints to implementation in the Second Five Year Plan. Each has implications for specific aims and hypotheses:

3.1 Trained Manpower Shortages

We aim to assess manpower development needs and tailor a training programme to ameliorating any deficiences noted.

3.2 Supply Shortages

We aim to diagnose specific logistics and supply problems and recommend procedural changes whenever it is appropriate to do so. We hypothesize that supply problems are at least partially a consequence of procedural problems and are not wholly due to resource constraints.

3.3 Ineffective Service Delivery

We aim to identify specific barriers to service delivery under the hypothesis that problems can be corrected by procedural change.

3.4 Redundant Services

An aim of the study is to examine service overlap under the hypothesis that redundancy can be reduced thereby improving programme efficiency.

4. Specific Aims Arising Out of the Work of Special Projects (Table 4)

In Table 4 we listed several approaches of special projects that merit transfer to the GOB system. Replicating each of these activities represents specific aims of our collaboration with the GOB. We aim to

- developing a cadre of multipurpose workers with multipurpose skills efficiently meeting the needs of the rural community in which they work
- develop a joint work plan with the MOHPC
- develop supervisory support, staff meetings, and problem-solving, and
- develop links between the programme and local institutions.

Each aim is pursued under the hypothesis that administrative changes will be feasible in the context of the MOHPC structure.

C. METHODS AND PROCEDURES

1. Overview

The proposed project will be a three year intervention conducted in four phases, to be described below. The project is linked to ICDDR,B projects elsewhere in Bangladesh; and it is therefore appropriate, to discuss the general research context in which the MCH-FP Extension Projects will function.

Our methodology in this project will develop a research system which differs from the previous ICDDR,B emphasis on research in field stations. This system is illustrated in Figure 1. Survey research is aimed at developing hypotheses about organizational problems and their effects on health care and demographic rates. The Matlab area will continue to be used to test hypotheses about the potential effects of given health service strategy (item 1, Figure 1). A strategy that fails the test, as the CDP did, will be abandoned and work will be addressed to clarifying the nature of problems and the new approaches to be tested (item 2, Figure 1). Once a family planning or health service strategy is developed and refined in Matlab the replication of it will be tested in the extension areas (item 3, Figure 1). Each ongoing service activity will be monitored over time and the effects of intervention will be assessed with surveys and demographic data collection (item 4, Figure 1). While this proposal concerns only the extension component of this system, it is important to bear in mind this broader context of the MCH-FP research of the ICDDR,B.

In our specification of methodology in the sections that follow we shall first review the experimental design and next the research components of our methodology. Third, we shall review specific phases of the project and the nature of our interventions. Finally, we shall outline a tentative scope of work for change agents and the tentative composition of the teams to be assigned to study areas with work cycle for routine work and a general time table for specific change agent intervention and research.

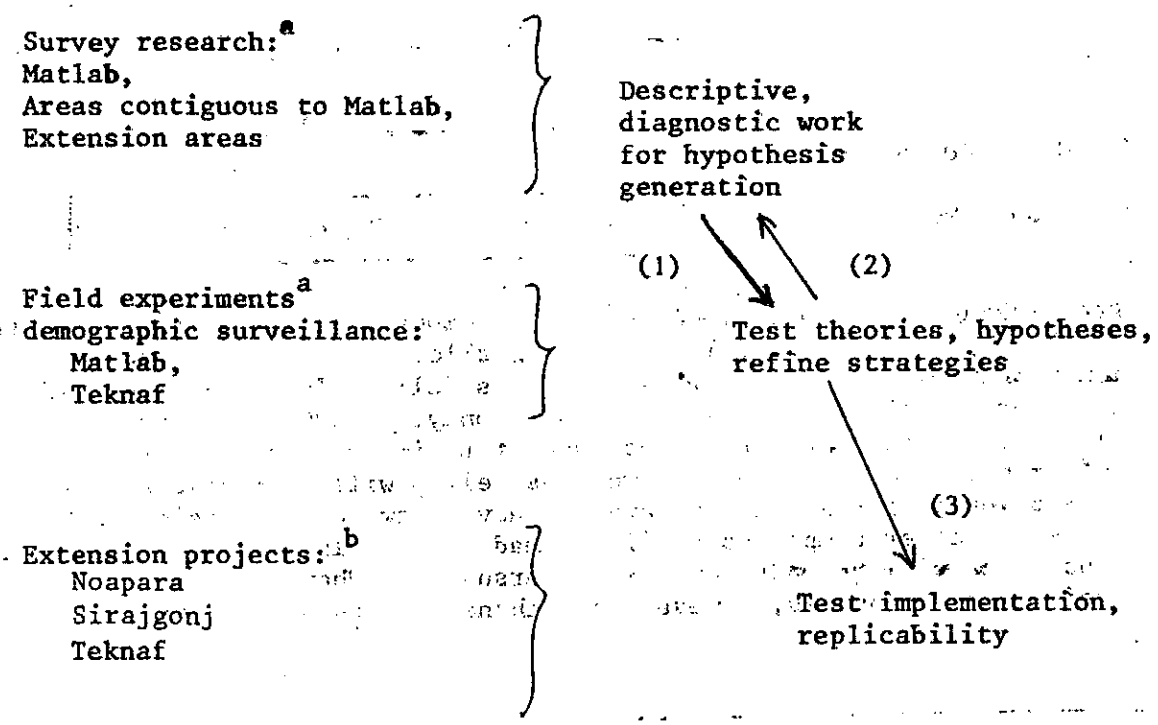
2. Experimental Design

The design of MCH-FP Project is intended to permit two types of inference:
1) whether a package of training and counterpart support has effects,
2) whether counterpart support has effects that are independent of training.

Addressing the first type of inference will be complicated by the fact that we cannot afford to have "comparison thanas". We can utilize our work in Munshigonj for some comparative analysis, but the principal source of inference will be before and after surveys and sample longitudinal data collection.

Figure 1

The ICDDR,B MCH-FP Research System



[a] Ongoing, partially funded

[b] Proposed and funded in Teknaf

Addressing the second type of inference -- whether our field staff have significantly altered operations can be achieved by focusing our work on sample cluster unions. The design is shown in Table 5. Two thana will be used, each with a complete ICDDR,B staff. Our intention is not to compare thana; therefore cells are merged across thana. Thus each thana will have 2 unions with both "monitoring activities" and change agent "counterpart support" (Cell I, Table 5). Two unions in each thana will have monitoring only (Cell II, Table 5). One union in each thana will be a special training site where early ICDDR,B efforts are addressed to

Table 5. Treatments of the Two Thanas of the MCH-FP Extension Project[a]

	ICDDR,B Counterpart Support: Yes	No
MOHPC + ICDDR,B Monitoring	I(4 unions)	II(4 unions)
MOHPC only Monitoring	III(2 unions)[b]	IV(remaining unions)

establishing field operations for field demonstration to trainees (Cell III, Table 5). Unions will be randomly allocated to cells I and II. Among nonsample unions one will be purposefully selected for Cell III. In a fourth cell there will be training only. MOHPC staff in all four cells will receive the entire package of training, including field site visits to the cell III unions; whereas cell I will also have a staff of ICDDR,B counterparts. In summary, we have a two celled design in which before and after comparisons will be made for cells I and II and continuous comparisons will be made for cell I versus II. Whenever formal training sessions are conducted, however, all thana workers will be involved.

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[a] In each thana, all cells are implemented so that in each thana half the specified number of unions will be in a given cell.

[b] Intensive output (training sites).

3. Research Components

3.1 Field Activities. Work will be conducted by four teams. Although "membership" in a team will overlap in practice, goals and work assignments of ICDDR,B will be delineated according to team. We shall review the composition of each team and its tasks in turn.

a) Training Team

In our review of the literature on Bangladesh service organizations we conclude that a critical barrier to the adoption of technical innovation is that workers have not been adequately trained to perform the tasks assigned to them. "Integration", while it is conceptually appealing, can be dysfunctional if it is promulgated without comprehensive training. We posit, in this study, that comprehensive retraining of single purpose workers into multipurpose health and family planning workers will dissipate some of the internecine conflicts in the field and contribute to overall programme performance.

The contents of training will be consistent with national MOHPC training plans, which, in turn, coincides fairly closely to Matlab operations either in place or planned for 1982. Thus the scope and content of existing training schemes will be implemented in the MCH-FP Extension areas. What distinguishes training in this proposed project from training in GOB programmes is its emphasis on field demonstration and counterpart support. The literature on the utilization of innovation shows that practical field demonstration by peers is more effective than didactic presentations. Thus we plan to field a small team of expert trainers to conduct short highly focused courses on MCH-FP topics, but to augment training with field demonstration of each MCH-FP component and joint implementation of operations. The job of counterparts, in short, is to translate lessons learned in formal courses into implemented programs in the field.

Although the training-change agent teams will be comprised of individuals who are ICDDR,B staff, it is this component of the project that we aim to identify as the replicable component. If our approach works it could conceivably be utilized for institution development throughout Bangladesh.

The training team will be led by a Bangladeshi physician with considerable experience in rural health care delivery and the training of health workers. We plan to involve, as much as possible, the senior staff of the Matlab project, its senior field research officer and female physician as consultants and trainers. In addition, two full time trainers will join the project to develop materials and conduct formal sessions. Each training session will be timed to coincide with service implementation. Trainers will have two skilled ICDDR,B paramedical workers attending each session who accompany workers to the field. These "Senior Health Assistants" have qualifications

equivalent to MOHPC counterparts, but extensive field experience in Matlab or other special projects. Finally, the counterpart team includes "Health Assistants" with qualifications roughly equivalent to MOHPC Family Planning Assistants. These workers will assist in the implementation of field activities, most notably the development of a referral system for family planning and by 1983, a cold chain for tetanus. The scope of work for this team is discussed further, below.

b) Functional analysis team

The execution of a change effort of the sort that we envision is likely to be fraught with difficulties. ICDDR,B will have no real authority, and barriers to implementation abound: resources are severely constrained, logistics and supply problems are widespread, and numerous practical problems will constrain operations in ways that are difficult to anticipate. A team of analysts will document these constraints, propose short-term solutions, and develop recommendations for needed institutional change. To achieve this, functional analysts will observe operations before the project to diagnose critical operational problems, analyze the process of change, and thereby systematically document the degree of success or failure of the project to produce change over time. At present our plan is to utilize a senior trainer as head of the functional analysts, although one full time operations research specialist will participate as a coinvestigator and senior health assistants will be utilized as observers and interviewers.

c) Survey research team

The utilization of survey research for fostering change and development in large scale organizations has been a promising innovation in recent years. Regretably little of this work has been conducted in Asia and virtually none in Bangladesh. The central idea is to build questionnaires for worker interviews out of the experience gained in functional analysis. Surveys of villagers are then conducted wherein samples are clustered by workers so that analysis permits assessment of the extent to which characteristics of services affect health behaviour. We aim to develop a small team for this purpose, linking its work closely with our efforts in functional analysis.

3.2 Research Components: The Activities of Teams

The activities of research teams will be as follows:

a) Community and household studies. (Survey research team).[1] Research will be addressed to the study of mortality, fertility, and morbidity levels, assessment of service utilization, health behavior, knowledge, attitudes and practices relating to oral therapy, health problems, and

[1] This team will also work in Matlab to afford comparative analyses.

family planning. Sentinel households will be randomly selected in the selected unions.

b) Organizational studies. (Functional analysis team). Much of the research work to be undertaken will be addressed to the study of rural health care delivery and the identification of strategies for facilitating institution development. At considerable risk of over-simplification, we can say that the organization research involves the study of inputs, "throughput" (operations), and outputs. Work will involve a variety of research approaches and instruments: evaluation of training, assessment of managerial support and measurement of effects, and other issues.

c) Input analysis. (Functional analysis team). The study of inputs will include a comprehensive assessment of resources available to the thanas of the programme: personnel, facilities, pharmaceuticals and supplies. It also includes an assessment of the extent to which the resources correspond to national MOHPC plans and capabilities: whether staff are posted and trained, and whether logistics capabilities of MOHPC staff in the study area are consistent with national plans.

d) Operations analysis. (Functional analysis team). The study of operations involves the functional analysis of characteristics of the work environment. For each characteristic our research shall attempt to ascertain, 1) if it represents a barrier to implementation, 2) whether corrective measures are possible with training and counterpart orientation, and 3) whether change actually occurs once such corrective measures are attempted by change agents.

Some of the operational issues to be analyzed in functional analysis are:

i. Goal emphasis. Whether workers are clear about the nature of their job, the tasks to be performed and have goals for performance.

ii. Communication. Whether workers communicate about professional matters (laterally or horizontally) and whether communication contributes to performance.

iii. Staff competence. Whether workers have the technical skills needed to perform their tasks.

iv. Task structure and relevance. Whether tasks are being performed, and actual work is consistent with training.

v. Supervisory support. The style and content of supervision, the extent to which it occurs, and whether it can be improved with training.

vi. Work climate. Whether procedures, rules and orientation facilities work or impede performance, whether workers fail to report to work and why.

e) Output analysis. (Survey research and surveillance teams). Outputs of a health or family planning programme are of two types: 1) services rendered, and 2) effects that accrue from services. Output analysis will involve prevalence surveys and sample surveillance in sentinel sample households to assess the following:

i. Service intensity and quality. (Survey research team). Whether villagers encounter MOHPC workers, the frequency of encounters, the nature of the exchanges that transpire, and the benefits, if any, that accrue to the people served. In this area of research it is particularly important to examine the content of services (now that workers are officially multipurpose workers) to determine if services are related to the specific health needs or rather, if the type of services is determined by the worker's prior training and function in the pre-integration period.

ii. Measurement of effects. (Demographic surveillance team). Whether levels of contraceptive use prevalence and related issues are changing, whether the prevalence of diseases is changing, whether demographic processes are constant or changing and the correlates and consequences of such changes. Effect measurement entails enumerating sample households, conducting a baseline survey, and following the population over time in order to monitor health, family planning and demographic events.

3.3 Phases of work in the MCH-FP Extension Areas

Work will proceed in four phases. These phases are 1) orientation and project development, 2) diagnostic research and baseline assessment, 3) intervention and monitoring, 4) research dissemination utilization. We shall consider each, in turn.

3.3.1 Phase 1: Project Development

Some three months will transpire from the time of recruiting a field staff to the time that formal research work begins. During this period the following work will be undertaken:

a) ICDDR,B staff must be oriented to the Matlab project, to the technical aspects of MCH-FP care, to Extension Project field work, and other issues.

b) A preliminary inventory of health services in the project area is essential to understanding the context in which our work must begin.

c) Government officials at all levels must be thoroughly briefed and oriented about the general purposes of the project and the specific scope of work for the first few months.

d) An assessment of MOHPC data systems must be undertaken, a sample designed, and listing completed for selected sample household clusters.

e) Baseline enumeration questionnaires and surveillance instruments must be designed, developed and tested.

f) Preliminary work on the surveillance system software must begin.

g) Baseline enumeration procedures will be designed and implemented.

h) Work routines will be tested and developed. In particular, we plan to pretest modalities of counterpart support.

3.3.2 Phase 2: Diagnostic Research

(Functional analysis and survey research teams). Diagnostic research will involve an additional eight months of intervention and a minimum of three additional months of interpretation, project planning and training in programme development. Two types of "diagnosis" are needed.[1]

3.3.2.1 Baseline survey of households. In order to diagnose community health problems, a baseline socio-demographic background and contraceptive prevalence assessment will be conducted by the ICDDR,B health workers who have gained extensive experience in this field (in Matlab and in Munshigonj). Respondents will be ever married women of reproductive age, with the exception of question modules on social and economic status that are more appropriately administered to household heads.

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[1] One possible use of diagnostic survey research is to use the information collected to structure discussions with MOHPC officials about training needs and plans. This technique of "survey feedback" has been used widely in developed countries (see, for example, Alderfer and Ferriss, 1972) and may be useful in this project. We will be testing this approach with data collected in the Munshigonj MCH-FP Project. Subject to the rather elaborate test of the "survey feedback" approach we may adapt the technique to this project.

The baseline survey will be conducted simultaneously in Matlab and in the MCH-FP Extension areas and will resemble, in certain respects, the study developed by the ICDDR,B to evaluate the German Technical Assistance Agency (GTZ) MCH-FP Project in Munshigonj. Sampling will cover all ever married women of reproductive age of the 5900 sample surveillance households.[1] Conducting the survey in both Matlab and extension areas will permit comparative analysis and operations research on the factors which distinguish Matlab from extension areas. This has been described in a separate protocol to USAID from the Population Council.[2]

Data to be collected in the baseline survey are as follows:

a) Demographic characteristics

- Age specific cohort and period fertility rates, general fertility rates, and estimates of the crude birth rate. Both fertility history[3] and Brass[4] estimates will be conducted.
- Sex specific neonatal mortality rates, infant mortality rates, and data for preparation of model life tables with the estimated crude death rates.[5]
- The net reproduction rate and crude rates of natural increase.
- Demographic characteristics of married women of reproductive age; parity, age, age at marriage, open birth interval, pregnancy prevalence, etc.

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[1] The sample design and rationale for this sample size is discussed in the ICDDR,B MCH-FP Extension Protocol. Demographic assessment sections will be revised according to recommended modules from the World Fertility Survey and the unique requirements of the project. The rationale for this sample size is discussed in Appendix C.

[2] The Matlab survey will be presented to the ICDDR,B in a separate protocol. Nevertheless, we present the proposed survey instrument for the Matlab instrument in Appendix D to provide a basis for discussion of the Extension Project survey.

[3] Fertility history methods have been developed by Bogue and Bogue, 1970 and applied in several surveys (see, WFS 1978).

[4] See Brass et al. 1968 and Brass 1975.

[5] Procedure to be used for Brass mortality estimate are from Brass et al. 1968.

b) Contraceptive use indicators

- Awareness of contraception.
- Intentions to use contraception
- Current use of major modern methods
- Sources of knowledge and supplies
- Reasons for non-use

c) Health and family planning service utilization indicators

- Frequency of contact with government services, personnel nature and content of contact.
- Knowledge about services.
- Service accessibility (both outreach and fixed centres). Types of contraceptive methods and health services rendered in the village.
- Attitudes, beliefs and preferences regarding services. Service quality as perceived by respondents.
- Determinants of decision making for consultation in case of illness, for which illness, to whom and when?
- Exposure to media themes.

d) Indicators of health status and morbidity

- Diarrhoea incidence among children under age five in the past week.
- Dysentery incidence among children under age five in the past week.
- Nutritional status among children under age five.
- Measles prevalence.
- Pertussis prevalence.
- Water availability and utilization, defecation habits.
- Evidence of tetanus among recent fatalities.
- Recall of symptoms leading to recent (4 months) deaths among married women of reproductive age and children under age five.

e) Social and economic status characteristics

- Educational attainment of wife and husband.
- Indicators of landholding, modern objects, economic status, etc.
- Occupation of husband.
- Family type (extended versus nuclear).
- Bari characteristics: size, contraceptive use patterns, and other issues.

f) Community characteristics

- Proximity to transport
- Electrification, amenities; development indicators
- Proximity to health centres
- Gram Sarker development (to be developed and pretested)

3.3.2.2 The Baseline Analysis of MOHPC Operations in the Study Areas

In the study areas we will conduct structured interviews of workers and participant observation of workers.

3.3.2.2.1 Baseline Worker Interviews

Interviews will consist of descriptive indicators of

a) Duration of assignment
b) Duration of training and type
c) Knowledge, beliefs, and practices of family planning and mother and child health care
d) Perceived needs for institutional support
e) Attitudes toward official policies
f) Contact with supervisors and indicators of supervisory support

3.3.2.2.2 Baseline Functional Analysis

Field analysis will be assigned to the project areas to observe work in progress and document critieal operational issues in the extension areas in comparison with the Matlab treatment area and the Munshigonj project area. Among those operational issues to be examined are;

a) Documenting the organization structure and operational pattern of the health service management system with special reference to:

- the adequacy of the management control system including follow-up;
- the logistic system including supply (the channels of supply, the nature of items supplied, their quality, the adequacy of their type and demand) and maintenance (vehicles and material);
- the functioning of supervisory systems;
- the effectiveness of coordination and cooperation among the various departments of the health services from headquarters to thana level;
- the degree of adherence to established regulations, and
- the degree of implementation of Ministry of Health and Population Control (MOHPC) policies and the reasons for any lack or delays in implementation with particular emphasis on the filling of budgeted positions.

Of particular importance will be the documentation of

- the pattern of utilization of the thana static care delivery system by the rural population,
- the pattern of interaction between government health workers and rural population,
- the existing logistic system, and
- the cost of capital and recurrent expenditures.

b) The prospects for developing problem-oriented, problem-solving strategies in order to increase the efficacy and cost-effectiveness of the health system.

c) The prospects for assisting the MOHPC staff in the implementation of those strategies.

d) Strategies for evaluating the impact of these strategies on the improvement of the management of health services and on the long term objectives of the Second Five Year Plan.

e) Recommendations to be implemented in the project implementation phase.

This analysis will be done by observation schedules at fixed intervals for each category of workers at the static health facilities. In the field, daily activities of workers will be observed on a systematic random basis after consultation of their advance tour programme. Last, the method of analysis of patient flow through the health static facilities will be conducted.

3.3.3 Phase 3: Planned Change

3.3.3.1 The diagnostic research phase is expected to provide documented guidelines to design and implement strategies aimed at the upgrading of health and family planning services. This third phase, encompassing planned change, is expected to last one year. While a longer period of intervention is desireable, we aim to limit work to a duration that is replicable in thanas elsewhere. It is this aspect of the project that represents most of the potential MOHPC costs of replicating our work (costs being calculated by multiplying the person months of MOHPC counterparts to the ICDDR,B staff by the MOHPC counterpart actual salary).[1] Although they will have to be confirmed by the results of the diagnostic research phase, the following issues are expected to be identified as priority areas for change:

a) Multipurpose HFPW. As yet field workers do not have sufficient skills in the area of health and family planning as expected under the integration scheme of health and family planning. Our approach will be to train all HFPW in service components irrespective of their system of origin. Owing to the ubiquitous and dysfunctional internecine conflicts between health and family planning workers, it may not be possible to phase in components sequentially as was done in Matlab.

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[1] That is, our intention is to field a self contained team and to develop a work pattern that is replicable. The ICDDR,B direct costs of fielding this team will be higher than the direct costs of MOHPC personnel. We aim to document and research the replicable costs in the course of the project. To do so we will separate the work of this team from the work of research teams.

Instead, administrative constraints may compel us to first help upgrade skills of workers in their system of origin (health or family planning). Then, using the same approach workers will be trained progressively to acquire knowledge and skills for each element of the other system (family planning or health). Irrespective of the system of origin, however, basic training in health knowledge and motivational techniques are likely to be needed, and we hope to develop a unified training programme that accords well with MOHPC goals to integrate and our experience in Matlab with multipurpose health staff development.

b) Supervision. Supervisors have little formal orientation in supervisory methods or technical aspects of work. Special efforts at developing systems for supervisory support are needed to transform the supervisory approach from a search for mistakes to a more effective and empathetic field support of the basic worker activities aimed at an improvement of his/her performances. Simple and effective mechanisms for achieving supervisory support are well developed in Matlab and merit trial with MOHPC workers: 1) The provision of written work routines with detailed home visitation plans, 2) utilization of field records for decision making, 3) frequent union based staff meetings for target setting and problem solving, and other techniques.

c) Field orientation. Orientation sites (Cell III, Table 1) are needed where thana health workers can see, in their own thana, a functioning cold chain, a model FWC, a comprehensive family planning service system, etc. Our team will assign priority to developing all the components of the MCH-FP system with MOHPC staff in one union while all thana workers are being trained. In accordance with our Matlab experience services will be implemented by component, beginning with family planning village services, union based Copper T services, and thana sterilization services. Implementation of each component of the MCH-FP system in the "model" area will precede training for the thana workers as a whole so that field visits, problem solving and orientation at the model sites will accompany training. This will entail phased in development of model sites and bifurcation of the change agents into two groups: 1) counterpart service workers assigned to GOB staff in model sites, 2) professional trainers assigned to the THC to coordinate both model site service development and the central training activities as described above.

d) Management information system. Information systems in the MOHPC typically do not provide information for decision making. An early activity of change agents will be the develop procedures for decision making and simple union based information systems that facilitate supervision and provide accurate and timely information about health and family planning status of the population served. It is expected that if workers and supervisors can get feedback on the impact of their work, their performance will improve. This will not be a computerized operation.

e) Workers job motivation. We are expecting to find that absenteeism, poor motivation and morale, lack of understanding of the programme goals and strategies, lack of field support and supervision are prevalent among GOB MOHPC workers. Conferring recognition on workers for exemplary achievement, fostering interchange between workers, and assisting supervisors in understanding the elements of job satisfaction may contribute to resolving problems of work motivation, although critical problems will remain. Developing strategies for improving job motivation is a central challenge of counterpart support.

Because the objectives of the project are to transfer within the government setting FP and MCH strategies found cost effective in Matlab the phased agenda of implementing strategies will include only strategies having been well studied within the Matlab context. The following general principles will guide training:

a) Specific strategies of training and support will be designed to address issues that arise from our phase two research for each category of worker. The Bangladesh Government health and family planning activities are implemented at the local level by:

- full time basic health workers; the HFPWs (formerly FWA, FWW, GHAs)
- part time workers (VVHW, Dais)
- a cadre of supervisors (FWV, AHFPI etc.) who are expected to provide supervision and field support to those workers

b) Training will be task-specific and aimed at inculcating basic requisite skills for the activities identified by the Bangladesh Government.

c) Training will follow several principles:

i. Our experience in Matlab has demonstrated the value of continuous training provided by supervisors rather than external trainers. Therefore, training will first be given to supervisors in order to "train the trainers". Such an approach actively involves the supervisors from the beginning in project development and also strengthens their status. Moreover, it is cost/effective as it fosters the dissemination of lessons and provides sustained technical support for field work. A key problem with the current system, as we see it, is the absence of needed flexibility in the supervisory system to identify small problems and conduct ad hoc training and orientation sessions without outside expertise or assistance from professional trainers.

ii. Training will begin by involving all workers of at a given level in a thana at a time. Such a technique will ensure uniformity of approach and teaching, provide a feedback on the supervisors knowledge as well as build up group morale. For example all HFPW or all Dai of a thana will be trained within the same period (even if staggered in subgroups). Trainers will be assembled unionwise rather than according to former "vertical" designations, in accordance with the Matlab approach of developing areal service teams.

iii. This didactic training phase at thana headquarters should provide to each category of workers an opportunity to be in contact with other colleagues and their thana supervisor and exposed them to the training material. The second phase of the training will consist of technical training of the local team at union level by field training the different members of the team. Training will again be task-specific but also attuned to the particular conditions prevailing in the union (whether cultural, ecologic, economic).

iv. By rotation, the union team will visit the demonstration union to see by themselves what can be done and how. The purpose of the visit will be to have each category of workers from one union to interact with their colleagues of the same level in the demonstration union as well as with the ICDDR,B counterparts at that level and discuss practical problems, solutions and share experience.

v. Training will be phased in by topics (family planning, ORS, etc.). A new topic will be added only when the previous subjects has been mastered. Routine collection of data on a four month cycle as well as practical observation will provide the necessary indicators to measure the level of performance reached as well as the impact of the training.

vi. Whenever possible, the training material to be used will be the documents already identified by the government as training materials. If necessary the ICDDR,B will provide their own additional training material from modules developed for Matlab.

d) Counterpart support will take place only in the unions identified in the research scheme. We define counterpart support as the unscheduled continuous interaction between ICDDR,B staff (HFPW and supervisors) with their counterparts aimed at the assessment and improvement of their performance. This practical and regular interaction is expected to complement training and to facilitate implementation by ensuring a physical presence of the MOHPE staff in the field during regular work hours. Much is expected to be learned from this aspect of the work to be feedback from one cycle

of activities to the other. We plan to use counterpart support to provide the kind of technical backstopping that supervisors now provide in Matlab, and to eventually transfer that supervisory capability to the MOHPC system. Of particular concern is our impression that training alone will not achieve implementation of change. We are therefore attempting to develop a system for changing the system. Since we cannot yet refer to our diagnostic research or of our field experience in change agentry we cannot, at this point, specify in detail the role of counterpart "change agents". Their job, in general, will be to follow up on training session with a field presence intended to assist in implementation of new approaches.

3.3.3.2 Training Cycle

The work is expected to be implemented in 4 month cycles in all unions, for each category of workers. This will include:

- general training at the thana level,
- training at the union level, and
- visits to the demonstration union.

In two unions counterpart field support will be added. Data collected in the four unions under surveillance will provide information on workers performance as well as on the impact of the training. The results will be generalized to the entire thana and shape the timing and pattern of each component of the MCH-FP programme.

3.3.3.2.1 Family Planning Module

a) First 4 month cycle: Categorical training

i. Training of the supervisors

Trainees: THFPO, TMO, FWVs

Site: Matlab

Duration: 2 weeks

Content: 1. Theory

- The role of family planning at national and individual level: national policies and their rationale;
- Reproductive anatomy and physiology;
- Contraceptive methods: mode of action, indications, side effects, techniques of administration, contra-indications;

- Motivational techniques; which method for whom? Strategies to be used;
- Treatment of contraceptive methods side effects and complications;
- Safe administration of clinical methods:
  - IUD insertion
  - Tubectomies
- Role and techniques of supervision, supervisory support;
- Data collection and maintenance of records: the use of records for continuous feedback and supervisory support at the union level;
- Family planning training materials and techniques of training;
- Supply and logistics management techniques.

ii. Practice

- The UFWC as the central static facility for family planning activities;
- The supervisor as team leader;
- Techniques of home visitation;
- IUD insertion at the UFWC level;
- Conselling of clients at UFWC level;
- Sterilization seesions: from screening of clients to post operative follow up. Importance of safe practices (asepsy and anaesthesia). Introduction of the new regimen of anaesthesia.

b) Training of basic worker

Trainees: HFFW (by batches of approximately 20)

Site: Thana headquarters

Duration: 2 weeks

Content: Didactic training will begin with the following:

- The role of family planning at national and individual level: national policies and their rationale;
- Reproductive anatomy and physiology;
- Contraceptive methods: modes of action, indications, side effects, techniques of administration;
- Motivational techniques: which method for whom? Strategies to be used. A satisfied user as a family planning agent;

- Treatment of contraceptive methods side effects and complications;
- Importance of record keeping: the health and family planning household card and its use in practical problems of service delivery;
- The role of dais;
- The UFWC as the centre of family planning activities;
- Role of referral, procedures, criteria.

c) Training of dais

Trainees: Dais

Site: Thana or union headquarters

Duration: One week

Content:

- The role of family planning at the national and individual level;
- Reproductive anatomy and physiology;
- Contraceptive methods: mode of actions, indications, side effects, techniques of administration, contra-indications;
- Motivational techniques: which method for whom? Strategies to be used. The satisfied user as a local family planning agent;
- Treatment of contraceptive methods side effects and complications;
- The role of dais in motivation and referral.

d) Second 4 month cycle

i. Emphasis on the union level activities

Trainees: HFWA, FWA, Dais, AHPPI

Site: UFWC

Duration: One day every two weeks for four months

Contents:

- Discussing the UFWC as the centre of family planning activities and developing the concept of a union based health and family planning team: work routines, peer support;
- Successful family planning programme management includes introduction of meetings address to developing:

- the cafeteria approach,
- individually tailored counselling,
- discussion of drop outs,
- the handling of side effects and method switching, and
- the family planning worker as a family worker who appreciates ancillary health care needs,

- Analysis and discussion of each individual worker's performance;
- Flow of supplies and materials and review of problems.

ii. Visit of the demonstration union: what is to be done?

iii. In the two unions where counterpart field support will be provided:

- observation of workers (basic and supervisory) activities,
- discussion of problems and performance and provision of technical guidance,
- finding solutions to problems.

3.3.3.2.2 Control of Diarrhoeal Diseases Module

a) General Training (a four month cycle)

i. Training of supervisors

Trainees: SI, AHPPI, FWV

Site: Thana headquarters

Duration: One week

Content:

- Importance of diarrhoeal diseases in Bangladesh (mortality, morbidity);
- Causes and consequences of diarrhoeal diseases. Physiology of dehydration;
- Oral rehydration therapy—nature, benefits, potential risks indication, channel of delivery, packets and labon gur. Field methods and operation;
- Intra-venous(IV) rehydration indications and dangers;
- Role of environmental methods in diarrhoeal disease (DD) control;

- Role of mothers; the public, and practitioners in controlling diarrhoea; community organization for DD control;
- Detection and control of epidemics;
- Techniques of motivation for ORS use; (All supervisors will have received one day of training in Matlab during their visit)
- Production of ORS salts--logistics and supply.

The training will include a one day visit to the NORP office in Jessore or in Rangpur.

ii. Training of health and family planning field workers

Trainees: HFPW

Site: Either thana or union level during the usual routine meeting

Duration: Two hours a week every week for 3 months

Content:

- Importance of diarrhoeal diseases;
- Causes and consequences of DD;
- Oral rehydration therapy;
- Community organization and DD control: depot holders and the bari mother system;
- Techniques of motivation;
- Logistics, supply, and record keeping.

iii. Training of palli chikitsok

Trainees: Palli Chikitsok

Site: Thana headquarters

Duration: One week

Content:

- Importance of diarrhoeal diseases;
- Causes and consequences of DD;
- Oral rehydration therapy;
- Community organization and DD control: depot holders and the bari mother system;
- Techniques of motivation;

- Logistics, supply, and record keeping;
- Detection and control of epidemics;
- The role of antibiotics in the treatment of diarrhoeal diseases.

iv. Training of indigenous practitioners

Trainees: Indigenous practitioners on a voluntary basis

Site: Thana headquarters

Duration: One week

Content:

- Importance of diarrhoeal diseases;
- Causes and consequences of DD;
- Oral rehydration therapy;
- Community organization and DD control; depot holders and the bari mother system;
- Techniques of motivation;
- Logistics, supply, and record keeping;
- Detection and control of epidemics;
- The role of antibiotics in the treatment of diarrhoeal diseases;
- Role of indigenous practitioners in the treatment of DD.

v. Training of depot holders (one per 500 people)

Trainees: Voluntary UVHW (by group of 10)

Site: In the village

Duration: One day

Content:

- Importance of dehydration in diarrhoeal disease mortality;
- Causes of diarrhoeal disease;
- ORS solution: benefits and risks;
- How to prepare ORS
  - from packet
  - from labon gur;
- Importance of proper measurement of water.

3.3.3.2.3 Control of Tetanus Neonatorum Mortality Module

(a four month cycle)

Tetanus, particularly neonatal tetanus is prevalent in rural Bangladesh. Its incidence is almost exclusively concentrated in the first month of life (incidence of 75 per 1000 life births) and represents 50 percent of the infant mortality. Its causes have been related to unhygienic delivery practices.

The strategy to be used will aim for

a) Immunization of all women between 10 to 44 years of age group by tetanus toxoid injections. This campaign will be preceded by village meetings and mobilisation of opinion (posters, hats, etc.);

b) Demonstration the importance of the hygiene of delivery practices by
   - training of the dais
   - supply a low cost kit for delivery by HFPW

The schedule will includes

a) Training of the trainers

Trainees: AHFPI, THFPO, FWV, MA

Site: Thana headquarters

Duration: One week

Content:

- Role of tetanus among the causes of infant mortality;
- Role of dirt, cow dung and unhygienic delivery practices in the transmission of tetanus;
- Symptom of tetanus. Differential diagnosis;
- Prevention of tetanus: tetanus toxoid
  - nature, mode of administration, cold chain
- Prevention of tetanus: hygienic of delivery practices. The kit: its content and use.

b) Training of dais

Trainees: Dais

Site: UFWC

Duration: One day

Content:

- Role of tetanus among the causes of infant mortality;
- Role of dirt, cow dung and unhygienic delivery practices in the transmission of tetanus;
- Symptoms of tetanus. Differential diagnosis;

- Prevention of tetanus; tetanus toxoid - nature, mode of administration, cold chain
- Prevention of tetanus; hygienic of delivery practices. The kit; its content and use
- Role of dais in the prevention of tetanus.

c) Training of HFPW

Trainees: HFPW

Site: Thana and UFWC

Duration: One day every two weeks during the 4 month cycle

Content:

- Role of tetanus among the causes of infant mortality;
- Role of dirt, cow dung and unhygienic delivery practices in the transmission of tetanus;
- Symptom of tetanus. Differential diagnosis;
- Prevention of tetanus: tetanus toxoid - nature, mode of administration, cold chain;
- Role of HFWC in the prevention of tetanus;
- Discussion of individual performance and coverage.

d) Refresher courses at the union level every six months to assess the adequate supply of kits and the adequate systematic vaccination coverage.

3.3.3.3 Summary of Training Activities

i. The training will encompass a comprehensive upgrading of technical skills of FWA, FPA, and FWVs by groups training at the union level.

Training will build upon elements of the Matlab experience which have accounted for our success: tailoring services to the client's perceived needs, providing multiple methods, with paramedical backup and ubiquitous supply points, routine follow-up and referral and household treatment of minor medical complaints.

ii. Improvement of the safety of sterilization by review of the standard and actual practices, by physical presence of the ICDDR,B team during mobile camps, and by counterpart support during operating sessions at the THC.

iii. Promoting the UFWC as a family planning center where IUDs are safely inserted and where a congenial atmosphere, respecting the purdah rules, offer to women assistance of MCH as well as on family planning.

iv. Effective field support in two unions by daily interaction with the family planning workers in the homes they are expected to visit.

The Matlab experience suggests that the family planning is much better accepted when some elements of child care are associated with it. Because of the importance of diarrhoeal diseases in contributing to under five mortality, the control of diarrhoeal diseases will start soon after the family planning. It will have two components:

i. Oral rehydration solution utilization at the home level by training of government workers, indigenous practioners, dais and mothers.

ii. Availability of treatment at union level (UFWC).

After introduction of ORS a third strategy aimed at the reduction of neonatal tetanus will be started. It will consist of immunization of women of child bearing age with tetanus toxoid vaccine, and improvement of the safety of delivery practices by training of the dais.

3.3.4 Phase 4: Monitoring and Utilization of Results

After change agents and trainers are withdrawn from the field monitoring will continue for one year to ascertain the lasting effects of intervention. Two surveys of both GOB workers and villages will repeat baseline instruments and permit assessment of the year end impact of the project and the final impact at the end of surveillance.

Our plan for the final year of the project is to utilize the cadre of trainers and change agents as trainers of transfer agents for the GOB. Details of this operation have not been developed but an objective is to close the project with a systematic effort to develop change agent skill in the MOHPC.

An additional phase 4 objective is to collaborate with the MOHPC officials in the dissemination of the project results. The nature of that collaboration will be as follows:

From the beginning of the project, close collaboration should take place between the ICDDR,B principal investigators and the national high level officials through regular meetings to explain the goals of the project, obtain suggestions and commonality of aims, and, obtain essential support.

At regular intervals, meetings will be held to review the progress of the project; to discuss the findings; to discuss concrete steps for improvement; to propose short and mid-term operational goals.

At the district level, the Civil Surgeon and the Family Planning Deputy Director are the project national counterparts. Their close association with the project will be elicited in terms of common meetings, field visit, discussion of the findings etc. They will be encouraged to visit Matlab and the ICDDR, facilities in Dacca. In addition, at subdivisional and district level, visits of THA and TFPMO to the project sites as well as their participation in the discussion of progress will be encouraged through tours and meetings at the project aites.

In addition to the local dissemination of the information of the project organization, progress and findings, written documents will be disseminated nationally through conferences, reports, and publications. Our plan is to present work in international health and family planning conferences.

3.4 Summary of Operational Activity

Our methodology, in summary, consists of a variety of components. We will sample 4 unions in each of 2 thanas and subsample households in each. These sample households will be observed in a baseline and a terminal survey with longitudinal sample surveillance in the course of three years. Observation of households will determine if health and family planning behavior is changing and whether our attempt to transfer technology has affected demographic processes.

Over time our workers will undertake an assessment of needs and problems, a comprehensive retraining of thana staff, and, in selected areas, counterpart support. We will attempt to observe and document changes in operations and advise the GOB on problems and possible solutions. Treatments will permit assessment of the effect of ICDDR,B counterpart support in 4 sample unions versus effects of training in the absence of counterpart support.

A summary of the scope of work for 1982 appears in Table 6.

Table 6: Scope of Work for 1982

	January	February	March	April	May	June	July	August	September	October	November	Decembe
Training and Counterpart Support	Staff Recruitment Training and Development		Interaction at national level Project Planning	Interaction at disctict level	Orientation Course in Matlab for District Officials	Planning and Design of material and training content based on the inventory of services		Development of a model block in each thana and of a model FP-MCH clinic in THC		First four month cycle general training of each level of workers in family planning		
Functional Analysis	Staff Recruitment Training and Development		Inventory of services		Design and pretesting of instruments		Assessment of 1) Safety sterilization practice 2) Workers knowledge and attitude 3) Function of static facilities at THC, UFWC			Assessment of the determinants of Government health and family planning services utilization (ambulatory + static)		
Demographic Surveillance	Staff Recruitment Training and Development		Listing of households, Identification of Sentinel Sample Households			Pretesting of base-line data collection instruments	Baseline survey in the sentinel sample households for family planning, socio-economic status and health			Beginning of routine data collection		
Survey Research Team	Staff Recruitment Training and Development		Listing of households, Identification of Sentinel Sample Households			Pretesting of base-line data collection instruments	Baseline survey in the sentinel sample households for family planning, socio-economic status and health			Beginning of research surveys		

D. SIGNIFICANCE

Although considerable effort, resources, and international attention has been addressed to the implementation of special projects in the health and family planning field, their relevance to MOHPC operations has been questioned. By answering the question of what is relevant, what is not, and why in the MOHPC administrative context we will contribute to achieving a fuller understanding of how the work of special projects can be translated in to appropriate administrative changes and action. Just as it is important to demonstrate, through special projects, that demographic and health development is possible in rural Bangladesh, it is important to demonstrate the capacity of the GOB to replicate that success and to develop mechanisms for further replication of success throughout Bangladesh.

E. FACILITIES REQUIRED

No specific facility is required as such. Due to the collaboration of the Government, office space has been provided at the thana health centres of the two project sites. The Dacca office was provided by the Munshigonj project.

F. COLLABORATIVE ARRANGEMENTS

This project represents a joint collaborative effort between the ICDDR,B and the GOB MOHPC to improve the management of health delivery services and to reduce maternal and under-five years of age mortality as well as fertility in three thanas of Bangladesh. Because of the difficulties which are inherent in the very nature of the project, MOHPC high level support will be needed throughout the duration of the project. A coordinating committee (CC) should be created from the beginning of the project to meet bi-monthly. The CC should include the GOB MOHPC high level officials identified by the ministry as being responsible for the project, as well as the ICDDR,B Project Coordinator and the Associate Directors. The role of the CC meeting would be to brief the participants on the progress of the project, to identify problems and to make decisions to solve these problems.

At the district level, the counterparts for the project will be the Civil Surgeon and the Deputy Director for Family Planning. The assignment to the project of a Consultant who used to be a top senior Government health official should facilitate the smooth interaction of ICDDR,B and Government officials during the length of the project.

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SECTION III — BUDGET

A. Overview

The results of special projects are often discredited by their high costs with the conclusion: "It is not replicable". While it could be argued that the question of replicability does not apply here (see, for example, Taylor 1981), when it comes to the issue of costs (either capital or recurrent) the issue is crucial since the Bangladesh government health systems operate within the tight limit of the budget defined in the Five Year Plan.

In this protocol, we have specified that the present research protocol would only transfer strategies "cost/effective in the specific frame of the Bangladesh Government services" (p42).

The major constraints to government health services activities as defined by the 2nd Five Year Plan have been reviewed in this document (p.36). They can be classified in three groups: 1) lack of skills and motivation of the staff resulting in poor implementation, 2) shortage of medicines and material, and 3) deficiency in management.

The first two groups need no financial additional input to ameliorate since problems are training and management related. It is the assumption of this research protocol that existing manpower can be used which are not at present operating effectively, and that staff development is therefore our principal intervention.

The shortage of medicine is generally due to high costs and mismanagement of what has been provided. This project may ultimately assist in that direction by

a) stimulating the present promotion of basic generic drugs under the Pharmaceutical Production Unit Scheme (PPU)

b) improving the allocation of government supplies to the most needy

c) stimulating alternative participation of the private sector and community initiatives (distribution of low cost Gonoshasthya Kendro generic drugs, indigenous medicine, community drug cooperatives, insurance schemes etc...).

If the project is not going to recommend costly schemes or additional expensive inputs then, why the budget of US $ 276,458 for 3 locations (Dacca, Sirajgonj, and Noapara)? Constructing this project requires development of our infrastructure in Extension Work. When a building is being erected a scafolding is necessary all along and in the first stages of the project even though its structure may appear overwhelming. Eventually, however, it will be discarded when not needed. We see the various functions undertaken by the ICDDR,B staff in this project as a temporary parrallel structure needed to strengthen the government structure through careful documentation and analysis of the problems, definition

Budget (contd.)

of adequate state strategies to solve them, implementation and evaluation of these strategies. It is thus the special research costs of operations research that account for the budget.

Two examples will illustrate this. First, Mouza updating. This takes place in the MOHPC every year for 6 weeks, during which houses are visited, house numbers and cards updated and population listed. The syetem has not been evaluated in reference to its comparability with the information obtained from each successive round of the FWWs. To assess the reliability of such a system, houses must be visited on a random basis, their population listed and the results analysed. This ICDDR,B operation takes people and therefore money. Secondly, each intervention implemented through the grovernment health workers will have to be monitored for operational outcomes and output.

In summary, it should be clear that the aims of the protocol are to implement a model and at the same time to measure all aspects related to its implementation. Moving this investment of two thanas will ensure the quality of the model, and given guideline to be followed for further implementation at subdivision and district level. To clarify potential costs to the GOB we will account for costs in terms of "replicable costs" and special "ICDDR,B Research Costs". We can therefore present results in terms of what it would cost the MOHPC to post a team of change agents to selected thanas to replicate, once again, the work that we are doing.

SUMMARY OF THE BUDGET
(IN US DOLLARS)
MCH-FP EXTENSION PROJECTS - 1982

Sl.No.	Heads of Expenditure	Dacca	Sirajgonj	Noapara	Total
1.	Personnel	103803	41748	40581	186132
2.	Travel & Transportation including Gasoline for Speed Boat Car/Rickshaw/country Boat	9870	7425	8025	25320
3.	Rent Communication & Utilities	470	1235	3235	4940
4.	Printing and Reproduction	2860	-	-	2860
5.	Computer	17830	-	-	17830
6.	Supplies and materials	1630	993	993	3616
7.	Equipment and Furnitures	9760	13000	13000	35760
	Grand Total	146223	64401	65834	276458

MCH-FP EXTENSION PROJECT, DACCA OFFICE

DETAILED BUDGET

(IN US DOLLAR)

1. PERSONNEL

Sl.No.	Name	Position	Level/ Step	Monthly Salary	Total Man Month	Man Month and Cost				Total Cost 1982
						January-September		October-December		
						Man month	Cost	Man month	Cost	
A.	Scientific Support									
1.	_____	Extn. Coordinator	-	4914.33	9	6	29486	3	14743	44229
2.	_____	Physician Consultant	-	650	12	9	5850	3	1950	7800
3.	_____	Economist Consultant	-	400	3	-	-	3	1200	1200
4.	_____	Other Consultant	-	400	9	6	2400	3	1200	3600
5.	Dr. Mizanur Rahman	Training Physician	VII/7	433	3	-	-	3	1299	1299
	TOTAL						37736		20392	58128
B.	Training and Counterpart									
1.	Dr. Mizanur Rahman	Training Physician	VII/7	433	6	6	2598	-	-	2598
2.	_____	Para Medic Trainer	VII/1	333	5	5	1665	-	-	1665
	TOTAL						4263	-	-	4263
C.	Functional Analysis									
1.	Dr. Mizanur Rahman	Training Physician	VII/7	433	3	3	1299	-	-	1299
2.	_____	Para Medic Trainer	VII/1	333	3	-	-	3	999	999
3.	_____	Asst. Scientist, Operation Research	VII/4	383	5	2	766	3	1149	1915
4.	Mr. Bazle Hossain	Statistical Officer	V/1	193	1	1	193	-	-	193
5.	_____	Data Processing Assistant	IV/4	133	1	1	133	-	-	133
6.	Ms. Shirin Begum	Coding Assistant	III/3	108	12	9	972	3	324	1296
	TOTAL						3363		2472	5835

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Dacca Office

Sl.No.	Name	Position	Level/ Step	Monthly Salary	Total Man Month	Man Month and Cost				Total Cost 1982
						January-September		October-December		
						Man month	Cost	Man month	Cost	
D.	**Demographic Surveillance**									
1.	_____	Asst. Scientist, Statistician	VII/4	383	12	9	3447	3	1149	4596
2.	Mr. Bazle Hossain	Statistical Officer	V/1	193	6	6	1158	-	-	1158
3.	_____	Data Processing Assistant	IV/4	133	23	23	3059	-	-	3059
4.	_____	Coding Assistant	III/3	108	36	36	3888	-	-	3888
	TOTAL						11552		1149	12701
E.	**Survey Research**									
1.	_____	Asst.Scientist Demographer	VII/4	383	5	2	766	3	1149	1915
2.	Mr. Bazle Hossain	Stat. Officer	V/1	193	5	2	386	3	579	965
3.	_____	Data Proc. Asst.	IV/4	133	36	-	-	36	4788	4788
4.	Mrs. Nure Akhtar	Coding Assistant	III/3	108	12	9	972	3	324	1296
5.	Mrs. Farida Yasmin	Coding Assistant	III/3	108	12	9	972	3	324	1296
6.	Mrs. Mahfuza Begum	Coding Assistant	III/3	108	12	9	972	3	324	1296
7.	_____	Coding Assistant	III/3	108	24	8	864	16	1728	2592
	TOTAL						4932		9216	14148
F.	**Administrative Support**									
1.	Mr. Mirza I. Haque	Sr. Admn. Officer	VI/4	240	12	9	2160	3	720	2880
2.	Mr. Khaled Jahangir	Sr. Secretary	VI/3	230	12	9	2070	3	690	2760
3.	Mr. A.B. Siddique	Clerk	III/3	108	12	9	972	3	324	1296
4.	Mr. Mohammad Ali	Attendant	I/1	66	12	9	594	3	198	792
5.	Overtime and On Call Allowances					9	750	3	250	1000
	TOTAL						6546		2182	8728

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Dacca Office

		IN US $
2.	TRAVEL AND TRANSPORTATION	
	A. Local:	
	i) Road and Water Travel	460
	ii) Per diem	110
	B. International:	
	International Air Journey and per diem	9300
	Sub Total:	9870
3.	RENT, COMMUNICATION AND UTILITIES (Sundry)	
	i) Telephone charge @ Tk. 200/- month, 12 months	120
	ii) Electric bill @ Tk. 500/- per month, 12 months	300
	iii) Postage etc.	50
	Sub Total:	470
4.	PRINTING AND REPRODUCTION	
	i) Printing of Forms/Questionnaire(10000 sets of Forms 15 pages) 300 reams of paper @ Tk. 75/- each ream.	1125
	ii) Stencils 300 sheets @ Tk. 10/- each, Tk.3000/-	150
	iii) Binding of books/records	585
	iv) Xeroxing	1000
	Sub Total:	2860
5.	COMPUTER	
	i) Off line Computer and Equipment	16000
	ii) Computer services	1830
	Sub Total:	17830
6.1	SUPPLIES AND MATERIALS	
	i) House keeping	100
	ii) Janitorial	75
	iii) Office supplies/stationeries	1355
	iv) Vehicle maintenance	100
	Sub Total:	1630

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Dacca Office

IN US $

7. EQUIPMENT AND FURNITURE

1)	Calculator HP-41-C (Mark Line)	800
2)	Calculator Statistical (20)	1000
3)	Cassette Dictaphones	500
4)	Typewriter Bengali (Manual) One	730
5)	File Cabinets (Steel) (8)	800
6)	Steel Almirah (1)	150
7)	Air Coolers (2)	4000
8)	Table Full Secretariat (2) @ Tk.3000/-each	300
9)	Table Half Secretariat (5) @ Tk.2000/-each	500
10)	Desk Typing (2) @ Tk.800/-each	80
11)	Book Shelf (10) @ Tk.500/-each	250
12)	Chair Arm, Cushioned (6) @ Tk.1500/-each	450
13)	Chair without Arm, Plastic Caned (8) @ Tk.200/-each	80
14)	Chair with Arm (4), Plastic Caned @ Tk.300/-each	60
15)	Paper Tray (3 shelves) (16) @ Tk. 75/- each	60
	Sub Total:	9760

MCH-FP EXTENSION PROJECT, SIRAJGONJ

DETAILED BUDGET

(IN US DOLLAR)

1. PERSONNEL

Sl.No.	Name	Position	Level/ Step	Monthly Salary	Total Man Month	Man Month and Cost				Total Cost 1982
						January-September		October-December		
						Man Month	Cost	Man Month	Cost	
A.	Training and Counterpart									
1.	Mr. Azizul Haque	SFRO	VI/7	270	8	5	1350	3	810	2160
2.	Mr. Jacob Khyang	SHA	IV/3	127	12	9	1143	3	381	1524
3.	Mrs. Aroti Khyang	LHV	IV/3	127	12	9	1143	3	381	1524
4.	Mr. Probir K. Ghosh	HA	III/2	103	12	9	927	3	309	1236
5.	Mr. Jahangir Alam	HA	III/2	103	12	9	927	3	309	1236
6.	Mrs. Jahanara Begum	HA	III/2	103	12	9	927	3	309	1236
7.	_____	HA	III/2	103	5	2	206	3	309	515
	TOTAL						6623		2808	9431
B.	Functional Analysis									
1.	_____	SHA	IV/3	127	5	2	254	3	381	635
2.	Mr. Maqbul Ahmad	HA	III/2	103	12	9	927	3	309	1236
3.	Mrs. Mallika Sarker	HA	III/2	103	12	9	927	3	309	1236
4.	Mrs. Ela Goswami	HA	III/9	139	12	9	1251	3	417	1668
5.	_____	HA	III/2	103	12	9	927	3	309	1236
	TOTAL						4286		1725	6011

Sirajgonj

Sl.No.	Name	Position	Level/ Step	Monthly Salary	Total Man Month	Man Month and Cost				Total Cost 1982
						January - September		October-December		
						Man Month	Cost	Man Month	Cost	
C.	**Demographic Surveillance**									
1.	Mr. Azizul Haque	SFRO	VI/7	270	4	4	1080	-	-	1080
2.	Mr. J. Majumder	SHA	IV/3	127	12	9	1143	3	381	1524
3.	Mr. A. Gafur	HA	III/2	103	12	9	927	3	309	1236
4.	Mrs. Runia Begum	HA	III/2	103	12	9	927	3	309	1236
5.	_____	HA	III/2	103	5	2	206	3	309	515
6.	_____	HA	III/2	103	5	2	206	3	309	515
7.	_____	Data Collectors	III/2	103	48	12	1236	36	3708	4944
	TOTAL						5725		5325	11050
D.	**Survey Research**									
1.	_____	SFRO	VI/2	220	6	3	660	3	660	1320
2.	_____	Data Collectors	III/2	103	48	12	1236	36	3708	4944
	TOTAL						1896		4368	6264
E.	**Administrative Support**									
1.	Mr. Kazi F. Rahman	AA	IV/3	127	12	9	1143	3	381	1524
2.	Mr. Anwar Hossain	Clerk	III/2	103	12	9	927	3	309	1236
3.	Mr. Mufazzal Hossain	Driver,Car	II/3	89	12	9	801	3	267	1068
4.	_____	S.B.Driver	II/1	83	12	9	747	3	249	996
5.	Mr. Sk. A. Muzaffar	Messenger	I/1	66	12	9	594	3	198	792
6.	Mr. A. Torab	S. Guard	I/1	66	12	9	594	3	198	792
7.	Mr. Kudrat Ali	S. Guard	I/1	66	12	9	594	3	198	792
8.	Mr. Hasan Ali	Cleaner	I/1	66	12	9	594	3	198	792
9.	Overtime and On Call Allowance					9	750	3	250	1000
	TOTAL						6744		2248	8992

(IN US DOLLAR)

2. TRAVEL AND TRANSPORTATION OF PERSONS (Includes Gasoline for Speed Boat/LCar and Country Boat & Rickshaw Fare)

A.	Gasoline for Speed Boat and Car	
i.	Petrol for Speed Boat - 6 galls/day, 15 days/month 5 months = 450 galls @ Tk. 70/- each gal. = Tk.31500/-	1575
ii.	Mobil for Speed Boat and Car = 30 galls @ Tk.125/- = Tk. 3750/-	188
iii.	Diesel for Microbus = 2 galls/day, 22 days/month 10 months = 440 galls @ Tk.35/- (Tk.15400/-)	770
iv.	Countryboat/Rickshaw fare for project activities Tk. 15000/-	750
v.	Transportation of persons by Air/public transport while going on duty to Sirajgonj-Dacca and vice versa	1500
vi.	Per diem	2500
B.	Transportation of materials	
i.	Overseas supplies and equipment	NIL
ii.	Local	142
	Sub Total:	7425

3. RENT, COMMUNICATION AND UTILITIES (Sundry)

a) i.	Renting of one Guest House for 4 months (August-December) @ Tk.1500/- p.m. = Tk.6000/-	300
ii.	Electric bill for the Guest House.	37
iii.	Purchase of Furnitures for Guest House.	163
b)	Communication (Postate stamps and trunk call charges)	35
c)	Contengency	700
	Sub Total:	1235

4. SUPPLY AND MATERIALS

a)	House keeping	50
b)	Janitorial	50
c)	Office supplies and stationeries	793
d)	Vehicle maintenance	100
	Sub Total:	993

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5. FURNITURE AND EQUIPMENT (IN US DOLLAR)

Equipment:

Description of items	Quantity	Rate	Amount
a) File Cabinet	3	100	300
b) Steel Almirah	1	200	200
c) Typewriter English(Manual)	1	850	850
d) Bi-cycle	4	100	400
e) Vehicle 4 wheel drive	1	8000	8000
f) Speed Boat with Engine	1	1500	1500
g) Electric Ceiling Fan	2	87.50	175

Furniture:

a) Desk Full Secretariat	2	150	300
b) Table Conference	2	100	200
c) Desk Half Secretariat	3	100	300
d) Chair Armed (Foamed)	2	60	120
e) Chair Armed (Caned)	4	15	60
f) Chair without Arm (Caned)	30	12.50	375
g) Shelves Wooden, H6'xB4'xD1'	2	60	120
h) Chalk Board	2	30	60
i) Notice Board	2	20	40
		Sub Total:	13000

MCH-FP EXTENSION PROJECT, NOAPARA

DETAILED BUDGET

(IN US DOLLAR)

1. PERSONNEL

Sl.No. Name	Position	Level/ Step	Monthly Salary	Total Man Month	Man Month and Cost				Total Cost 1982
					January-September		October-December		
					Man Month	Cost	Man Mongh	Cost	
A. Training and Counterpart									
1. Mr. Mafizur Rahman	SFRO	VI/2	220	8	5	1100	3	660	1760
2. _____	SHA	IV/3	127	5	2	254	3	381	635
3. Mrs. Janema Begum	LHV	IV/3	127	12	9	1143	3	381	1524
4. Mrs. Shahida Begum	HA	III/2	103	12	9	927	3	309	1236
5. Mrs. Rokeya Begum	HA	III/2	103	12	9	927	3	309	1236
6. _____	HA	III/2	103	5	2	206	3	309	515
7. _____	HA	III/2	103	5	2	206	3	309	515
TOTAL						4763		2658	7421
B. Functional Analysis									
1. Mr. A. Kaium Sikder	SHA	IV/3	127	12	9	1143	3	381	1524
2. Mr. Nakibur Rahman	HA	III/2	103	12	9	927	3	309	1236
3. Mr. M. A. Ahad	HA	III/2	103	12	9	927	3	309	1236
4. Mrs. Dilara Begum	HA	III/2	103	12	9	927	3	309	1236
5. _____	HA	III/2	103	5	2	206	3	309	515
TOTAL						4130		1617	5747

.../...

Sl.No.	Name	Position	Level/ Step	Monthly Salary	Total Man Month	Man Month and Cost				Total Cost 1982
						January-September		October-December		
						Man Month	Cost	Man Month	Cost	
C.	Demographic Surveillance									
1.	Mr. Mafizur Rahman	SFRO	VI/2	220	4	4	880	-	-	880
2.	Mr. Shahadat Zaman	FRO	V/1	193	12	9	1737	3	579	2316
3.	Mr. Mustafa Khan	HA	III/2	103	12	9	927	3	309	1236
4.	Mr. Emdadur Rahman	HA	III/2	103	12	9	927	3	309	1236
5.	_____	HA	III/2	103	5	2	206	3	309	515
6.	_____	HA	III/2	103	5	2	206	3	309	515
7.	_____	HA	III/2	103	5	2	206	3	309	515
8.	_____	Data Collector	III/2	103	48	12	1236	36	3708	4944
	TOTAL						6325		5832	12157
D.	Survey Research									
1.	_____	SFRO	VI/2	220	6	3	660	3	660	1320
2.	_____	Data Collector	III/2	103	48	12	1236	36	3708	4944
	TOTAL						1896		4368	6264
E.	Administrative Support-									
1.	Mr. Md. Abdus Samad	AA	IV/4	133	12	9	1197	3	399	1596
2.	Mr. M.A. Ghani Sarker	Clerk	III/2	103	12	9	927	3	309	1236
3.	Mr. Shorab Ali	Driver,Car	II/1	83	12	9	747	3	249	996
4.	Mr. Abul Hossain	Speedboat Driver	II/1	83	12	9	747	3	249	996
5.	Mr. Mahtab Ali	Messenger	I/1	66	12	9	594	3	198	792
6.	Mr. Fazlul Karim	S.Guard	I/1	66	12	9	594	3	198	792
7.	Mr. Delwar Hossain	S.Guard	I/1	66	12	9	594	3	198	792
8.	Mr. Eskander Miah	Cleaner	I/1	66	12	9	594	3	198	792
9.	Overtime and On Call Allowance					9	750	3	250	1000
	TOTAL						6744		2248	8992

.../...

(IN US DOLLAR)

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2. TRAVEL AND TRANSPORTATION COST OF PERSONS (Including Gasoline for SPeed Boat/Car and Rickshaw/Country Boat fare)

A. Gasoline for Speed Boat/Car

i)	Petrol for Speed Boat - 6 galls/day, 15 days/mongh 5 months = 6 x 15 x 5 = 450 galls @ Tk.70/- per gal = Tk. 31500/-	1575
ii)	Mobil for Speed Boat/Car = 30 galls @ Tk. 125/- per gal = Tk. 3750/-	188
iii)	Diesel for Car = 2 Galls/day, 22 days/mongh 10 months = 2x22x10 = 440 galls @ Tk. 35/- Tk. 15400/-	770
iv)	Country Boat/Rickshaw fare etc. for Project activities for the whole year. = Tk. 15000/-	750
v)	Transportation of persons by Air/public transport for going from Dacca to Jessore and back, Jessore-Dacca-Jessore.	1800
vi)	Per diem of the staff visiting Jessore-Dacca, Dacca-Jessore.	2800
B.	Transportation of materials (local)	142
	Sub Total:	8025

3. RENT, COMMUNICATION AND UTILITIES (Sundry)

a) i)	Renting of one Guest House for 5 months @ Tk. 1500/-per month	375
ii)	Electric bill for 5 months for the Guest House @ Tk. 250/- per month	63
iii)	Purchase of Crockeries/cutleries etc.	812
iv)	Purchase of equipment/furnitures for Guest House	1000
v)	Wages for the Chawkider-cum-Cook for the Guest House for 5 months = Tk. 5000/-	250
b)	Communication	35
c)	Contengency	700
	Sub Total:	3235

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4. SUPPLIES AND MATERIALS

1.	House keeping	50
2.	Janitorial	50
3.	Office Supplies and Stationeries	793
4.	Vehicle maintenance	100
	Sub Total:	993

5. FURNITURE AND EQUIPMENT

	Equipment:	Quantity	Rate	Amount
1.	File Cabinet	3	100	300
2.	Steel Almirah	1	200	200
3.	Typewriter English(Manual)	1	850	850
4.	Bi-cycle	4	100	400
5.	Vehicle 4 wheel drive	1	8000	8000
6.	Speed Boat with Engine	1	1500	1500
7.	Electric Ceilling Fan	2	87.50	175
	Furniture:			
1.	Desk Full Secretariat	2	150	300
2.	Table Conference	2	100	200
3.	Desk Half Secretariat	3	100	300
4.	Chair Armed (Foamed)	2	60	120
5.	Chair Armed (Caned)	4	15	60
6.	Chair without Armed (Caned)	30	12.50	375
7.	Shelves Wooden, H6'xB4'xD1'	2	60	120
8.	Chalk Board	2	30	60
9.	Notice Board	2	20	40
			Sub Total:	13000

APPENDIX A

The Structure of the Ministry of Health and Population Control Service System

In our presentation in the main text we stated that the organizational structure of the service system of the MOHPC will not in any way be altered by our project. It is therefore appropriate to document our understanding of the MOHPC structure. In particular, it is appropriate to show aspects in which the programme is formally "integrated" (that is, a functioning multipurpose health and population control system) and in which aspects it is "vertical" (a single purpose bureaucracy).

Figure A-1[1] shows the structure of senior management of the ministry as of March, 1982. It is at this level of the program that integration achieved: The Secretary and the Joint Secretary are responsible for the health and family planning. As Figure A-1 shows, two Director Generals (DG) in Dacca administer separate systems. The Establishment DG administers health services (Figure A-2) while a separate DG administers the Population Control and Family Planning (PCFP) system (Figure A-3). As Figure A-3 shows, this structure for PCFP extends to Divisions through a DG of Implementation and Directors of each Division and to districts through the Deputy Directors in each. Three special services branches are concerned with administration, programme development, planning and research and training.

Figure A-4 presents health services at the various levels, and shows how administration of health services and family planning follow different structures (cf. Figure A-3 and A-4) down to the thana level. At the thana integration is achieved by having a single officer in charge although THFPA AND THFPO typically operate separately (Figure A-5). Thus the FPHA is yet to be implemented as health workers typically report to the THA and family planning workers to the TFPO. This separate structure for PCFP workers is shown in Figure A-6.

Table 1 summarizes the types of MOHPC staff and their allocation to geographical areas.

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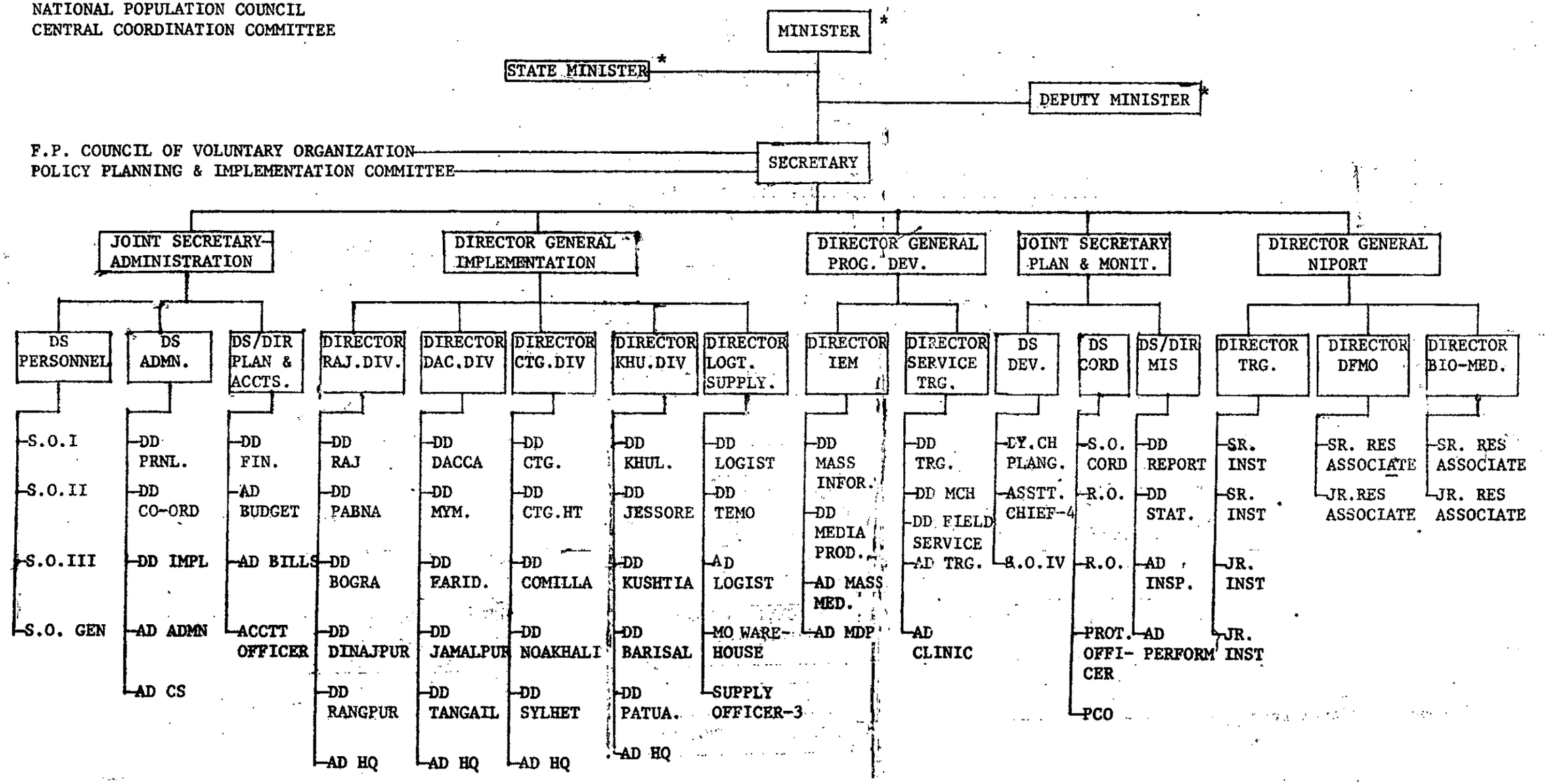
[1] A glossary of terms appears at the end of this Appendix.

FIGURE A-3

POPULATION CONTROL AND FAMILY PLANNING DIVISION



*On March 24, 1982 these positions were merged into a single position, "Advisor, Health and Population Control," to the Chief Martial Law Administrator.

FIGURE A-4

ORGANOGRAM OF HEALTH SERVICES

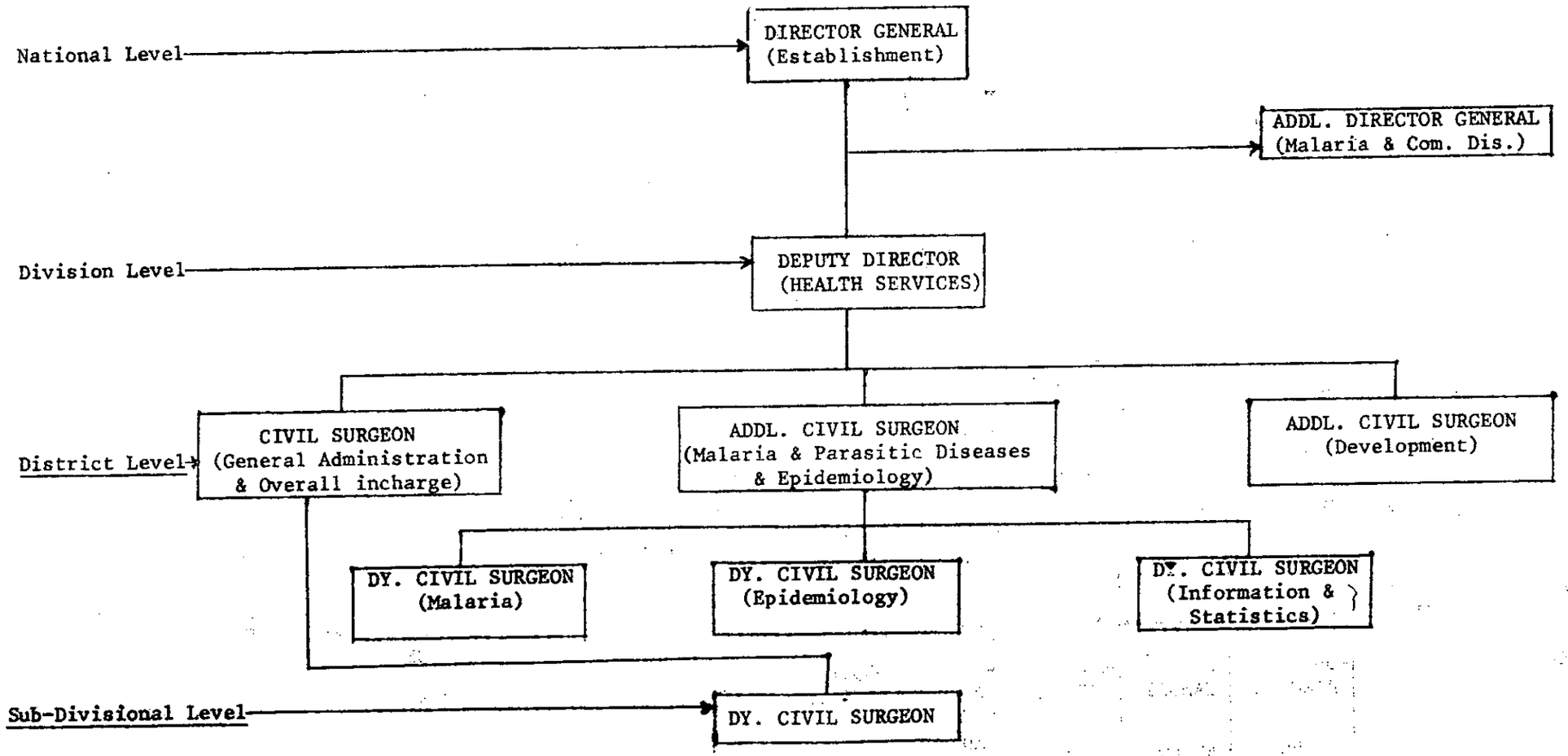
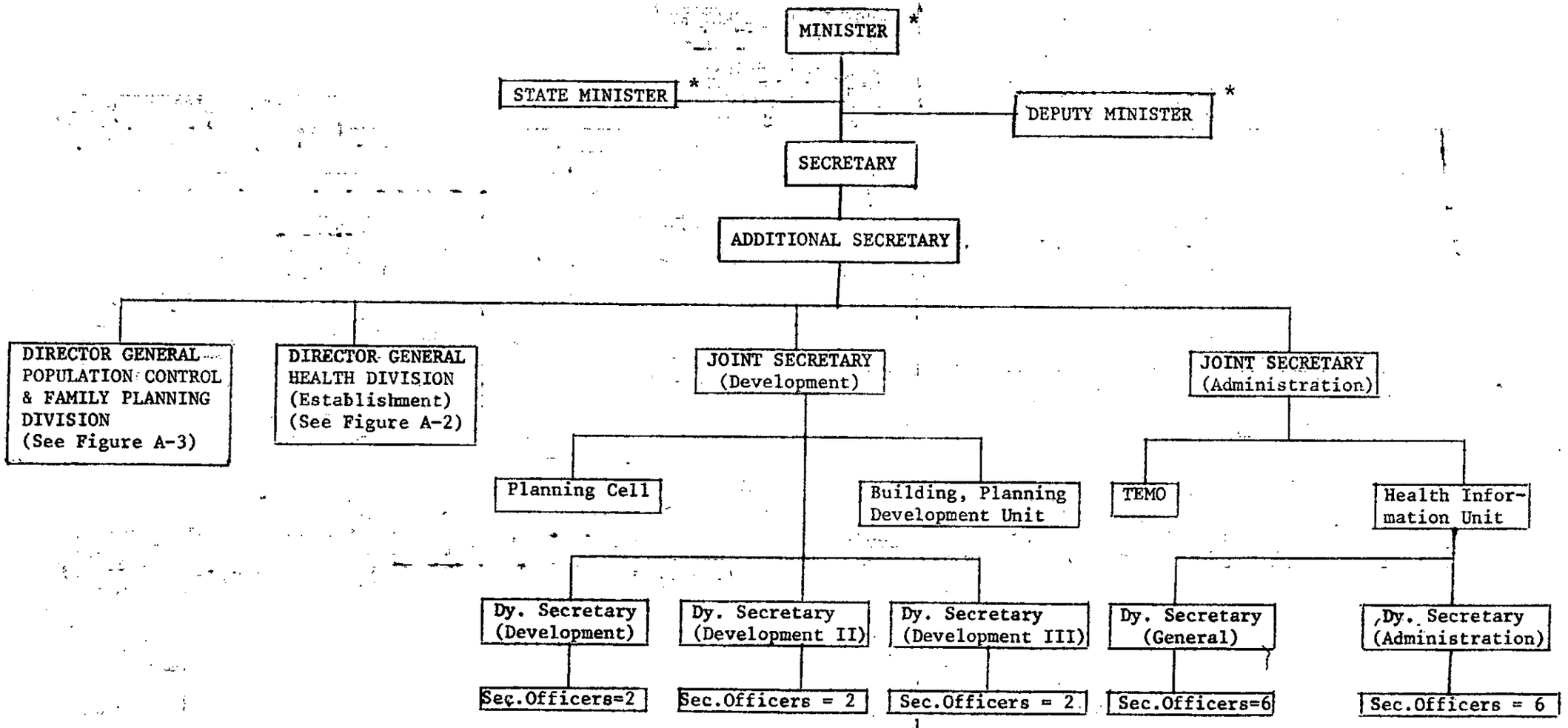


FIGURE A-1

ORGANOGRAM FOR MINISTRY OF HEALTH AND POPULATION CONTROL



* On March 24, these positions were merged into a single position, "Advisor, Health and Population Control," to the Chief Martial Law Administrator.

FIGURE A-2

INTEGRATED ORGANOGRAM OF HEALTH DIVISION AND DIRECTORATE

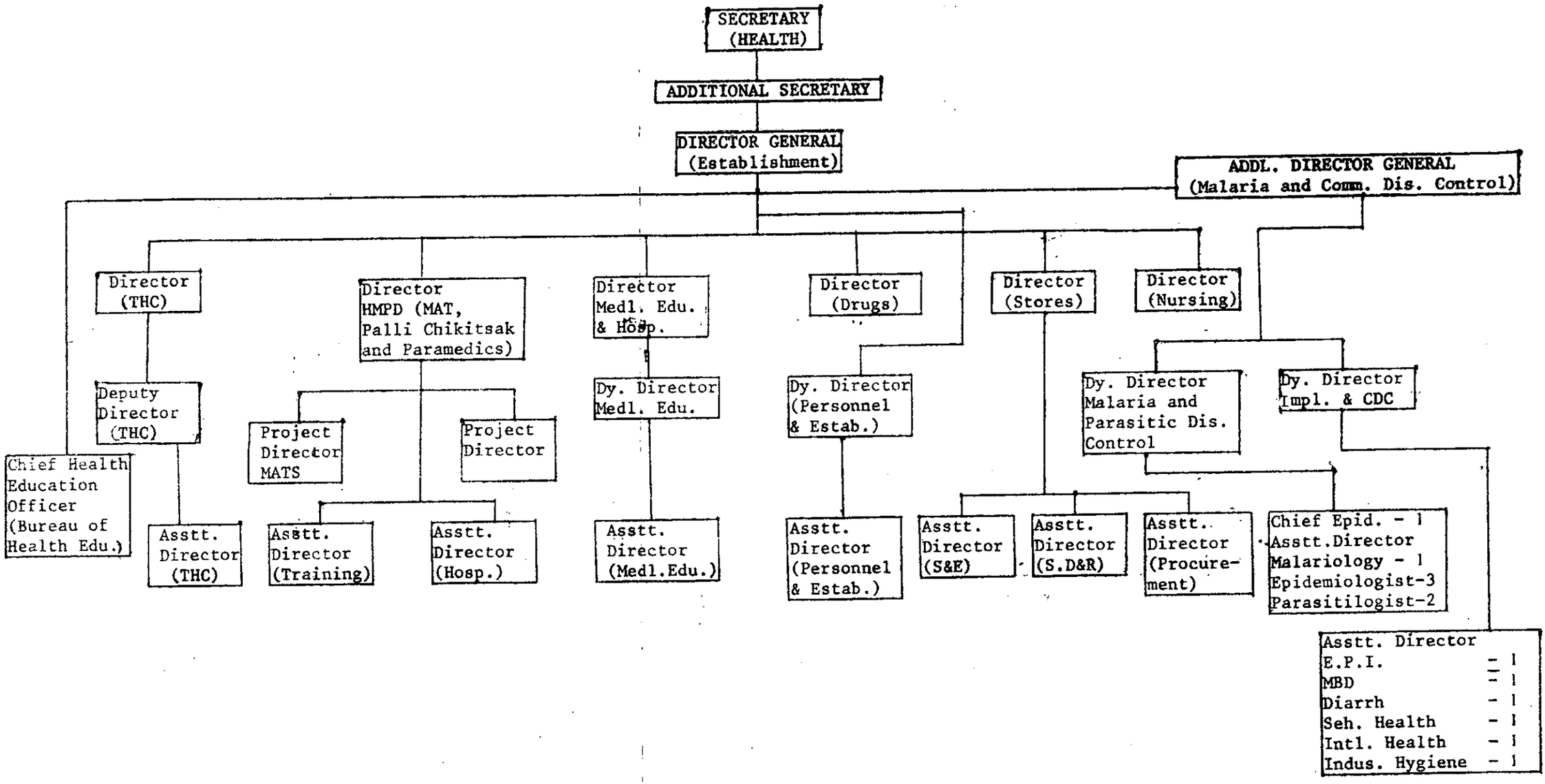


FIGURE A-5

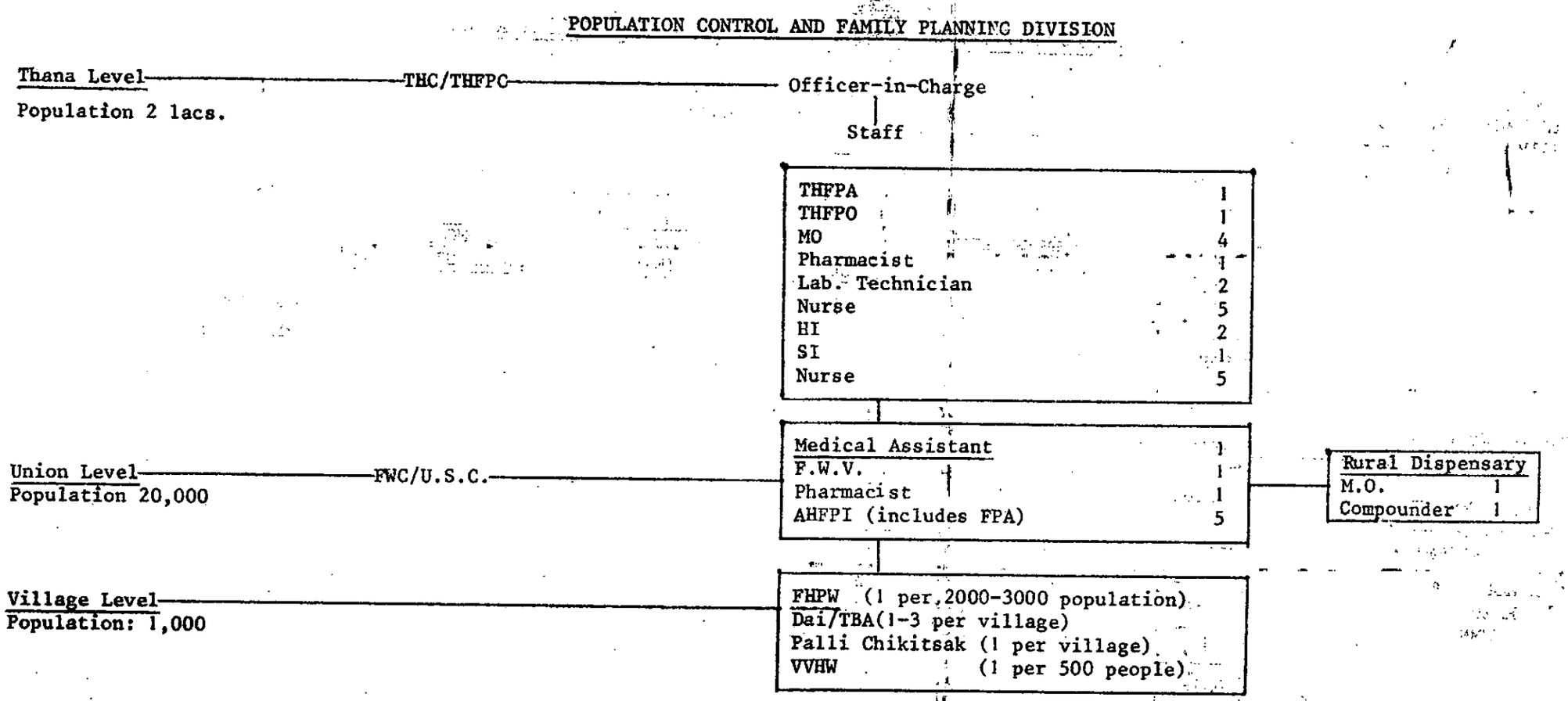

POPULATION CONTROL AND FAMILY PLANNING DIVISION
Thana Level
Population 2 lacs.
THC/THFPC
Officer-in-Charge
Staff
THFPA 1
THFPO 1
MO 4
Pharmacist 1
Lab. Technician 2
Nurse 5
HI 2
SI 1
Nurse 5
Union Level
Population 20,000
FWC/U.S.C.
Medical Assistant 1
F.W.V. 1
Pharmacist 1
AHFPI (includes FPA) 5
Rural Dispensary
M.O. 1
Compounder 1
Village Level
Population: 1,000
FHPW (1 per 2000-3000 population)
Dai/TBA(1-3 per village)
Palli Chikitsak (1 per village)
VVHW (1 per 500 people)

FIGURE A-6

POPULATION CONTROL AND FAMILY PLANNING DISTRICT ORGANIZATION

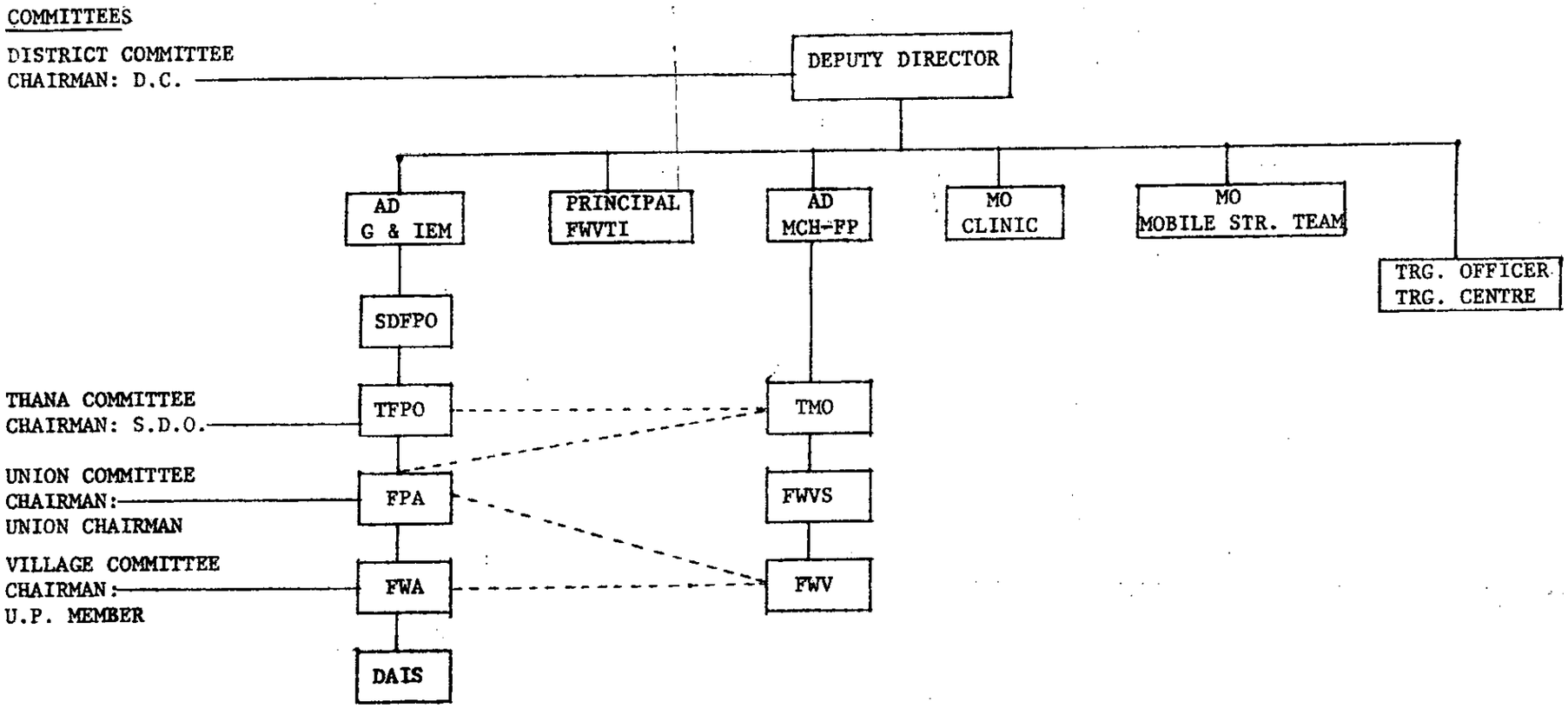


Table - 1 (contd.)

Level of Government	Staff Assigned to Each Level		Tasks to be Carried out at Each Level
4) Thana - THC (Thana Health Centre — Now called Thana Health and Family Planning Complex) Population: 20,000 (Approx.)	a) THFPA (Doctor)	- 1	a) Patient care - indoor & outdoor
	b) THFPO	- 1	b) Laboratory Investigation
	c) M.O.	- 4	c) Minor Operation and F.P. Operation
	d) F.W.V.	- 1	d) CDC
	e) Laboratory Technicians	- 2	e) Health and nutrition education
	f) Pharmacist	- 1	f) Training
	g) Store Keeper	- 1	g) MCH-FP
	h) Nurses	- 5	h) Disaster relief
	i) Health Inspectors	- 2	i) Administration
	j) Sanitary Inspector	- 1	j) Store and Supply
	k) Driver	- 1	k) Reporting and recording
	l) Assistant Statistician	- 1	l) Implementation of public health acts
	m) Other staff for kitchen etc.	-	m) Supervision of field work
			n) Co-ordination activities with extension workers under other Ministries.

TABLE - 1

ORGANOGRAM OF MINISTRY OF HEALTH AND POPULATION CONTROL
INTEGRATED INFRASTRUCTURE
FROM VILLAGE TO THANA LEVEL

Level of Government	Staff Assigned to Each Level	Task to be Carried out at Each Level
1) Village[a] Population: 1000 (Av.)	1) Palli Chikitsak 2) Dai/TBA 3) Gram Sarker/Village Voluntary Health Workers (VVHW) — 1 G.S. for each village with 2 VVHW	1) Patient care + ORS 2) Referral 3) Health and nutrition education 4) Environment 5) Help in EPI, MCH-FP 6) Keeping liaison between people and Government staff (Field Workers, FWC, THC, Dispensaries etc.)
2) Intermediate level[a] — between village and Family Welfare Centres (FWC/Union Sub-Centre or U.S.C.)	1) Government FWW/FWA (Non-designated as Health and Family Planning Workers) (HFPW) 1 per 2000-3000 people	1) EDC, DDC, EPI, Health & Nutrition education, referral, Malaria Control, Family Planning, MCH disaster relief, sanitation, recording and reporting.
	2) a) Assistant Health and Family Planning Inspector (AHFPI) 1 per 4 to 6 HFPW	1) Supervision of Field Work 2) Supply 3) Blood slide and report collection 4) Family Planning
	b) Family Planning Assistant (FPA)	
3) a) Union — FWC/U.S.C., AHFPI (i.e. AHI AND FPA) work from this level - Field Operation Centre Population: 20,000 (Approx.)	a) M.O./Medical Assistant b) FWV c) Pharmacist d) Other ancillary staff: (guards, cleaners, etc.)	1) Patient care 2) Family Planning 3) Training of field staff 4) MCH 5) Reporting and recording 6) Referral 7) Visit by M.O., THC for complicated patient management - twice weekly.
b) Dispensary (Rural)	1) M.O. 2) Compounder	1) Patient care

[a]"Village" is not formally a unit of government in the MOHPC system. Instead "Mouza" are areal units to which worker are assigned. Mouza comprise about the same population as villages but their boundaries may or may not correspond to village boundaries. "Intermediate level" assignments are Mouza-wise.

.../...

GLOSSARY

AHFPA:	Assistant Health and Family Planning Assistant
AHI:	Assistant Health Inspector
ACS:	Additional Civil Surgeon
ADMN:	Administration
AD:	Assistant Director
BPDU:	Building Planning Development Unit
BIO-MED:	Bio-Medical
CDC:	Communicable Disease Control
CS:	Civil Surgeon
CO-ORD:	Coordination
DDC:	Diarrhoea Disease Control
DCS:	Deputy Civil Surgeon
DS:	Deputy Secretary
DG:	Director General
DIR:	Director
DEMO:	Director, Demography, NIPORT
DD:	Deputy Director
DS/DIR:	Deputy Secretary/Director
DC:	Deputy Commissioner
DAIS:	Often dais are traditional birth attendants (TBA)
EPI:	Expanded Programme on Immunization
FWC:	Family Welfare Centre
FPA:	Family Planning Assistant
FWW:	Family Welfare Worker
FWV:	Family Welfare Visitor

FP:	Family Planning
FWVTI:	Family Welfare Visitors' Training Institute
GS:	Gram Sarker
HMPD:	Health Manpower Development
HFPW:	Health and Family Planning Worker
HI:	Health Inspector
HIU:	Health Information Unit
HQ:	Head Quarter
IMPL:	Implementation
INSP:	Inspection
IEM:	Information, Education and Motivation
JR. INST:	Junior Instructor
LOGIST:	Logistic
MO:	Medical Officer
MCH-FP:	Maternal Child Health and Family Planning
MCH:	Mother and Child Health
MAT:	Medical Assistants Training
M&PDC:	Malaria and Parasitic Disease Control
MBD:	Mycobacterial Disease
MIS:	Management Information System
MASS MEDIA:	Mass Media
MEDIA PROD:	Media Production
MED:	Media
NIPORT:	National Institute for Population Research and Training
ORS:	Oral Rehydration Salt

PROG. DEV: Programme Development

PLAN & MONIT: Planning and Monitoring

PCO:

PROT: Protocol

PCFP: Population Control and Family Planning

RO: Research Officer

RES: Research

SI: Sanitary Inspector

SO: Section Officer

SDFPO: Sub-Divisional Family Planning Officer

SDR: Supply Delivery and Repair

S&E: Stores and Equipment

TBA: Traditional Birth Attendant

THC: Thana Health Complex*

THFPA: Thana Health and Family Planning Administrator

THFPO: Thana Health and Family Planning Officer

THFPC: Thana Health and Family Planning Complex*

TEMO: Transport Equipment Maintenance Organization

TMO: Thana Medical Officer

USC: Union Sub-Centre

VVHW: Village Voluntary Health Worker

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*Both Centre and Complex are being used but the term Complex should be preferred. (The name was derived from RHC - Rural Health Centre. The centre became complex when F.PI was added as one of its function.

APPENDIX B

A Review of the Findings of Selected Special Pilot Projects in Bangladesh

This appendix presents the most important features of the following projects: The Matlab Community Health Services Project, the Companigonj Health Project, the Gonoshasthya Kendro Project, and the Bangladesh Rural Advancement Committee Project.

A. THE MATLAB COMMUNITY HEALTH SERVICES PROJECT (CHSP)

1. Introduction

The Community Health Services Project in Matlab Thana, is a research project of the International Centre for Diarrhoeal Disease Research Bangladesh (ICDDR,B). Although its purpose is to research the impact of health services on demographic processes, it has, as a central activity, the provision of village based family planning and maternal and child health (MCH) services.

The choice of Matlab as a site for field research was related to the observation that by the mid 1970's evidence had accumulated demonstrating the accuracy and completeness of Matlab vital data. Thus Matlab represented an unparalleled resource for testing the hypothesis that family planning service could affect fertility in the absence of concomitant social change: a large, traditional, non-contracepting population was available with a decade of accurately documented vital rates. Services could be administered in treatment areas, with comparison villages designated to ensure statistical rigor.

The first of these studies, known as the Contraceptive Distribution Project (CDP), was fielded to test the hypothesis that simply distributing one or two contraceptive methods in villages would increase usage and reduce fertility. A simple distribution system was devised wherein largely untrained and illiterate women were provided with packets of oral pills and instructed to visit women and provide supplies on demand.

The CDP was initially successful but problems developed in its second year owing to high discontinuation and low adoption rates. Researchers attributed this to the limitations of using untrained workers who were typically contracepting, and thus less concerned about the efficacy of family planning than the women who they were recruited to serve. Since follow-up was not emphasized and chronic ill health is widespread drop out rates were high.

The CDP was discontinued in 1977 and replaced with a substantially restructured programme known as the Family Planning Health Services Project (FPHSP). A new cadre of village workers were recruited and

Appendix B (Contd.)

trained to provide both MCH and family planning services. Strong emphasis was placed on conducting regular fortnightly visits to all women for the purpose of providing health and family planning care. A paramedical referral system was developed and the contraceptive cafeteria was expanded to include the IUD, tubectomy, and depo-medroxy-progesterone acetate.

The prevalence of contraceptive use increased sharply in the first six months of the project and eventually stabilized at a third of the eligible population where it remains to date. Fertility declined by about 25 percent in the first two years of the project impact period and is unlikely to decline further in the third year.

The third study, the Community Health Services Project (CHSP) was launched in July 1981 with the aim of testing the interaction of fertility control with mortality change. That study further partitions the family planning service area into a predominantly family planning treatment with rudimentary MCH services and an MCH-FP area with intensive family planning and MCH care. The aim is to test the hypothesis that MCH services affect fertility and conversely fertility control benefits health. The joint effect of MCH and FP is thus synergistic; health service and family planning efficacy are enhanced if both are implemented jointly. This third study is in the field phase. Thus, our replication work is addressed to transferring elements of the second project, the FPHSP, to the Government Service System.

The area served by the Matlab projects is a riverine deltaic area 30 miles to the south of Dacca with a population of 80,000 of whom 13,900 are married women of reproductive age (MWRA). The literacy rate among MWRA is low, and the economy is dominated by farming and fishing. As it is largely inaccessible by road, it is entirely rural despite its proximity to Dacca. The recent history of the area has been frought with calamities: the war of independence in 1971 and the famine of 1974-75 have dramatically affected both fertility and mortality. Contraceptive use in the area was negligible until 1977 when the FPHSP was launched . While research has conclusively demonstrated the impact of family planning, the further development of the project provides a site where the impact of rigorous family planning services can be monitored over a prolonged period of time. Moreover, Matlab provides Bangladesh with a site where comprehensive integrated MCH and FP services are implemented and functioning as a model demonstration site for integrated services. While it is unlikely that the administration of this service system will be replicated in its entirety by the Government, the project will continue to provide a site where service strategies can be tested and developed under optimal circumstances for emulation elsewhere.

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2. Operational Design of the CHSP

a) Operational definition of integration. The Matlab project was an integrated health service and family planning project in the sense that both family planning and health service activities are delivered by the same village based primary health care workers. As a research project it was executed under a scientific protocol intended to test the efficacy of certain types of activities and approaches. It is not integrated into the Government health service system, nor has it utilized the government workers at any level for administrative support. Thus it cannot be said that it is integrated into the local government service system or the political system of Bangladesh.

b) Delineation of functions: The dual leadership system in Matlab. The project field organization has been described in detail by Bhatia et al. (1980) and in a recent update by Phillips et al. (1981)

Figure B-1 shows the hierarchical structure of the projet as it was originally conceived. Overall authority was vested in a physician-investigator who planned and implemented the project.[1] Her counterpart, an administrator paramedic was delegated substantial responsibilities for managing implementation, training workers, and developing services. This continues to-date. The supervisor, in turn, has two counterparts (assistant supervisors) who supervise the actual work in the field. They assure that work is reported, that regular staff meetings are conducted, that supplies are flowing, and that other forms of administrative support for workers are in place and functioning. Actual day to day field supervision of field workers was vested in Senior Field Assistants (SFAs), each of whom supervise 20 workers serving approximately twenty thousand people. SFAs are the village organizational workers vested with the respnsibility of meeting with community leaders, resolving conflicts and as counselling husbands in need of motivational support.

Each SFA has a paramedical counterpart, known as lady family planning visitors (LFPVs), assigned to stationary health subcentres. LFPVs serve as referral paramedics providing backup support for 20 female village workers (FWWs). LFPVs insert IUDs, treat minor ailments, and assist in conducting tubectomies in Matlab.[2] LFPVs also conduct village visits to

[1] This has since changed so that two investigators (a demographer and a physician) administer the project.

[2] LFPVs also provide menstrual regulation (MR) services although nearly all cases are women who have experienced a contraceptive failure. MR is not promoted as a method, and is thus seldom performed. In 3 years only 250 MRs have been performed among women residing in the area.

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follow up special problem cases and serve as referral workers for clients in need of paramedical care. In Bangladesh, all qualified LFPVs are trained for 19 months, although in the project a physician provides continuous training and supervision.

As the primary health worker, the FWV's provide village based services and thus deliver the bulk of health and family planning services of the project.[1] Although the project was originally designed to incorporate comprehensive health services, only family planning services were fully implemented. This family planning programme included household depo-medroxy progesterone acetate (DMPA) injections, household distribution of pills, condoms and foam tablets, subcentre based IUD services, and Matlab based tubectomy services. Most importantly, 13,000[2] eligible women in the service area were visited fortnightly, whether contracepting or not, and consulted about their contraceptive needs. This continuous follow-up system proceeded without interruption for the duration of the FPHSP and continues to date.

The original plan of the project was to assign comprehensive health duties to the FWV's: general family planning services, comprehensive immunization services, birth delivery services, nutritional consultation, diarrhoeal diseases treatment; and, most importantly, the skills required to detect maternal and child illnesses and refer cases to Union subcentre paramedics or Matlab physicians.

The development of the project proceeded with general training of workers to perform these duties, but only three components were fully implemented: family planning services, tetanus immunization services, and diarrhoeal disease treatment[3].

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[1] In 1981, the FWVs designation was changed to Community Health Worker (CHW).

[2] In October, 1970 approximately 13,000 married women of reproductive age were eligible to accept contraception. By may 1981, this population had grown to over 14,000.

[3] In 1979, development of the MCH activities was terminated with the departure of the Principal Investigator from the project. A new project the Community Health Services Project (CHSP), was launched in June of 1981 to test the effects of implementing a more comprehensive village health service project. Although FWVs are being trained to deliver a wider range of health and immunization services under the CHSP, the basic work routine of FWV's continues as established in the FPHSP.

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Every fortnight each FWV is expected to complete a round of household visits, a workload requiring about 20 visits daily. After each fortnight round a meeting is held at the subcentre. Meetings are attended by the Supervisor, the Assistant Supervisors, the Senior Health Assistants and twenty FWVs of the subcentre. A simultaneous subcentre meeting is conducted by the Medical Officer for the LFPVs. Part of the meeting is devoted to clinical discussions with the FWVs. Topics concern the review of any deaths that may have occurred in the 20 or so subcentre villages, referral problems, technical issues, unusual side effects,etc. After clinical discussions the phycician conduct clinical sessions with the LFPV to attend to specidl problem patients to the subcentre on the meeting day.

The principal focus of meetings has shifted with time from training and technical problems to administrative matters. Meetings, chaired by the supervisor with his supervisors assisting focus on each worker report of use prevalence of contraception discussions of each dropout case, targets, and lapses in performance, supply problems, community relations, and other issues.

In mid-1979, the Principal Investigator-Physician-in-charge of the FPHSP left Bangladesh. Her medical functions were assigned to a physician some six months later and her scientific duties to a demographer nine months later. A year after her departure, a physician researcher joined the project as a co-investigator. In the course of this year family planning services continued without interruption, although by May of 1981 a new organizational structure had evolved and was incorporated into the CHSP.

This informal structure appears in Figure B-2 as it has evolved. Continuity of the project has been maintained by the supervisor who became de fecto manager of the study. The medical officer assigned to the project was not an administrator of it; she served, instead, in the technical capacity of a physician charged with maintaining medical standards, treating more serious complications, and training paramedical staff. Thus, a non-bureaucratic organizational design has emerged with nevertheless distinct technical and administrative lines of authority and frequent meetings at each hierarchical level to insure coordination of functions and regular progress of work.[1]

[1] Note that this informal non-bureaucratic structure for integration resembles, in certain respects, the formal structure of the health service system in China (see, Chen and Miller, 1975).

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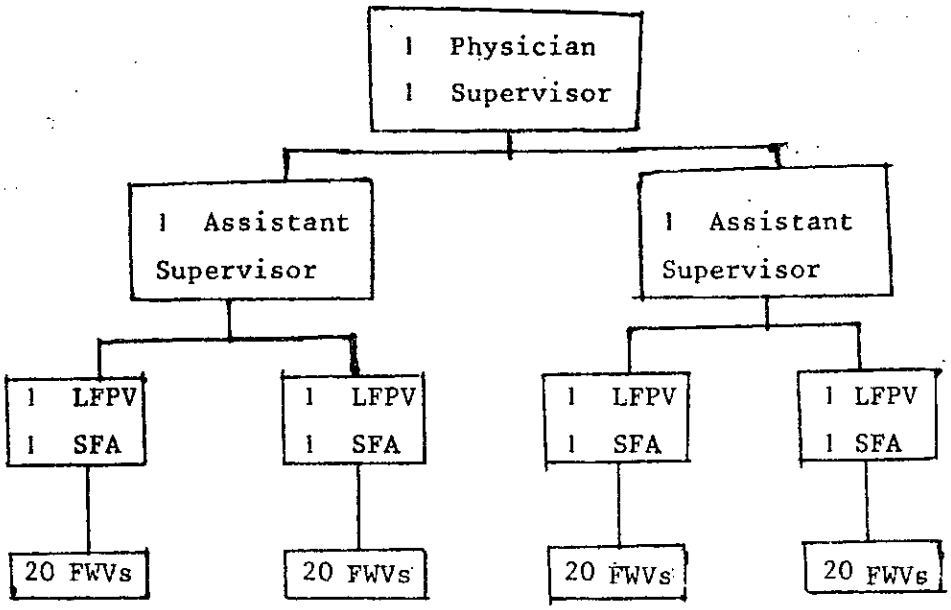
Figure B-1. Field Organization of the FPHSP



Source: Bhatia et al., 1980, p.204

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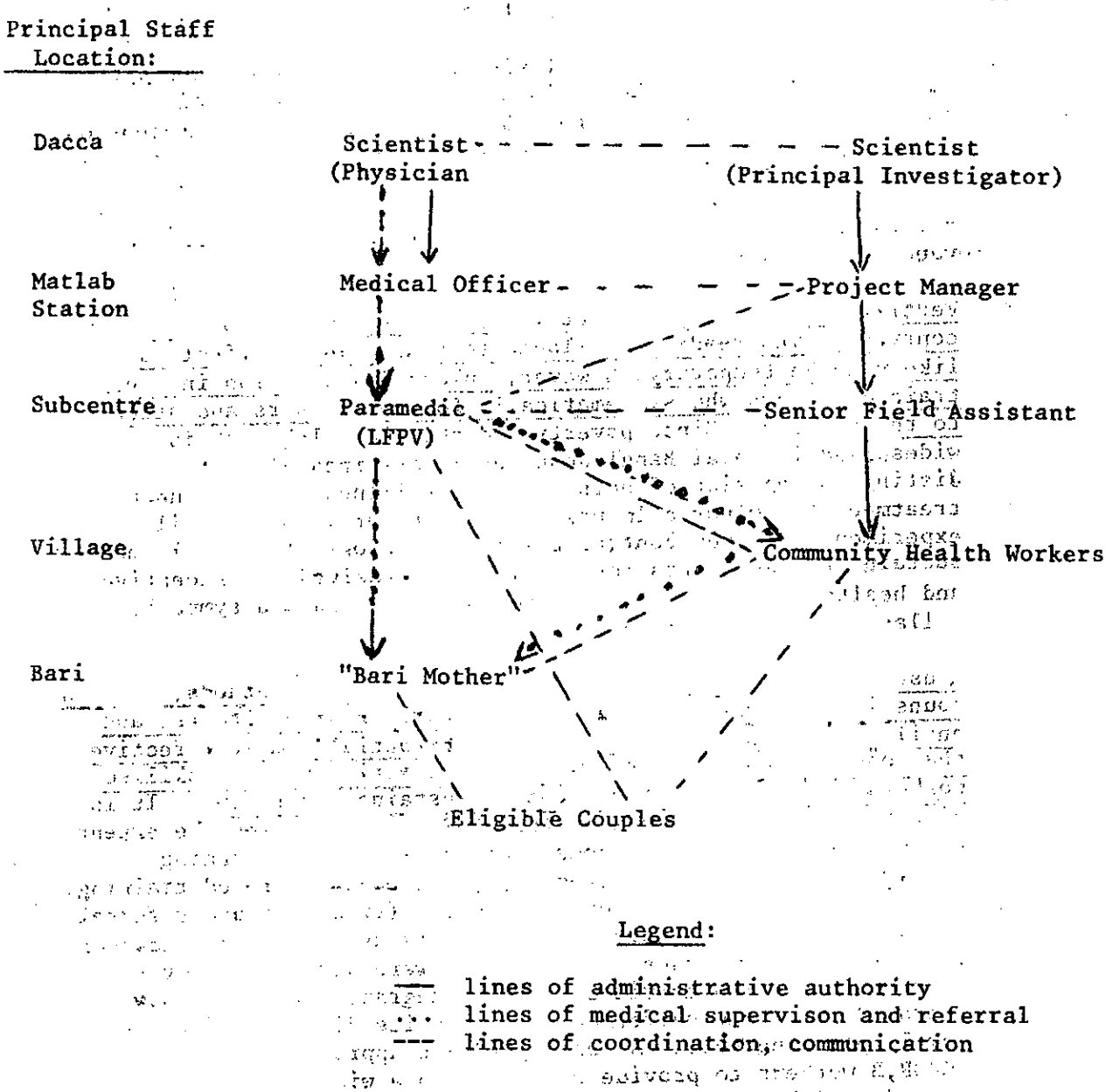
Figure B-2. The Informal Structure of the Matlab Community Health Services Project: 4 Dual Leadership Systems



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3. The Impact of Family Planning

Phillips et al. (1981) show that fertility declined by 27 percent in the first three years of project impact. Among women 35 and over fertility effects were approximately 50 percent. Against this background of pronounced impact the authors conclude:

"The findings appear to show that vigorous contraceptive services can initiate a fertility change in a poor rural traditional population. Thus it appears that an unmet demand for contraception exists in rural areas of Bangladesh which can be served by an intensive field programme.

Six policy implications emerge from this research with specific relevance to Bangladesh:

a) Fertility can be significantly reduced in Bangladesh by making contraceptives readily available to households. Effects are likely to be temporary, however, unless distribution involves trained workers who systematically follow-up users and attend to their needs. Since poverty and chronic ill-health is widespread in rural Bangladesh, users are incapable of distinguishing side effects from other illnesses and cannot afford treatment for minor ailments. Although rural couples will experiment with new contraceptives technology, they will not sustain its use unless both real and perceived contraceptive and health problems are attended to by trained and sympathetic village based paramedics.

b) A user oriented programme with a wide choice of methods, skilled counselling, rigorous follow-up and care of side effects, and ancillary health services will be substantially more effective than one based on one or two methods distributed by unskilled workers. Moreover, effects can be sustained over time. It is difficult, in an analysis of the FPHSP, to determine the extent to which the project's success relates to family planning strategies (home administered DMPA, follow-up improved training, (etc.) or to ancillary health services (treatment and referral of side effects, MCH care, etc.)). It is useful to note however that dramatic increases in prevalence were attained prior to development of MCH services. Thus integration seems to have improved programme performance through its direct effects of family planning care. A health service approach has enabled ICDDR,B workers to provide couples with a wider choice of methods and better contraceptive care than would be possible in a vertical family planning campaign.

The question of whether comprehensive MCH services aimed at reducing morbidity and mortality can indirectly affect fertility is a question to be addressed in future research.

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c) Seasonality of fertility is pronouced even in areas served by our project. This feature of fertility needs investigation and recognition in policy planning. Intensive campaigns, for example, will be much more effective if launched in the months from December to March than in April to December. Intensive education and promotional campaigns should coincide with seasons when conception rates are high. More research should be addressed to developing our understanding of natural fertility dynamics and its policy implications.

d) Trends in reproductive motives requires further research. We have no evidence that reproductive motives have been affected by our projects. We have observed that use prevalence in Matlab has remained constant at 34 percent for three years. This prevalence of use agrees well with the pre-project prevalence of women who said they were either using a method or would use one in future if contraceptive were provided. While this may suggest that we have met the demand for contraception that exists in Matlab and that by doing so our project has had substantial fertility effects, we must research this question formally to determine if motives change after reproductive behaviour has changed. We recognize that further increases in the impact of the FPHSP may require changes in reproductive motives. Whether reproductive motives can be influenced by health service interventions or other policies is thus a critical questions to be investigated in Matlab in the next three years.

e) More research is needed on the determinants of programme success. Several villages in Matlab have use prevalence rates exceeding 50 percent; others have rates of less than 10 percent The question of why we succeed in some villages but fail in others is an important research issue.

f) The success of the Matlab experiment presents a challenge to researchers and administrators to discover ways in which results can be translated into action. In particular, it must be recognized that the capability of the ICDDR,B to train, field, supervise, and support a comprehensive contraceptive service programme is the principal difference between the programme in the FPHSP service and comparison areas. This operational capability needs careful scrutiny, with a view towards implementation of its elements elsewhere in Bangladesh. Future, research should test implementation in the context of the Government service system, and focus on identifying and understanding the critical barriers to replicating the Matlab experience.

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The Matlab contraceptive service experiments demonstrate that rural Bangladesh holds considerable promise for achieving demographic development and that effective services can produce substantial fertility declines. The paucity of evidence of demographic effects of the national programme may thus relate more strongly to incomplete programme implementation that to an absence of motivation to limit or space births among rural Bangladesh couples (Phillips et al. 1981)."

4. The Mother and Child Health Component of the CHSP

a) Control of diarrhoeal diseases by use of ORS packets versus the use of local sugar and salt measured with a special spoon.

Expert 'bari mothers' were trained to prepare the solution and were supplied with ingredients as well as a used intravenous fluid bottle to measure water. Analysis to date shows:

- no difference between the two methods in reported use rates,
- slightly more variation in glucose and electrolyte concentration for the labon gur than the packet solutions but acceptable accuracy of solution preparation by both methods,
- no difference in the hospitalization rate of patients from the two areas, although overall both ORS areas provided slightly fewer hospital patients than a third area, where ORS was not provided. An earlier small ORS project had reported a 29 percent decrease in hospitalization associated with home distribution of ORS. The result has not been duplicated,
- with time, an increasingly disproportionate (to salt use) amount of sugar has been supplied. Most of this represents "leakage" but some had apparently been used to prepare sweeter, more palatable solutions.

b) Local preparation of ORS packets. Several years of experience have confirmed the fact that it is possible to have safe packets locally prepared by unschooled workers. The cost per unit is approximately Tk. 1.00. The research has shown that experience of decentralization at the union level is satisfactory, and the programme is being expanded and routinized.

c) Control of tetanus neonatorum by immunization of pregnant women with two injections of an aluminium-absorbed tetanus toxoid.[1]

[1] A useful preliminary analysis of this component was reported by Rahman et al. (1980).

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This strategy was implemented between June 1976 and September 1982. An analysis of the results of the first two years of the programme showed that about two-third of the eligible women during this period accepted full immunization (2 injections) and another 5 percent accepted partial immunization (1 injection). The data provide conclusive evidence of the impact of neonatal mortality from active immunization of pregnant women. Full immunization of pregnant women with two tetanus injections reduced neonatal mortality rates by about one half. However, a disturbing fact was the low acceptance rate (30 percent) among pregnant women. In September 1981, the strategy was changed and all women between 15 and 45 years of age as well as menstruating women of less than 15 years of age were immunized. To date more than 75 percent of all women have received 2 injections. The full impact of general immunization on tetanus neonatorum is not yet manifest.

In 1981-82, several additional MCH components will be added to this programme.

a) Comprehensive childhood immunization against measles, DPT, and possibly polio.

b) Training for CHW in antenatal care and delivery practices,

c) Treatment and referral of common childhood illnesses such as respiratory disease, scabies, etc.

d) Nutrition education and surveillance.

5. Summary

The main features of the Matlab CHSP can be summarized as follows:

1. Comprehensive family planning services which include village-based provision of oral pills, condoms, and depo-medroxy progesterone acetate (DMPA), together with regular household follow-up and motivational contact; conveniently available paramedical provision of copper T insertions at subcenters, and sterilization referral services supervised by physicians.

2. Comprehensive immunization services delivered in the village for major preventable causes of childhood mortality: tetanus, measles, and DPT as well as ubiquitous availability of oral rehydration packets from trained and knowledgeable depot holders.

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3. Service delivery by multipurpose village based female workers with supervisory support, frequent meetings, and technical support from paramedical and medical staff.

4. Decentralized and simple village based monitoring of activities to facilitate health surveillance, MCH care, and family planning service delivery as well as to permit supervisory support.

5. Regular staff meetings to provide supervisory support and continuous training.

6. Integrated dual leadership management system with provision for both technical and supervisory leadership.

B. THE SAVAR GONOSHASTHYA KENDRO (GK) PROJECT

1. Project Description

The Savar GK project was started in 1972. Its design, organization and results have been described in many publications. Although the GK staff do not agree with all of the following descriptions we quote at length from a recent review of the project (Coombs, 1980).

1.1 Transferability of lessons

The Savar Project has demonstrated an eminently sensible approach to making basic health care and family planning service available to the rural poor. Undoubtedly individuals with goodwill and some leadership ability can initiate similar private projects to serve limited numbers of people in other areas of Bangladesh or in other developing countries. Indeed, such non-governmental small-scale projects exist elsewhere in Bangladesh and abroad. While these projects serve their clientele well (compared to government services), they are not the solution to the health crisis of the rural people in the developing nations. Only a national and public effort, appropriately organized and receptive to the help of private and voluntary organizations, can cope with the magnitude of the problem.

To what extent might the approach of the Savar Project be found adoptable (or adaptable) by the national health and family planning programmes in Bangladesh? The essence of the Savar approach, it may be recalled, is the integration of preventive curative, and family planning services; use of paraprofessionals for certain essential tasks conventionally performed only by highly trained and paid professionals, sharing the management and the cost responsibility with the beneficiary population; and a recognition of the interaction

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of the health and family planning programme with other aspects of rural development. The answer to the preceding question will depend on three factors: (a) how the present problem of accessibility and coverage of the Savar Project is solved; (b) how the entrenched interest groups that would resist the adoption of a people-oriented health delivery system are tackled; and (c) how genuine and strong government commitment is to the spread of an effective people-oriented health delivery system.

As noted earlier, despite the innovative approaches and the achievements of the Savar Project, it has fallen short of its goal of making its services accessible to all the families in the project area. Unless the project succeeds in its present plan to extend the coverage and accessibility of its services, the case for accepting the project approach as a model for the national programme is considerably weakened, even though the present project performance in service delivery may be far better than the national programme. The raison d'etre for the project approach is making health care available to those who are deprived of it under the national programme approach.

Two groups whose interests are directly threatened by the successful spread of the project approach are, on the one hand, the quacks and practitioners of indigenous medicine and, on the other, the medical establishment of the country consisting of the professionally qualified physicians. Comprehensive and effective coverage of an area by the project may put the quacks and the indigenous healers out of business, unless they are brought into the fold of the project and retrained to serve as paraprofessionals. The opposition of this group can seriously undermine the spread and acceptance of the project in the villages; on the other hand, it can be turned into a powerful ally and a source of much needed skilled manpower willing to live and work in the village. The Savar project has apparently paid little attention to this question. It might well try using elements of indigenous ayurvedic and hakimi medicine in developing the therapy repertoire of the paramedics and the village-based auxilliaries.

If there is a reorganization of the national health service along the project line, the medical establishment stands to lose the privileges and advantages it enjoys from the present urban-based hospital-centered health service with the monopolization of functions as in a medieval trade guild. There is an elementary conflict between the effective spread of preventive health care and the personal interest of the physician in a society where curative medicine is a commercial commodity. Yet, policymaking, planning, and management of the

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health service are controlled almost entirely by members of the medical establishment. The professional training and background of the physicians, their notion of standard and quality of medical service borrowed from industrialized countries, and their private self-interest make them as a group (of course there are notable exceptions) very unlikely champions of any basic change in the health delivery system.

This, at least partially, explains the plan to establish separate government health facilities in Savar, instead of working out an arrangement with the Savar Project for adequate coverage of the population--when many other thanas in the country have no health facilities. It may explain the lack of positive response from the Ministry of Health to a proposal for trying out the Savar approach in collaboration with the government service in a neighbouring thana.

The weakness of the health delivery system is used as the argument for the separate administration of the family planning programme, so that the latter can be implemented with more efficiency and vigor than the health service. But can there be a strong family planning programme in a rural area where the basic health service is weak or non-existent? In any event, the separation has given rise to bureaucratic conflicts, rivalries, and lack of cooperation among the government personnel all along the hierarchy from the capital to the remote villages.

The resistance of the medical establishment to change and the problems of intragovernment conflicts can be overcome only if there is a strong and enduring commitment on the part of the government leaders and policymakers to an effective rural health care and family planning programme. The commitment to change probably exists in a general way and at a rhetorical level, if the speeches and pronouncements of government leaders are any indication. However, the actual operational implications of this commitment into a programme are by no means clear.

Hence the anomaly between the rhetoric and the government plans and programmes. It is likely that the government leaders and policymakers are not well served by their advisors who mostly represent the medical establishment. The remedy is to balance the conventional wisdom of the medical establishment with the advice of individuals (with both medical and non-medical background) who have demonstrated their independence of the establishment by giving it prominent roles in policy formulation and planning.

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1.2 A practical strategy

The question that still remains to be answered is what practical steps can be taken to apply or benefit from the lessons of the small-scale programmes in managing large-scale national programmes. A practical approach is the one Gonoshasthya Kendro has proposed (which has not so far elicited an endorsement by the government): a joint pilot project of the government and the voluntary organization in one or more specific locations to test and develop the modality of applying lessons of the samll-scale private programme to the national public programme.

Once the viability of an approach is demonstrated in small-scale programmes and some basic criteria of viability and feasibility (such as compatibility of objectives between the private programme and a national programme and the cost of structure) for a large-scale expansion appear likely to be met, a pilot phase can be initiated on the basis of close collaboration between the government and the voluntary organization in a limited area (preferably in a standard territorial unit of administration, such as a thana). The objective of such a venture would be two-fold: first, to test and develop the specific adaptations and modifications of the approach of the small programme inevitably needed for a national and public programme; and second, to work out the operational steps for moving beyond the pilot phase and to use the pilot phase for training and orientation of the government functionaries in anticipation of further expansion of the approach. The government obviously has to be enthusiastic about giving the pilot project and follow-up a fair trial and to reinforce policy with resource commitment. The voluntary organization, on its part, must be understanding of the problems of national programmes and large bureaucracies and be willing to be flexible without sacrificing the essence of its own approach.

For external assistance agencies, including those which have originally assisted the voluntary programmes, the joint pilot efforts offer the opportunity to support activities that are sufficiently well-defined, specific, and visible, yet which may have high multiplier effects and longlasting impact beyond the limited confines of a small voluntary organization project.

Another activity that would help make the small programmes more effective, as well as facilitate the transfer of lessons from these to national efforts, is the establishment of an arrangement with some commonality of focus so that the organizers of the small programmes may jointly exchange ideas and lessons, analyze critically issues and approaches, review methods and

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techniques applied in solving operational problems, develop procedures of evaluation and maintenance of service and feedback data, and prepare common training materials. In addition, the organizations, together with government personnel and independent experts, may consider the lessons and implications of their projects for national programmes and the best ways of transferring the lessons to large programmes. Since the small private programmes tend to operate on shoestring budgets and are not inclined to spare resources for anything not directly within the scope of their own projects, the interorganizational effort would probably be easier to bring about with some external assistance if not with external prodding.

Important lessons from the Savar Project on specific aspects of programme design and implementation relate to training field staff, encouraging integration, programme financing, and enhancing community participation.

1.2.1 Preparation of field level workers

Recruiting, training, and utilizing field level workers who are affordable and skillful, and able to establish rapport and empathy with their rural clientele is a perennial problem in all rural programmes involving health care and family planning. The Savar experience suggests a number of general principles for preparing and utilizing field level workers:

a) The high priority technical tasks to be performed by field workers have to be identified. These will include tasks that are really crucial to the attainment of the project goals and to meeting the needs of the people but are not now performed because of an insistence on professional standards or because professionally qualified people cannot be afforded by the nation and the community concerned. Diagnosis and treatment of selected common disease symptoms, clinical services connected with family planning including tubectomy and vasectomy, selected pathological tests are examples of high priority tasks that are not made available to rural residents because they are ordinarily performed by inaccessible urban physicians.

b) The technical tasks have to be defined and broken down into essential concrete steps so that they may be taught easily to people with limited educational background. The definition and specificity of the tasks also help the field workers differentiate between what they can do and what they should not attempt. (One important element in the training of the paramedical health worker is an ability to identify symptoms that he should not attempt to treat himself but should refer to a clinic or a physician).

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c) The effective training approach for the field level workers is supervised practice and apprenticeship as opposed to highly structured classroom lectures and printed texts. The practical experience is not only the means of acquiring essential technical skills but also of understanding social dynamics, interpersonnel relationship and the day-to-day logistics of a programme--all equally as important as technical skills for a worker on the front line. The theoretical background, of course, can be filled in as and when appropriate.

d) Preparation of the field worker is not a one-shot affair. The fields workers' efficiency and morale depend on the level of backstopping and support he has by way of technical guidance and supervision. He must be able to refer to the supervisor any problem he is not able to handle himself. In a sense, the field worker's training and preparation should never end.

e) An effective field worker, must be able to identify himself with the rural people, to understand the rural situation, and to commit himself enthusiastically to his mission. In the Savar Project people with a broad formal educational background but also possessing the right attitude and interests have been able to acquire the skills for various technical tasks usually performed by trained physicians. High formal educational qualification, to the extent that it alienates individuals from the rural environment and creates a superiority complex among them, may actually be a disqualification for rural field workers. On similar grounds, female workers, even when their educational attainments are deficient and some inconveniences are faced regarding their mobility, will generally prove to be more effective when a large proportion of the programme clientele is rural families, largely women, and children. In brief, the recruitment and screening procedures for field workers should give much greater weight to the candidate's understanding of and attitude toward rural life and rural people than to their educational qualifications.

f) The gap between the established professional standards and roles of the professional workers in the service agencies and the needs of the rural people is so wide that often the one tier of paraprofessional workers just below the professionals may not begin to bridge it. It may take an additional tier of village-based auxiliaries to bring the services to the villagers. In the Savar Project, for instance, it has been found to be too costly and too inefficient a use of human resources to aim at an adequate

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coverage of the population by the paramedics alone. The village-based health auxiliary, a member of the village community who is supervised and guided by the paramedic, is seen as an essential link in the chain that connects the project services and the people.

1.3 Approach to integration

It is clear that various health-related elements of rural development--in particular, preventive health care, including environmental sanitation to prevent communicable diseases, curative services, family planning, nutritional advice and nutritional care of specific groups such as infants and mothers-belong to one package. The intimate interdependence among these elements, the overlap and close links among the various activities, and the need for efficient use of human resources at both the management level and the field level make it economically sensible to put these elements within one organizational structure. Another advantage as observed in Savar is the opportunity the integrated approach offers to gain public confidence and credibility when it responds appropriately to specific urgent needs within the spectrum of health-related needs.

Beyond the package of health-related services, there is no standard prescription of what other elements of rural development should be brought under the fold of the same organization. They would depend on area needs, what other agencies and organizations are doing, and what management capacity and material and human resources can be mobilized to launch the new activities.

A voluntary organization is able to make its own decisions about which elements of an overall rural development effort should be brought together into the package of its programmes and services. On the other hand, a government agency with its own organizational hierarchy extending both upward and downward and functioning with rigidly defined jurisdictional limits does not have the same freedom. Integrated approach in government programmes is likely prospect, only if there is a great deal of genuine decentralization of decisionmaking and if representative local government bodies are strong enough to coordinate and guide the local units of the national government agencies.

1.4 Financing the rural health service. An important lesson of the Savar Project is that primary health care and family planning services are economically affordable even in the poor rural areas of Bangladesh. Accomplishment of this goal, however,

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would require a major redeployment of public resources going into health and related services from urban areas into rural areas. These would include such consideration as mobilizing resources from the beneficiary communities, sharing a part of the cost burden with the direct beneficiaries, and taking steps to make efficient use of all health and family planning manpower.

A theoretical model for rural health service operating costs based on the experience of the Savar Project and other similar projects in Bangladesh will show the magnitude of total operating costs for a comprehensive primary health service for a rural area with 100,000 people and an approach to meeting these costs.

Cost Model for Rural Health Service

(Per Capita Annual Recurring Costs)

		Taka
Medicine:		
Tk. 3.00 per prescription (average 3 prescription per year)		9.00
Manpower:		
Doctor -- Tk. 1,500 per month (1 doctor per 40,000 people)	0.45	
Paramedic -- Tk. 400 per month (1 per 4,000 people)	1.20	
Village auxiliary (part time) -- Tk. 50 per month (1 per 500 people)	1.20	
Travel for paramedics and doctors 20% of salaries	0.33	
Staff Training -- 20% of all salaries	0.57	
		3.75
	Total Taka	12.75
		(US$0.84)

(This cost figure does not include the cost of contraceptives and clinical family planning services such as tubectomy and vasectomy but includes the costs for family planning staff assuming that the same staff provides both health care and family planning services. The staff training cost does not include the costs for formal professional training of a physician in the medical college).

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For an administrative unit of 100,000 population the annual recurring costs for the health service that offers complete primary health care and family planning services will be approximately Tk. 1,275,000. An insurance scheme of the Savar type (premium of Tk. 2.00 per household per month) would bring a revenue of Tk. 480,000 per year from about 20,000 households in the area. A small service charge of Tk. 1.00 per prescription for all clients will raise another Tk. 300,000 per year (assuming an average of three prescriptions per head in a year). The total from the insurance fee and the service charge will therefore amount to Tk. 780,000. It is unlikely that all the households will enroll in the insurance scheme. However, as noted before, roughly the same amount can be raised by imposing a reasonable fee for consultation and medicine on non-insured clients.

The balance of about Tk. 500,000 can be met by diverting to the rural health service about 70 percent of the present noncapital expenditure of the government (i.e. Tk. 5.00 out of a total of Tk. 7.00 per capita) on health and family planning. The government funds, of course, have to be used in a system that deploys the manpower along the line indicated in the model.

The above theoretical model only indicates the rough magnitude of costs and resources for a rural health service and an approach to financing a primary health care system. Even relatively large margins of error in the estimate do not really affect the basic argument. The per capita cost, figure does not include the costs of the whole administrative superstructure nor of the facilities and services above the thana which are needed to support the thana level operation. The assumption is that with a new order of priority in health care, about 30 percent or some such proportion, of the national recurring budget should be sufficient to maintain the superstructure.

It is obviously impractical to suggest that the government health and family planning funds should be immediately reallocated from the town-based services and institutions to the rural areas and that a radical reorganization of the health and family planning services should be instituted at once. But it is very practical to have a clear view of the direction in which the national programmes should move and to take determined first steps in that direction as soon as possible.

While closing down existing institutions and services by cutting their budgets may be painful and disruptive, it should be easier to shift increasingly larger proportions of a growing government budget in each successive year to a

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recognized rural health care system. The government health and family planning budgets have grown substantially over the past five years and they are likely to continue to grow in future years. An urgent first step toward a new beginning would be critically to examine, reformulate, or halt and slow down as appropriate the new development projects in the area of health and family planning that may have already been approved but as yet are unimplemented or on the drawing board. To the extent that the present development plans fail to fit a new order of priority and a new strategy for national health care and family planning, they tie the hands of the government and upset the recurring budgets for many years in the future.

Since the cost of medicine may constitute as much as 70 percent of the operating cost of the rural health service, any measure that can be taken to reduce drug costs would make a major difference in the national health service costs. Production in the country of common drugs using a maximum amount of local ingredients, regulating the proliferation of brands of the same generic drugs, pricing and marketing policies of the multinational drug manufactures and similar other questions affecting the price and supply of common drugs merit close scrutiny by the government.

1.5 Enhancing community participation

The empty rhetoric expended on the subject of community participation can be translated into meaningful reality if specific forms of participation are seen as having a central role in achieving the goals of development project. Equally important is development of goals that are received in a wider perspective of enhancing human capacities, human values, and the quality of human community life.

If the Savar Project in its initial phase had looked beyond meeting specific and highly visible needs in the health and family planning field and had paid more attention to working out a participatory process, probably some of the steps only now being explored could have been taken much earlier. The participatory process may sometimes impose a price in short term efficiency and speed, but in the long run it will pay off.

There is almost always a problem of the community entity. Who constitute the community and who represent it? How are the factionalism and interest conflicts in the village resolved and how are the poor, the weak, and the inarticulate, made partners in the collective community enterprise?

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This situation calls for a balance between central direction on the one hand and the exercise of the community's responsibility and its authority on the other. The central management of a project has to intervence in behalf of the weak and the voiceless when community decisions threaten vital interests of the under-previleged groups. This intervention, however, should not be arbitrary, but in conformity with the overall goals and policies of the project, formulated and clarified with the participation of the beneficiary population."

2. Summary

The principal elements of the GK project, in summary,are:

a) Integrated preventive, curative, and family planning delivered in the village with integration also encompassing economic programmes,

b) Training of indigenous health practitioners,

c) Efforts to extend services to the MOHPC system in a neighbouring thana,

d) Local village based financing. Low cost services,

e) Simple technology, ubiquitously disseminated, for primary health care and family planning,

f) Continuous worker training and simple concrete instructions in implementation,

g) Stress on empathy with villagers, and community participation,

h) Decentralized services with close supervision of village workers.

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C. THE COMPANIGONJ HEALTH PROJECT

The Companigonj Project, a joint venture between Christian Commission for Development in Bangladesh (CCDB) and the Government of Bangladesh, was originally intended to be a demostration project. In order to learn about the success and/or failures, all inputs were documented.

The project and its goals and results have been described, the latter document being the results of a three day workshop. The main recommendations of this workshop were as follows:

"1. Utilization of Health Services:

a) To increase utilization and particularly utilization by the target groups (women and small children), greater community involvement in the project is needed.

b) The dai programme should be strengthened and used to increase the amount of MCH service provided.

c) The field programme should be strengthened by better supervision, better use of the union level meetings, changing coverage areas so that FWV (Family Welfare Visitor) and FWA (Family Welfare Assistant) areas coincide and finally, by increasing the MCH component--particularly nutrition advice, identification of nutritionally at risk children, tetanus immunization of women ages 15-45 and support for the dai's antenatal and postnatal care.

d) Since village practitioners provide most of the acute care, they must be brought into the programme. Training programmes should be introduced to ensure that they understand the importance of early use of penicillin for respiratory infections and oral fluid therapy for diarrhoea. Referral systems should be developed for obstetrical and other complicated cases. A roster of local practitioners who have been trained should be maintained.

e) Subcenters should function in a way which will make them more accessible. Experimentation with different approaches will be needed. Satellite subcentres at ward level could meet weekly and FWAs could be trained to carry out more clinical activities both in the clinics and at the periphery. Clinics held at night when women can move about more easily should be tried. FWVs should live in the union in which they work--housing will have to be constructed for this.

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f) In order for this experimentation to be carried out, it will be necessary for the government to delegate to the project more authority for local decision and some insulation from sudden changes in the government programme.

2. Utilization of Family Planning Services:

a) Short term

- organization of frequent meetings of the females around their households by the female workers,
- promotion of voluntary depot holders of family planning inputs (physical) for specified groups of couples (10-15),
- more dissemination of information on Menstrual Regulation (MR) facilities.

b) Medium term. Gradual improvement of the service delivery at grassroot level with more intensive efforts (e.g. more frequent operations at existing subcenters).

Strengthening of MCH activities.

Efforts to encourage delayed marriage, and social security in old age, for example, implementation of rural group insurances scheme may be considered.

c) Long term. Faster pace of improvement of the economy, and organization and delivery of social services.

Note:

Replicability (of Companigonj experiment/experience)

- payment of 20 percent additional project allowance to government workers at Companigonj may not appear to be replicable,
- community participation is replicable,
- integration of health and family planning services is replicable.

Innovations needed

- more rural orientation for motivation through project support communication (PSC),
- better use of mass communication media, such as film shows, slide and sound presentations, etc.

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3. Utilization of Traditional Midwives:

Based on a review of the Companigonj experience on utilization of traditional midwives in Sirajpur Union, the workshop makes the following recommendations:

a) Recognizing that there are different delivery practices in Bangladesh, a national programme for TBA training should be adapted to local practices. A survey may be done in each area to determine percentages of deliveries being conducted by TBAs, relatives, self-educated or trained health workers.

b) Based on the survey in each area, decisions should be made about the appropriate patterns for implementation of the following options:

- training of practising TBAs,
- use of simple delivery kits by family members,
- selection of village level workers who are trained specifically in pregnancy care along with other aspects of MCH-FP care.

These decisions should be made in collaboration with local leaders and groups.

c) In order to carry out an effective MCH-FP Programme, community participation is essential. In this process, the mobilization, selection, and training of TBAs may utilize existing groups such as mother's clubs, men's and women's cooperatives, swanirbhar committees, village health committees. Where there are no existing community groups, natural and formal leaders may be identified and locally acceptable patterns of community involvement developed.

d) In selection of TBAs, the highest priority should be given to dais having maximum delivery experience. This may be ascertained during the selection interview by asking specific questions to test her knowledge of management of normal and complicated deliveries.

A second method is to interview bari mothers to identify the established TBAs of the area. The selection committee should include FWV, TMO/THA, TFPO.

e) Training of the TBAs will be done by the FWV of the union who has been previously trained. The TBA manual presently being used may be modified in the light of experience gained and simple illustrated materials should be developed for the TBAs themselves.

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f) The TBA training process must include surveillance of pregnancy to identify high risk conditions, aseptic conduct of delivery, lactation, infant and child care including nutrition, oral rehydration and family planning.

g) The FWV has a responsibility for continued support and supervision of the TBA trained in her union. She is responsible for collecting monthly reports from the TBAs concerning their activities. These activities may be suitably strengthened by fortnightly/monthly meetings and by the FWV's visit to the ward.

h) The Companigonj experience has indicated that use of Food for work wheat as remuneration for expanded TBA activities in antenatal, natal, postnatal child care as well as family planning was effective in reduction of perinatal mortality. It is recommended that other methods of remuneration may be tested in selected areas outside Companigonj.

4. Cost Component:

a) Government should increase amounts to be allocated for medicines to approximately Tk. 300,000 - Tk. 400,000 per year to support active curative services.

b) Equipments and vehicle maintenance must be given careful consideration, attention and funding.

c) The Workshop felt that doctor's salaries and private practice by government doctors are important issues requires the government's urgent consideration.

d) A service evaluation component of the health and family planning services, possible at district or higher level should be established.

e) High capital costs for building construction should be avoided. Modest but appropriate facilities should be planned for union level, possibly with community input.

f) Overall costs of services comparable to those at Companigonj will amount to about Tk. 15.00 per capita/year. The Workshop recommends that the government consider allocation of about Tk. 15.00 per capita/year for thana health and family planning services.

g) A more complete cost analysis of the Companigonj Health Project is recommended.

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5. Community Participation:

a) Organizational. The organizational framework to promote community participation should be based on principles which ensure true representation of the intended beneficiaries and a level of disaggregation/decentralization that makes accountability feasible. Specifically, the Workshop, therefore, recommends:

- The committees at various levels such as thana and union levels should have more women and landless group representatives, particularly from amongst those with organizational competence and experience. To develop this capacity among women and other under-priviledged groups, efforts should be made to organize Mother's Clubs and similar organization.

- These committees should be chaired by residents and preferably people's representatives and ensure a minimal frequency of meetings, at least once every two months.

- There should be a sub-union level committee along the line of the union level of the committee and this should be within the framework of a sub-union level organization where it exists, such as a Swanirbhar Committee or a Gram Sarkar.

- In addition to formal structures there should be informal arrangements for ensuring interaction between the community and the project personnel based on sharing of information regarding services, decisions about prioritisation of existing services or inclusion of new ones and evaluation of programme impact.

b) Cost sharing. The Workshop strongly recommends gradual increase in sharing the burden of cost of project by the community. It specifically recommends:

- Contribution of resource to the project by the local community in such forms as land, water bodies, orchards, etc., which generate regular income.

- Consideration of health tax to be imposed on people with resources as determined by the local community who should also be responsible for implementing it. Such taxes may be collected at the time of crop harvest or at points of earning income and profits or receipt of remittances from abroad which is a characteristic of the Companigonj region.

- Consideration of participation in sharing of costs by even the relatively poor in the form of "Musti Chal" or a low-cost health insurance scheme.

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- Collection of fixed quota of contribution from hats, bazars, ghats or similar other revenue generating institutions. It was recognized that the success of local participation of cost sharing depended very much on the ability of concerned people in the community to combine moral persuasion and group pressure on the entire section of the community, particularly the rich people.

c) Monitoring and evaluation. The Workshop felt that schemes like the Companigonj Health Project can best ensure participation of the local community if it involved them from the beginning of the project in designing and developing various activities. The Workshop recommends that such a process should logically start with a survey of the health problem and people's responses, both formal and informal, with full participation of the local people and the institution of a mechanism that ensure their continued participation in the monitoring and evaluation of the project.

6. Integration of Health and Family Planning:

a) Some urgent issues need to be resolved through firm administrative decision and unequivocal policy statements emphasizing national commitment to integration.

1. The long term benefits to be achieved through integration are more important than the short term concerns that frequently have a disproportionate influence on policy. Persons against integration invariably come from family planning workers concerned about their jobs but when the necessary transitions have been made they will become comfortable in their multipurpose roles.

2. Experience in the Companigonj and other projects suggests that the following short term problems will include the adjustment required during the transition period.

- the first need in integrated services is clear definition of local problems rather than pretending that everything will be done for everybody. Priorities should be set to provide a basis for the careful selection of interventions. Flexibility for local adaptation according to locally determined priorities must be permitted rather than detailed directives requiring topdown implementation,

- a systematic task analysis should lead to clear definition of the categories and responsibilities of each grade of worker,

- since the patterns of coverage now assigned to family planning workers are now different from those of health worker the geographical areas of responsibility for each category of worker would be rationalized and made congruent with other categories of workers,

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- salary differentials between categories of workers should be eliminated by careful administrative review,

- appropriate training and retraining will be needed emphasizing especially an integrated package of MCH, family planning and nutrition.

3. Phasing of integration according to administrative levels of national services.

- integration at the top already exists in the person of the Minister of Health and Population Control,

- the Companigonj experience demonstrates that integration only at Thana level will not work. Too many conflicting pressures are brought to bear on thana staff,

- the minimum administrative unit for integration should be the district,

- the eventual goal must be to have total integration at all administrative levels as rapidly as possible,

- because of concerns about the future of motivational activities two options have been identified for the IEM (Information, Education and Motivation) part of present family planning services. These involve mainly the male family planning workers. To maintain good working relations with technical services one option is to make these activities part of the health services, An alternative is to maintain contact with the publicity channels by making these persons part of the Ministry of Information and Broadcasting,

b) Phasing for national services through a pilot project approach. Since it will be difficult to implement national integration immediately, the Workshop recommends that phasing should be based on expansion through pilot projects. The basic administrative unit for expansion should be districts carefully chosen to represent various parts of the country. The pilot project could begin in two or three districts and then progressively expand to national coverage.

This process will make it possible to:

Work out the supervisory, supportive and management processes for integration, develop a focus on priority problems; and components of services in relation to a job analysis for each category of workers.

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It will also facilitate a deliberate use of the experience of the Companigonj and other projects to make use of their findings in national services.

c) Means for maintaining an appropriate emphasis on family planning as integration proceeds. A major hazard in integration is that benefits previously achieved in family planning may be dissipated. Health personnel are not spontaneously interested in family planning and there is danger that health services will crowd out attention to family planning just as curative work tends to crowd out preventive activities.

1) The Workshop recommends that there be a specialized organizational structure within health services to provide an integrated package of MCH, family planning and nutrition to ensure that adequate recognition is given to this area.

2) Adaptation will be needed of current practices for providing incentives for family planning work which can maintain priority attention. The incentives to doctors for surgical and contraceptive procedures should be balanced with what they might make in private practice.

3) Integration is not an automatic panacea for all problems. Since the objective now is to start a long term consistent but difficult process of reaching all the people with balanced services the evolution of services must be carefully planned with continuing research conducted in specially designated areas by teams with particular capability such as the group who have done so well in the Companigonj Project. This kind of continuing services and data gathering will ensure that family planning receives appropriate emphasis."

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D. THE BANGLADESH RURAL ADVANCEMENT COMMITTEE (BRAC)

The background and results of the BRAC projects have been documented by Coombs (1980) among others. Unlike other projects reviewed in this proposal, the BRAC project is concerned with the broader issue of rural development with health and family planning integrated into this broad perspective. The approach is to help the disadvantaged to help themselves through collective efforts. This broad view has been described by Coombs (1980) as follows:

"1. The Integrated Development Approach:

BRAC recognized the need and significance of an integrated approach and in pursuing this approach put different rural development components together in the Sulla Project.[1] However, the resources and manpower committed to the project did not permit a sufficient participation of the people in the project area needing the various services offered by the project. The programme management also did not provide for the mutual linkages and reinforcement of the different programme activities essential for an integrated approach. The result was a series of parallel sectoral activities with only incidental overlap to the beneficiaries.

The programme approach taken was an identification of certain general needs of the population and an attempt to meet them with a number of sectoral activities devised by the prevalent conventional wisdom about what constituted a rural development programme. The needs that were identified (such as basic health care, agricultural development, functional education, cooperatives and so on) were genuine enough in a general sense, and a certain number of the project population undoubtedly benefited from the services provided; but the programme after three years of operation of its developmental phase has not brought about a major improvement in the quality of life of a significant proportion of the population -- least

[1] The Sulla Project is a special project started in the post liberation period in Sylhet which is intended to foster rural development through loans, cooperatives, and income generation projects.

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of all, in the life of the poorest groups. Evidently the project activities needed to be tailored specifically to the needs of specific groups (especially if the purpose was to help the economically weaker and the disadvantaged sections of the community) but also made flexible enough in different combinations of components for a variety of groups.

Apparently the assumption behind the sectoral activities undertaken was that the individual participant, in assimilating their separate benefits would somehow effect an integration of them in terms of his own plan for managing his resources and improving his socioeconomic situation. This assumption was probably valid for those who were economically and socially in a relatively advantageous position. The sectoral approach (in contrast to the "people approach") inevitably gravitated towards a norm of operational goals and patterns that benefited the easily reachable and the relatively better-off at the cost of the disadvantaged.

In operational terms, a shift of emphasis from separate sectoral activities to an integrated "people" approach means that different relatively homogenous socioeconomic groups have to be identified and organizational structures developed accordingly. This is the logical approach when the goal is to held the disadvantaged groups rather than to offer a series of services for the benefit of the general public. This is the approach towards which BRAC appears to have moved for the third phase of the Sulla Project and for other new projects.

Integrated rural development (in contrast to the parallel functioning of sectoral activities in the same geographical location or the coordination of different sectoral activities through various administrative devices) requires as focus on the participant population -- their circumstance, their own perception of their critical needs, and their preference and values. The implication of this premise for national rural development efforts is that, instead of attempting to reach the rural population with vertical sectoral programmes, a means must be found to form local organizations of homogeneous interest groups and make them serve as the instrument for integrating and managing the sectoral activities of the beneficiary population. A strong local government structure, adequately representative of the total rural population, can become a mechanism for coordination among the network of local organizations and institutions and for mediation between the local groups and the highest tiers of government agencies at the regional and national levels.

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Since health care and family planning have been implemented in BRAC virtually as one sub-programme, a question of particular interest is how this integration has affected the performance of both health care and family planning activities. One may also ask what the consequences might be for health care and family planning performance under a more effective overall integration of the different components of BRAC.

A definitive and totally unequivocal conclusion in this regard cannot be drawn from the BRAC experience. BRAC obtained certain results by organizing the health care and family services in a particular way, important features of which were the following: (a) the medical and clinical backup of the family planning services was provided by the health care staff and facilities; (b) at the field level, special family planning workers were used for contact with clients and distribution of contraceptives but they were under the direct and close supervision of the paramedics who also played an important motivational role regarding family planning; and (c) the local people perceived the two activities as related -- BRAC's medical services being the most well-known and widespread of all BRAC activities -- and knew that for any medical problem arising from the acceptance of family planning, they could get help from BRAC medical service.

One does not know what the results would be if a family planning programme were not backed by the health service, not identified with a multifaceted rural development programme, and only had community-based field agents with supervision and backstopping provided by the family planning organization itself. The government family planning programme is run along this line (though, in principle, maternity and child health care is regarded as a part of the family planning programme), and its performance so far compares less than favorably with the BRAC programme. But because of its many management and logistical problems, the government programme, at least at the present time, is not a good example of a "single-purpose" family planning programme and does not provide a good basis for comparison.

While a "proof" cannot be offered on the basis of BRAC experience in favor of or against a combined health and family planning programme or a more integrated approach, a number of pertinent factors must be taken into account in considering the issue. First, given the evidence regarding prenatal deaths of women and high postnatal infant and children's mortality, a high rate of births per childbearing age women, and a large family size are themselves serious health problems as far as the mothers and children are concerned. Second, it

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imposes an unaffordable and unnecessary economic burden on poor countries to duplicate the technical and professional support manpower and support facilities for both family planning and primary health care. Third, the problem of establishing credibility and inspiring confidence about the family planning programme is more easily overcome when it is offered in conjunction with activities that meet the perceived needs about health problems.

The basic question, however, is not one of the technical efficiency of the single-purpose approach (on which ground alone the case for it is argued), but of values regarding all development efforts -- whether the concern is about meeting certain sectoral quantitative targets or improving the welfare of people. The question needs to be posed in this stark form to get at the heart of the integration issue, and it needs to be underscored that reduction of population growth and gaining acceptance of the norm of a small family size are not ends in themselves. (It is, by no means, certain that even on technical efficiency grounds the single-purpose approach is superior.)

In a similar vein, it may be argued that health and family planning efforts will be better accepted, will have a more sustained impact, and will achieve goals in line with the preference and the value system of the beneficiary population if implementation of these efforts is made a component of the collective and organized self-help activities that improve the socioeconomic situation of homogeneous rural interest groups. In other words, the health care and family planning programme is likely to be more effective if the rural communities themselves can take charge of planning and managing the delivery end of the services, in the context of tackling other survival and development problems, with appropriate technical assistance and resources support from the higher tiers of government and other external sources.

2. Community Participation:

Despite the intentions and efforts behind the functional education programme and the formation of cooperatives, community participation was not a strong feature of the early phase of BRAC. The sectoral approach it adopted and the heavy reliance on its own relatively large field organization for management and implementation of the sectoral activities undermined the principles of community participation.

Community participation has many dimensions which, in the context of a programme to help the disadvantaged sections of the rural community might well include the following: (a) organizing services in the community on a community basis and making the services widely and easily accessible; (b) contribution by the community to the operation and maintenance of the services; (c) participation of the community in planning and management of the services within the community;

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Finally, the efforts to promote participation can succeed only with unambigious commitment on the part of the development agency, whether a voluntary organization or a government department, to serve the interests of the disadvantaged groups -- the landless farm workers, women from poor families, young people, small farmers, and rural artisans struggling to eke out a living from traditional occupations.

3. Education:

BRAC's programme approach is distinguished by the systematic use of varied educational approaches in support of its objectives. Three major categories of educational activities in BRAC are: (a) programmes for the beneficiary population with the aim of raising their levels of awareness and understanding and making them better participants in the development activities, such as functional education and village workshops; (b) devices that develop the special skills and competence of specialized programme workers, such as paramedics, village health auxiliaries, family planning workers, cooperative accountants, instructors for poultry raising, functional education teachers, and so on; and (c) training for general BRAC field workers and potential youth group organizers.

Given the overall goals of supporting self-sustaining development and helping the rural poor, it was no surprise that the conventional literacy programme launched by BRAC did not serve its purpose. The programme was quickly abandoned and a new functional education approach was introduced. The new programme was marked by substantial innovation in methodology, content material, and relevance to the learner's life. Apparently, even this, a series of prestructured lessons taught through a relatively standardized pedagogical approach to a group formed without any specific rationale, was not adequately functional as far as the life of most of the learners was concerned. BRAC recognized that the functional education learning groups had to be formed with people who had common socioeconomic interests and that the educational programme must be linked more directly and intimately with collective development action. This is the direction that had been taken by the functional education activities in the newer BRAC projects. "Consciousness raising" and engaging in collective self-help action had gained precedence over the traditional goals of acquiring literacy and numeracy skills, although these were not seen as alternatives. Village workshops introduced in Sulla could be described as a form of relatively unstructured functional education without the literacy and numeracy content and reflected a concern about making the educational programme an active instrument for promoting development action.

(d) community input in overall strategies, policies, and work plan of the development programme transcending individual committees; and (e) overcoming factionalism and interest conflicts in the community to achieve broad-based participation, particularly of the disadvantaged groups.

Participation of the beneficiary population in a development programme along these dimensions is essentially a problem of building local organizations and institutional structures in such a way that participation is a significant and meaningful contribution rather than a token gesture. This is turn raises the problems of rationale for forming viable local organizations, the best approach to mobilizing people for collective action and creating a "consciousness" about collective or class identity and class interests, and the best means for building the necessary competence and capacity for collective action.

In rural societies characterised by peasant farming and large segments of landless and other disadvantaged groups, creation of participatory institutions and promotion of the participatory process require basic changes in the overall configuration of the intergroup social and economic relationships. For instance, the participatory institutions must overcome the entrenched factionalism in village communities that are nurtured by powerful and influential families and groups; break the semi-feudal patron-client bondage; and give the disadvantaged groups the self-confidence, hope, and courage that will convince them of their collective strength.

There is need for a clear conceptualization of the participatory process and its goals in a given rural context. A strategy for identifying and forming the homogeneous interest groups must be determined, activities must be devised and implemented that are within group capacity but also strike at the root of their subjugation and deprivation. The educational process becomes a central element in this strategy.

Ensuring participation in all its dimensions, as the evolutionoof the Sulla Project and the plans for other new projects indicate, calls for a lessening of emphasis on the sectoral approach and building an organizational structure that, instead of managing the programme for the beneficiary population, permits the growth of the local groups towards greater self-reliance and autonomy. As we have noted earlier, the sectoral approach and an organizational model that inhibits popular control of the development programme tend to go hand-in-hand; conversely, effective integration and meaningful participation are like two sides of the same coin.

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The evolution of the functional education programme in BRAC suggests that the lessons and the methodology of the functional education course cannot be inserted into any situation and expected to promote development, unless the particular situation permits the formation of relatively homogeneous interest groups and unless the atomosphere exists for using the educational programme to plan and initiate collective self-help activities.

In the training of health workers and other field-level specialized personnel, BRAC evolved a low-cost but effective formula by shunning the trappings of such conventional training programmes as classroom lectures, theoretical studies, highly structured syllabuses, fulltime professional trainers, and special training facilities. It relied on supervised apprenticeship in real-life work situations followed by adequate technical support when the apprentices took independent responsibilities. BRAC also demonstrated that with continuous technical backup, people of both sex with varied socioeconomic background and little or no formal education could be entrusted with specialized development functions. Even with the "informal" training approach, a large variety of competence and skills (such as those of paramedics, shevikas, and LFPOs) could be differentiated and developed as demanded by the circumstances.

It might be noted that paramedics, with their short informal training, would probably not be recognized as "paraprofessionals" by government standards, although even they could not be afforded at the base of the service delivery system -- hence another layer of auxiliaries, the shevikas. This raises questions about the manpower policies and training requirements of government programmes that raise public costs and make services out of the reach of the rural people. An alternative model of manpower development and utilization deserves serious consideration and trial, one that relies on practical apprenticeship and relatively intensive technical supervision as the basic approach for all field level workers of development services.

For the improvement of skills and competence of general field level workers BRAC has moved from an informal on-the-job learning approach to a more systematic training programme. This appears to be in part the result of the accumulated BRAC experience in the field that has led to the identification of certain skills and knowledge that need to be developed by all field workers and for which a training process may be devised. The emphasis on a special training programme also reflects a shift in the programme approach away from a large BRAC field organization to a greater reliance on the leaders of local organizations. The local group leaders are not full-time BRAC workers and, unlike BRAC's own full-time field agents, are not under the continuous supervision and guidance of BRAC personnel.[9]

APPENDIX C

Sampling and Vital Data Collection: Preliminary Notes and Comments

1. Overview

We have specified in the main text an evaluation plan which calls for assessment of the impact of the project on vital rates. A dilemma in the design of this project is that we must be as parsimonious as possible in data collection so that rapid reporting of events is possible with minimal cost, yet rigorous enough to detect significant change in vital rates. Our intention is to maintain a full cycle of data collection, editing, linkage, and reporting on a quarterly cycle[1] with a small staff and limited access to computing facilities. We, therefore, propose sub-sampling within sample unions, and household visitation in quarterly cycles to monitor demographic events. In this section we first present a brief discussion of samplimg considerations and subsequently a preliminary discussion of enumeration procedures.

2. The Sample

Some considerations in sampling will be following:

2.1 We shall stratify by thana and select unions within thana.

2.2 Our first fraction (unions) will be designed to produce four per thana, so that the selection probability for the first stage of sampling will differ by thana. Since there are 10 non-municapal unions in Serajgonj of which two are largely flooded (and hence merged) the fraction is 4/9 or .4444. In Noapara the first stage fraction is .50. We select unions by designating two zones (north and south) and selecting at random, two unions from each stratum. From those non-sample unions we purposefully select a fifth union as a special training and demonstration site. Once the four sample unions are selected, we shall randomly assign each to treatments (as specified in Table 5, main text).

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[1] The quarterly cycle is based on our observation, in the Munshigonj Project that completeness of recall of mortality events was ensured only for a 4 month cycle of interviewing.

2.3 The overall sampling fraction will be designed so that sampling within thanas will produce an equal probability of a household being selected. Thus,

$$F = (f_{11} \cdot f_{12}) = (f_{21} \cdot f_{22}) \qquad (1)$$

Where

F is the overall fraction

f_{11} is the union fraction, thana 1

f_{21} is the union fraction, thana 2

and f_{12} is the household fraction, thana 1

f_{22} is the household fraction, thana 2

2.4 The sample size is given by

$$n' = \frac{Z^2(pq)}{d^2} \qquad (2)$$

Where

n' = preliminary sample size

Z = 2.58, the standard normal deviate for $p<.01$

p = the estimated prevalence

q = 1-p

and

d = the precision desired

Adjusting (2) for the sample fraction we have

$$n = n'/1+(n'/N) \qquad (3)$$

Where

n = the final sample and

N = the number of households in two thanas

Appendix C (contd.)

2.5 Computing F we have

$$F = n/N$$
$$= (n_1 + n_2)/N$$

Since there are 33,793 households in the MOHPC Mouza lists in Serajgonj and 27,062 in Noapara

$$F = n/60855$$

Let $Z = 2.58$, $p = .1$ and $d = .01$, a plausible assumption for either the CDR or for family planning, then from (2)

$n' = 5991$ and from (3)

$n = 5454$

so that

$F = 0.0896$

2.6 For Serajgonj, from (1), the fraction is $0.0896 = .44\ (f_{12})$ so that

$f_{12} = .2037$

and for Noapara

$f_{22} = 0.0896/.5$

$= .1792$

Thus the sample in Serajgonj will be approximately 3000 and in Noapara 2500. The sample may be slightly larger owing to the fact that populations may be under enumerated in the 1981 Mouza listing.

This sample size should provide information about other events, such as information about neonatal mortality. Assuming a birth rate of 40 births per 1000 population, then we expect about 950 births per year or about 120 infant deaths per year. Assuming approximately 40 percent of the 120 will die in infancy then we expect about 50 neonatal deaths per year. We can observe the impact of our study on infant and neonatal mortality over a three year period by comparing rates for treatments, but the impact for a given year cannot be ascertained with confidence from such as small sample. Both crude birth and crude death rates, however, can be monitored as well as annual age specific fertility and treatment and comparison areas can be compared over the three year period.

Appendix C (contd.)

3. Enumeration

Each household in the sample will be completely enumerated for

a) Names of residents
b) Relation of household head
c) Sex
d) Date of birth (or age)
e) Marital status
f) Own children of married women of reproductive age
g) Educational attainment
h) Occupation

A sample form appears in Appendix C (Annex 1). On the first round (Step 1, Figure C1), the form will be completed for each household. This record, complete with individual names, will be computerized, edited and printed for quarterly field updating (Step 2, Figure C1). Married women of reproductive age (MWRA) will interviewed (Appendix D) on the second quarterly round (Step 3, Figure C1). Thus two computer files will emanate from the field in the first pair of rounds: A household header record and a header record for MWRA. Events in the second and subsequent quarterly round (Step 4, Figure C1) will be posted to four event files:

- births
- deaths
- migration in and out
- contraceptive events

Software will be developed for history files for events to be linked over time:

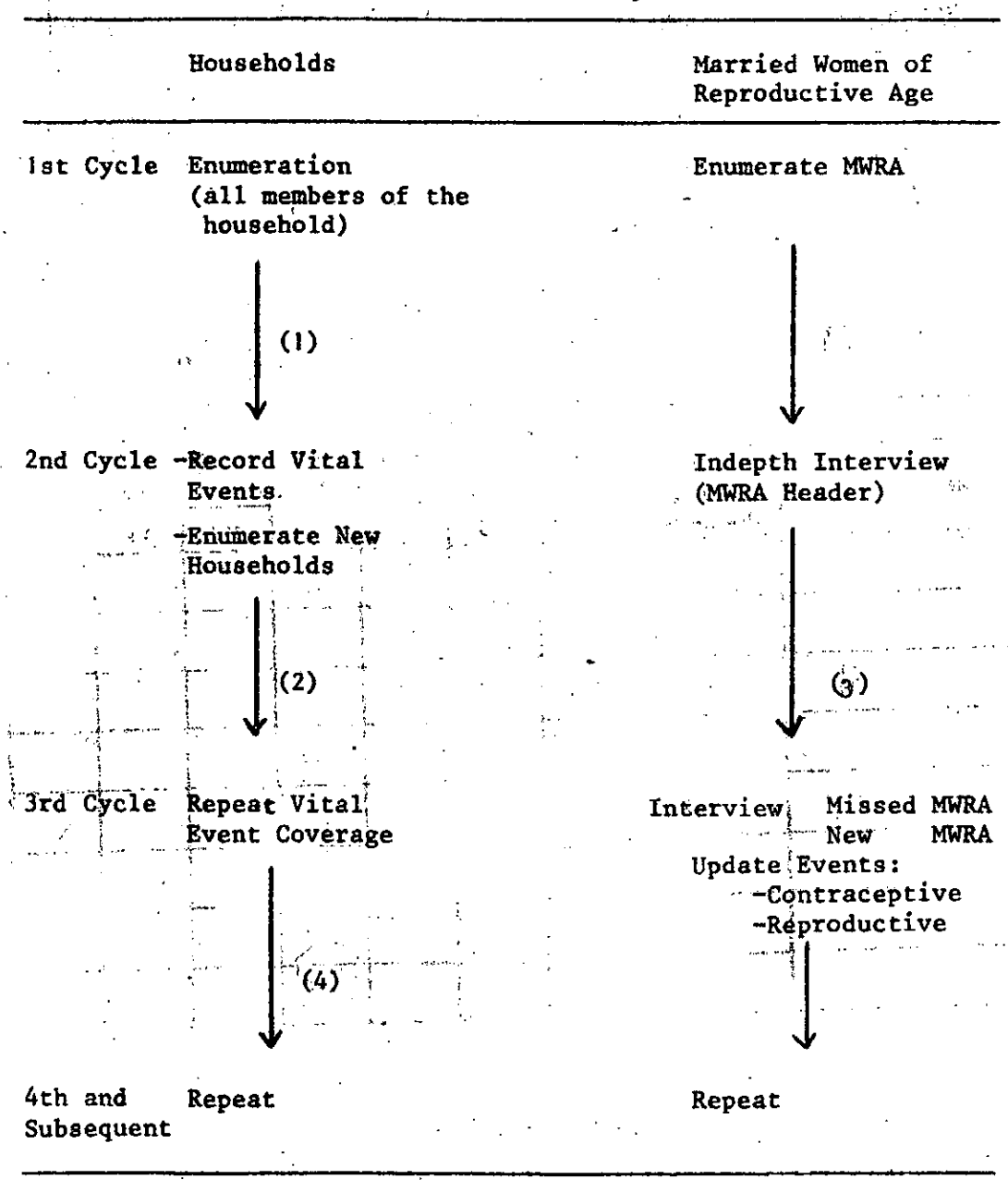
- a fertility history file, MWRA
- a contraceptive history file, MWRA
- a household history file: deaths, migrants, births

Our plan is to computer print quarterly vital statistics reports and bi-annual enumeration updates worker-wise for field checking and verification.

Detailed systems analysis and software development have yet to be developed and tested.

Appendix C (contd.)

Figure C1. Work Cycle for Data Collection



Appendix C, Annex 1

International Centre for Diarrhoeal Disease Research, Bangladesh

MCH-FP Extension Projects

CENSUS OF POPULATION 1982

Notes to Interviewers

Div
Dis
SD
Th
Uni

Village _____

Bari _____

Form No. _____ of _____

Person No.	Name	Relationship to Head of Household	Office use only						
			HS	HT	FS	FN	FS	FT	Others
01									
02									
03									
04									
05									
06									
07									
08									

APPENDIX D[1]

Baseline Survey Questionnaire of Married Women of Reproduction Age

The following interview schedule was developed for use in Matlab and will be modified slightly[2] for the baseline interview of married women of reproductive age (MWRA). Our intention is to replicate this survey in the MCH-FP Extension Project, not only to permit analysis of project effects, but also to permit comparative analysis with Matlab. The Matlab survey is not budgeted in this proposal, but we have reproduced the interview schedule here to permit review of the MCH-FP Extension baseline survey. Interviews will be conducted of all MWRA in the sample households of the surveillance system (See Appendix C).

---

[1] Appendix D was prepared by Jalaluddin Akbar

[2] The Pregnancy and Health Table at the end of the questionnaire makes reference to the Demographic Surveillance System in Matlab. This section of the questionnaire will be changed to a World Fertility Survey format.

144-A

উত্তরদাতার সম্মতিপত্র

আমি জানতে পারলাম যে, আই,সি,ডি,এস,প্রি -এর কিছু পরিষদ/মহিলা সিলেক্ট কর্মী সম্পর্কে 3 পরিবার পরিকল্পনা পদ্ধতি বিষয়ে জ্ঞান ও ব্যবহার এবং সামাজিক জনসংখ্যা বিজ্ঞান সংক্রান্ত বৈশিষ্ট্যের তথ্য সংগ্রহ করছেন।

আমি একজন উত্তরদাতা/দাত্রী হিসেবে গণ্য হয়েছি এবং আমি এও বুঝেছি যে, প্রশ্নপত্রের কোন একটি প্রশ্নের কিংবা সকল প্রশ্নের উত্তর না দেওয়ার অধিকার আমার আছে।

আমি এও নিশ্চিত যে, যে সকল তথ্য সংগৃহীত হয়েছে তার সকল প্রকার গোপনীয়তা রক্ষা করা হইবে। উপরোক্ত সার্বসাপেক্ষে আমি সাক্ষাৎ প্রদানে সম্মতি দিলাম।

স্বাক্ষর বা বৃদ্ধাঙ্গুলির ছাপ

তারিখ : _____

INTERVIEWEE'S CONSENT FORM

I have come to know that the ICDDR,B female/male field workers are collecting information about knowledge and practice of health and family planning methods and also about some socio-demographic characteristics. I have been included as one of the respondents and I understand that I have the right to refuse to respond to any or all questions.

I am also assured that confidentiality will be maintained about all information obtained. Under these conditions I do hereby give my consent for interview.

_____
Signature or thumb impression

Date: _____

MCH-FP EXTENSION PROJECT

INDEPTH QUESTIONNAIRE

IDENTIFICATION

1. Record _____ ☐

2. Thana Name _____ ☐

3. Union Name _____ ☐

4. Mouza Number _____ ☐☐☐

5. Household Number _____ ☐☐☐☐☐

6. Individual Number _____ ☐☐

7. a) Date of first interview _____ Y M M D D

   b) Date of second interview _____ 2 ☐☐ ☐☐ ☐☐

   c) Date of third interview _____

8. Result of interview

Interviewed	1
Respondent temporarily absent	2
'R' refused	3
'R' husband refused	4
No eligible woman/man in sample bari	5
Other (specify)	

☐

9. Name of Interviewer _____ ☐☐

10. Name of Supervisor _____ Checking date _____ ☐

RESPONDENTS BACKGROUND

101 In what month and year were you born?

English		Bengali		
Year	Month	Year	Month	Don't know
				9999

102 How old are you?
(PROBE AND CORRECT ANY INCONSISTENCY AND ALSO PROBE FOR HISTORICAL EVENTS)

Age _____(record in completed year)

103 Have you ever attended school/madrasha?

(1) Madrasha only
(2) School only
(3) Functional education only
(4) No education at all (Go to 107)

104 What was the highest level of education you attended?

(1) Not completed primary
(2) Passed primary but not secondary
(3) Passed S.S.C. but not H.S.C.
(4) Passed H.S.C.
(5) Passed B.A. and above

105 How many years altogether did you complete at school/madrasha and other institutions?

_____ Years

106 Will you please read this three lines?

GIVE THE CARD TO THE RESPONDENT AND MARK IN RIGHT PLACE

(1) 'R' refused to read
(2) Could not read 1st line[1]
(3) Could read 1st line
(4) Could read 2nd line[2]
(5) Could read 3rd line[3]

---

[1] I have a house

[2] My house is very beautiful

[3] Cancer is an incurable disease

107 What is your religion?

(1) Islam (2) Hindu (3) Other religion ☐

108 Have you got any occupation which earns money beside being housewife?

Yes ☐ No 88

Write clearly what is said

_____ ☐☐

_____

MARRIAGE HISTORY

201 Now I have some questions about your married life what is your corrent marital status?

(1) Married (2) Widowed (3) Divorced (4) Separated ☐

M S
D W

(Go to 203)

202 Is this your first marriage?

(1) Yes (2) No

203 How old were you when you got first married?

_____ Years ☐☐

204 Did you and your (first) husband live together immediately following your marriage within a week?

No ☐ Yes 88 (Go to 301)

205 How many months passed before you and your husband lived together?

_____ Months ☐☐

MATERNITY HISTORY

301 We would like to get a complete record of all the babies you have given birth to in all your life. Have you ever given birth to any children?

Yes [1] (Go to 303)

No [ ]

302 Have you ever been pregnant?

Yes [2] No [3] (Go to 318) [ ]

303 What was the final result of the last pregnancy? Was it a live birth, still birth or miscarriage?

(1) Live birth (2) Still birth (3) Miscarriage [ ]

304 Do you have any sons you have given birth to who are now living with you?

None [00]

IF YES: How many sons live with you? Number ___ [ ][ ]

305 Do you have any sons you have given birth to who do not life with you?

None [00]

IF YES: How many sons do not live with you?

Number ___ [ ][ ]

306 Do you have any daughters you have given birth to who are now living with you?

None [00]

IF YES: How many daughters live with you?

Number ___ [ ][ ]

307. Do you have any daughters you have given birth to who do not life with you?

None [00]

IF YES: How many daughters do not live with you?

Number ___ [ ][ ]

308 Have you ever given birth to any boy or girl who later died, even if the child lived for only a short time?

No 8888 Yes

(Go to 311)

309 How many sons died? Number____

310 How many daughters died? Number____

311 Total Number of children ever born (sum 304 to 310)____

INTERVIEWER: Sum answers in 304 to 310, and ENTER the total number of children ever born in the box.

NOW ASK: Just to make sure ask the woman again, "From my record, you have given birth to (total)____ children. Is this correct?

IF NO: Probe and correct responses as necessary.

IF NO CHILDREN EVER BORN: Go to 318
Otherwise: Read the following introduction.

Now I want to ask you some questions about each of your (TOTAL) births, starting with your YOUNGEST child.

BIRTH HISTORY

INTERVIEWER: Enter the names of the Children in 313, then ask 314-317 for each child starting with the youngest. If twins, use one for each and connect with a bracket at the side of the name.

PREGNANCY TABLE

312 Birth Order	313 What name did you give your youngest/ eldest child? Name	314 Was it a boy or a girl? Boy = 1 Girl = 2	315 When was he/she born? or How old is he/she now? Month = MM Year = YY Age	316 Is this child still living? Yes = 1 No = 2	317 If DEAD, how old was he/sh when died? 28 days = 1 28 1 yr. = 2 1 yr. = 3 Not applicable = 8
			M M Y Y		
01			Age		
02			Age		
03			Age		
04			Age		
05			Age		
06			Age		
07			Age		
08			Age		
09			Age		
10			Age		
11			Age		
12			Age		
13			Age		

ASK THE FOLLOWING QUESTION TO CURRENTLY MARRIED WOMEN ONLY

Currently Married (SEE 201)

Yes ☐ No ☐ (Go to 401)

318 How many weeks ago did your last menses occur?
Weeks _____ (If more than 5 weeks then ask 319 otherwise skip to 320)

319 What reason do you think your menses has not occured?

Possibility of pregnancy	91
No menstruation after birth or pregnancy termination, PPA	92
Over 35 years and stopped menses for last 6 months	93
No menses, 18 months since lactation	94
Using injection for family planning	95

IF ANSWER TO 319 IS 91 ASK THE FOLLOWING QUESTION OTHERWISE SKIP TO 323

320 Are you pregnant at present?

Yes	No	Not sure	No response
1	2	7	9

(Go to 323)

321 For how many months have you been pregnant?
D.K. 99
Months _____

322 After your baby is born do you want more children?

Yes	No	D.K. or God knows
1	2	9

323 You have _____ sons + _____ daughters + (pregnant)
(See 304 to 307 and 320)

How many (additional) sons and daughters do you want?

Sons	Daughters	Don't want	D.K. or God knows
		98	99

(Go to 401)

324 Do you want (another) child soon?

Yes ☐ No ☐ (Go to 401)

325 When would you like to conceive your child?

Within 6 months	1
From 6 months to 1 year	2
From 1 year to 2 years	3
D.K. or God knows	4

☐

CONTRACEPTIVE KNOWLEDGE AND USE

401 Now I want to talk to you about a somewhat different topic. As you may know, there are various ways that a couple can delay or avoid pregnancy. Have you heard of or do you know of any of these ways or methods?

Yes ☐ No ☐ (Go to 404)

402 From whom or where did you heard about these methods?

_____

_____ ☐

403 What Family Planning medicine or methods have you heard of?

NOTE DOWN THE ANSWERS BY CIRCLING 1 IN COLUMN 'A' OF CONTRACEPTION TABLE FOR EACH METHOD MENTIONED

FOR EACH METHOD NOT CIRCLED IN COLUMN 'A' ASK 404

404 Just to be sure, have you heard of (Name of method)?

CIRCLE 2 OR 3 IN COLUMN 'B', IF 'YES' IN 'A' OR 'B'. ASK 405 BEFORE PROCEEDING TO NEXT METHOD

405 Have you or your spouse ever used?

_____ (Name of method)

CIRCLE 1 OR 2 IN COLUMN 'C'
ASK THE FOLLOWING QUESTION TO CURRENTLY MARRIED WOMEN ONLY

406 Are you or your spouse currently using _____ (Name of method)?

CIRCLE 1 OR 2 IN COLUMN 'D'

CONTRACEPTIVE TABLE

METHOD	(A) KNOWLEDGE UNPROMPTED Q 403	(B) KNOWLEDGE PROMPTED Q 404		(C) EVER USED Q405		(D) CURRENTLY USING Q 406		
	Yes	Yes	No	Yes	No	Yes	No	
1. PILL	1	2	3	1	2	1	2	
2. CONDOM	1	2	3	1	2	1	2	
3. VASECTOMY	1	2	3	1	2	1	2	
4. TUBECTOMY/LIGATION	1	2	3	1	2	1	2	
5. IUD/COPPER T/LOOP/COIL	1	2	3	1	2	1	2	
6. INJECTION	1	2	3	1	2	1	2	
7. FOAM TABLETS, JELLY	1	2	3	1	2	1	2	
8. RHYTHM	1	2	3	1	2	1	2	
9. AZAL (Withdrawal)	1	2	3	1	2	1	2	
10. OTHERS (Specify)_____	1	2	3	1	2	1	2	

407 Currently not using contraceptive [00] Go to 413

Currently using (Method Name)_____

If 'R' or spouse is currently using PILL OR CONDOM ask the following questions.

408 Did you or your spouse pay for Pill/Condom?

Yes [1] No [2]

409 Where did you purchase or g t it?

_____

_____

410 What brand of pill are you using now?

_____

411 Have you used any other brand in the past?

Yes [1] No [2]

412 What other brands have you used?

_____ ☐

_____

INTERVIEWER: Show the package of Maya, Lyndiol, Ovostat, Restovar and Narinyl and ask if the 'R' saw the package. Note the answers by using circles (0) marks in the appropriate boxes against each package.

413 Have you seen the package?

Package Name	Seen the package
Maya	1
Lyndiol	2
Ovostat	4
Restovar	8
Narinyl	16

☐☐

ASK ONLY TO EVER USERS

414 I, want you to think to the last method that you used.

For how many methods have you been using (name method) without interuption.

_____Months ☐☐

SEE THE CONTRACEPTION TABLE AND IF 'R' IS NOT A CURRENT USER ASK 415 OTHERWISE GO TO 418

415 What are the main reasons for not using a family planning method? (RECORDS ONLY TWO MAIN REASONS)

1. _____ ☐

2. _____ ☐

_____

416 Do you intend to use a family planning methods in the future?

Yes	No	Don't know
1	2	3

(Go to 418)

417 Which method do you intend to use?

Specify: _____

Don't know 99 ☐☐

(ASK OF EVER MARRIED WOMEN)

418. Has any one ever visited your home to tell you about family planning ro to offer methods of family planning?

Yes	No	Don't know
1	2	3

419. Now I want you to think back to the time that (Name _____ last live birth SEE 312) was born.

Where was (name) _____ born?

House of husband	1
House of father, relative	2
Clinic	3
Hospital	4
Other (specify) _____	5

420. Who delivered (Name _____)?

Relative	1
Dai, who is a relative	2
Dai, who is not a relative	3
Clinic, hospital attendent	4

421. Now I want you to think back to the time after (name _____ youngest child) was born. Have you used any family planning method since the birth of (name _____) of youngest child (SEE 312-01)

Yes	No
1	2

(Go to 424)

422. What method was first used after the child's birth? Name of method _____

423. How many months after (name _____ of youngest child was born did you use the above method?

_____ months (Go to 425)

424. Why did you not use any family planning methods after (name _____) was born?

_____

_____

_____

THE FOLLOWING QUESTION SHOULD BE ASKED ONLY IF Q323 IS DON'T WANT AND IF CURRENTLY USING CONTRACEPTIVE(SEE 407)

425 Since you don't want any more children and you are currently using (_____name) of method. Have you considered switching to sterilization or tubectomy?

Yes [1] No [2] Not applicable if sterilized [8] [ ]

426 Why not? [ ]

_____

_____

_____

CURRENTLY NOT USING ANY FAMILY PLANNING METHOD

427 (SEE 323). You have mentioned that you want _____sons _____daughters? If this desire is fulfilled, do you intend to use family planning methods?

Yes [ ] No [ ] (Go to 429)

428 Which method _____ [ ]

Why _____ [ ]

429 Why not _____ [ ]

Name each Method in Table 'A'. If answer is Yes ask name of place. Otherwise go to next method and so on.

TABLE - A

430 Do you know where you or your spouse can get (Methods)	1 Pill	2 Condom	3 Vas.	4 Tub.	5 IUD	6 Inj.	7 F/Tab.
Don't know	0	0	0	0	0	0	0
Grocery/Mudi Dokan	1	1	1	1	1	1	1
Union Health Center	2	2	2	2	2	2	2
Thana Health Centre	3	3	3	3	3	3	3
Family Planning Centre	4	4	4	4	4	4	4
Hospital	5	5	5	5	5	5	5
Medicine shop	6	6	6	6	6	6	6
Family Planning worker	7	7	7	7	7	7	7
Other(Specify) _____							

[ ][ ]

(IF MORE THAN ONE SOURCE IS MENTIONED ASK: WHICH SOURCE IS MOST CONVENIENT TO YOU?)

HEALTH AND WORKER HISTORY

501 During the last 6 months was there any one in your household who was sick?

Yes [1] No [2] (Go to 510) [ ]

502 Did someone from your household suggest any particular treatment? [ ]

Yes [1] No [2] (Go to 505)

503 What type of treatment was given? [ ]

(1) Allopathic, (2) Homeopathic, (3) Kabiraji, (4) Doa Tabiz , (5) Others _____

504 What is his/her occupation? [ ]

_____

505 Did you consult with any body else? [ ]

Yes [1] No [2] (Go to 510)

506 Is he a doctor? Yes [1] No [2] (Go to 509) [ ]

Name _____ Address _____

_____

_____

507 What type of doctor is he? [ ][ ]

Qualified (licenses) allopathic doctor	1
Quack (not medicine shop keeper)	2
Kabiraj (traditional healer)	3
Homeopathic doctor	4
Medicine shop keeper	5
Government doctor	6
Trained Palli Chikitshak	7
Government health worker	8
Don't know	9
Other _____	

508 Where did the consultation took place? [ ]

Outside of 'R' bari/household	1
Inside of 'R' bari	2
Union health centre	3
Thana health centre	4
Others _____	

509 When did you consult after first consultation?

Qualified (licensed) allopathic doctor	1
Quack (not medicine shop keeper)	2
Kabiraj (traditional healer)	3
Homeopathic doctor	4
Medicine shop keeper	5
Government doctor	6
Traditional palli chikitshak	7
Government health worker	8
Don't know	9
Others _____	10

510 Has any Government HEALTH WORKER ever visited your house?

Yes [1] (Fill GHWF) No [2] (Go to GHW Form Col. 10)

511 Has any Government FAMILY PLANNING WORKER ever visited your house?

Yes [1] (Fill FPWF) No [2] (Go to FPW Form col. 10)

512 What type of card available?

(1) Malaria card (2) Family Planning card
(3) Both card (4) No card

513 What treatment do you give a child when he suffers from diarrhoea?

_____

_____

514 Did you ever go to a Union/Thana hospital for your own or any relatives (like son, daughter etc.) treatment?

Yes [1] (Go to 516) No [2] ↓

515 If no, why did you not go?

(1) No illness
(2) Far distance
(3) Expensive
(4) Hospital is not good
(5) Local treatment available
(6) Others _____

_____

516 Was there any thing about the hospital of which you were not satisfied?

Yes [1] No [2] (Go to 518) ☐

517 If Yes, why are you not satisfied?

(1) Long waiting line
(2) Improper behaviour of the staff
(3) Medicine not available
(4) Few medicine
(5) Have to pay money ☐
(6) Medicine did not work
Other (specify) _____

518

	Name	Date	
Pre checker	_____	_____	☐
Coder	_____	_____	☐
Post checker	_____	_____	☐

GHWF

1	2	3	4	5
Did he/she visit your home in last visit	When was the last time he/she visited you?	Did he/she speak with you directly or through a family member? If YES, did he/she speak about family planning only or health or FP and health.	What FP topics discussed?	If FP methods discussed what methods discussed?
Yes [1]	During last week [1]	Did not speak with me (Skip to 10) [1]	1 F.P. method discussed [1] MC [1]	No specific method [0] MC
No [2]	During last month [2]	FP topic only [2]	2 F.P. methods discussed [2] [2]	Pill [1]
	2-3 months ago [3]	Health topic only (Skip to 6) [3]	3 or more FP methods discussed [3] [4]	Condom [2]
	4-6 months ago [4]	Health & FP topics [4]	FP education only without any method [4] [8]	Vasectomy [4]
	7-12 months ago [5]	Had discussed but not on health and FP (Skip to 10) [5]	FP education with method [5] [16]	Tubectomy [8]
	More than 1 yr ago [6]		Other (specify) _____ [6] [32]	Injection [16]
	Can't remember/DK. [9]			IUD/Loop/Copper. T [32]
				Other(specify) _____ [64]

6			7	8	9		10	11
What health topics were discussed		MC	Did you learn something from his/her last visit	Did you get something from him/her which helped your family	How did it help you?		Do you know his/her residence	Will you go to his/her residence if you feel the need?
Vitamin knowledge or other discussion on medicine	1	1	Yes [1]	Yes [1]	Got vitamin	1	Yes [1]	Yes [1]
Fever inquiry and its treatment	2	2	No [2]	No [2] (Skip to 10)	Got FP medicine	2	No [2]	No [2]
Hygiene	3	4			Got other medicine	4		
Preventive measure of disease and its treatment	4	8			Received hygeinic related knowledge	8		
Treatment of disease other than fever	5	16			Introduction to use pure water	16		
Nutrition	6	32			Health improved (nothing specific)	32		
Sanitation	7	64			Side effect of F.P.	64		
Malaria control	8	128			Immunization	128		
Vaccination	9	256			ORS	256		
Many children detrimental to health	10	512			Others(specify) _____	512		
Other(specify)_____	11	1024						

F.P. topic (detail) _____ — ——— Health topic (detail) _____

FPWF

1	2	3	4	5
Did he/she visit your home in last visit	When was the last time he/she visited you?	Did he/she speak with you directly or through a family member? If YES, did he/she speak about family planning only or health or FP and health	What FP topics discussed?	If FP methods discussed what methods discussed
Yes [1] No [2]	During last week [1] During last month [2] 2-3 months ago [3] 4-6 months ago [4] 7-12 months ago [5] More than 1 yr ago [6] Can't remember /DK [9]	Did not speak with me (Skip to 10) [1] FP topic only [2] Health topic only (Skip to 6) [3] Health & FP topics [4] Had discussed but not on health and FP (Skip to 10) [5]	1 F.P. method discussed [1] MC [1] 2 F.P. methods discussed [2] MC [2] 3 or more FP methods discussed [3] MC [4] FP education only without any method [4] MC [8] FP education with method [5] MC [16] Other (specify) [6] MC [32]	MC No specific method Pill Condom Vasectomy Tubectomy Injection IUD/Loop/Copper T Other(specify)

6	7	8	9	10	11
What health topics were discussed	Did you learn something from his/her last visit	Did you get something from him/her which helped your family	How did it help you?	Do you know his/her residence	Will you to to his/her residence if you feel the need?
Vitamin knowledge or other discussion on medicine [1] MC [1] Fever inquiry and its treatment [2] MC [2] Hygiene [3] MC [4] Preventive measure of disease and its treatment [4] MC [8] Treatment of disease other than fever [5] MC [16] Nutrition [6] MC [32] Sanitation [7] MC [64] Malaria control [8] MC [128] Vaccination [9] MC [256] Many children detrimental to health [10] MC [512] Other(specify) [11] MC [1024]	Yes [1] No [2]	Yes [1] No [2] (Skip to 10)	Got vitamin [1] Got FP medicine [2] Got other medicine [4] Received hygeinic related knowledge [8] Introduction to use pure water [16] Health improved (nothing specific) [32] Side effect of F.P. [64] Immunization [128] ORS [256] Others (specify) [512]	Yes [1] No [2]	Yes [1] No [2]

F.P. topic (detail) _____

Health topic (detail) _____

APPENDIX E

REVISION OF THE METHODS AND PROCEDURES

The external reviewers of the protocol recommended more detailed exposition on the theoretical framework for the protocol and addition of a comparison area. This Appendix is addressed to the need for revising the protocol in accordance with the recommendation of the external reviewers.

1. Theoretical Framework

The diagnostic phase of the research work will be guided by the principle that certain distinctions must be drawn in the course of examining the government service system. These distinctions that must be drawn are useful and identifying the critical organizational and operational problems that account for faulty implementation of services. They are as follows:

a) Distinction between client transactions and organizing. Any program will have to have a plan for dealing with the client population, that is it will have to decide what kind of contraceptive mix or health technology will be offered to the population living in the villages of the extension areas. How will these families be reached? Which government personnel will be responsible for offering specific services? Such questions describe the client-strategy of the extension project. The client strategies will include not only those issues mentioned above but such questions as the continuity of services, follow-up, referral systems and the question of what non-family planning services should be offered as part of the program.

Any program will also have to organize itself to undertake these client transactions. Whereas the client strategy identifies those elements in the plan or program which relate to the contact between the program and the client, the organizational strategy describes the plan or the practice by which resources are marshalled for carrying out the client strategy. That is the organizing activities of the program are the set of actions which are designed to facilitate the transactions with the clients. It is true that client transactions are the ultimate goal of the organization but these transactions cannot take place without the existence of a set of administrative or organizing activities which make them possible. Examples of organizing activities might include the process of making resource allocation decisions, training programs, personnel management, evaluation activities, etc. Such activities do not involve the client population, but the actual pattern of exchange with the client is highly dependent upon them.

b) Distinction between planned and observed program activities. It is important to distinguish between the plans of a program and the way the program actually operates in the field. Planned strategies are the intentions of government authorities or of program workers. These might be represented by a government planning document or in the verbal statement of a government official or a field worker about what he intends to

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do. Observed strategies or activities are the actual behavior of the program both at the client and at the organizing levels. It is common place to observe that there are often observeable differences between plan and practice. In understanding organizations and their effectiveness this distinction is central. The field worker may not visit the village as often as he tells the interviewer that she/he plans to visit the village. The supervisor may not check the work of the field worker with the frequency which is assumed in the original plan for a program. The physician may not take the time with a client or a patient that was intended.

c) Distinction among the current program of the government, the original experience in Matlab, and the planned program tocome out of the intervention. There may be a contrast between all of these strategies as they actually exist in the current government program and all of these strategies as they are intended to exist or would be observed to exist in the new strategy. Thus one way of conceptualizing this transfer of technology is that there will be a four dimensional definition of the problem and that in each of these dimensions it will be important for the organizers of the project to attempt to move the government program with its characteristics to an approximation to the planned strategy which is the essence of the new project.

A diagram may make this process clear. In the current project the experience of Matlab (a) will be combined with knowledge of the current government program (b) to create a new program (c) based on elements of both. The elements that are important are in the four cells of the diagrams.

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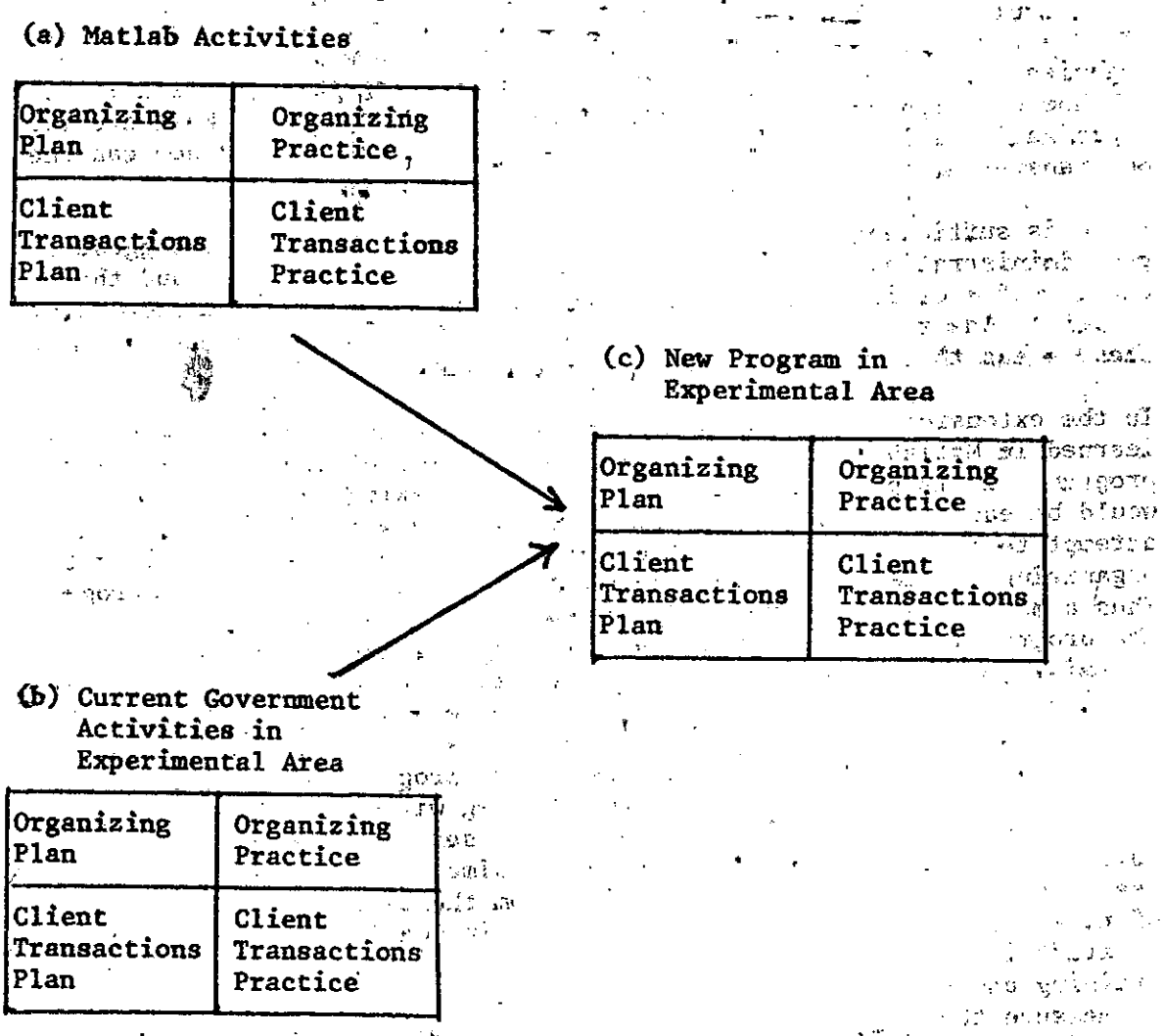
Figure E1. Analytical Framework for Diagnostic Research



It is important to add a comment analyzing what was successful in the Matlab project. Using the concepts developed above, we see that what made Matlab successful was not only a successful strategy for interacting with the client population, namely an integrated family planning/MCH approach, but a very successful organizing strategy which was suited to the client transaction strategy. Because the organizational strategy was actually implemented the client strategy was also successful. It would be mistaken to conclude that Matlab implemented a successful client strategy alone. It is easy to overlook exactly how important a successfully implemented organizational strategy was in that particular experiment. Matlab developed a very strong organizational capability to implement a range of client strategies beginning with a more narrow family planning approach and ending up with the greater degree of integration. In thinking about the transferability of innovation to

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other areas it is very important to ask questions about how one can build up that kind of organizational capability elsewhere. In other words, the learning that has to take place should not only occur at the level of client transactions but must importantly begin with questions about organizational strategies. Another way of putting that question is to ask how can organizational capability be built elsewhere. What are the organizational lessons that can be learned from Matlab, and how can they be transferred to other areas?

There is sufficient circumstantial and intuitive evidence to suggest that the administrative system in the two extension areas is weak and that it the transfer of innovation from Matlab is to be successful a great deal of effort has to be invested in building administrative capabilities in these areas that will make any transfer possible.

In the extension project an effort will be make to transfer the process learned in Matlab to new areas under the control of the government program. It is probably fair to say that in making this transfer it would be easier to identify the client strategy which the program will attempt to introduce into the new areas than it will be to identify the organizing strategy which will be used as the basis for the new program. Thus a major effort will have to be made during the first months of the program to identify and assess the characteristics of the organization which is charged with delivering health and family planning services in these extension areas. This effort will take a number of forms. First, there are some characteristics of the program which are relatively well understood. In these areas program organizers will identify solutions or strategies for dealing with problems without further research. Second, there will be a set of organizational problems which are understood but where the exact dimensions of the problem need assessment. For example, it is clear from the experience with programs of this kind that there will be a problem in dealing with the transfer of staff in and out of the extension areas. Such transfers will complicate training and the ongoing continuity of services. But without an attempt to measure the extent of transfers the exact dimensions of this organizational problem will not be understood. A third kind of organizational problem will be those which are un-anticipated at the beginning and a major effort will have to be made to interview current program staff and respondents from within the community to identify the nature of such problems. Thus in at least two areas an effort will have to be made to empirically identify organizational problems which may help or impede the transfer of planning from Matlab to the extension areas. The same effort will be used to document, in a baseline sense, the characteristics of the organization and the workers within the organization at the beginning of the period of experimentation.

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2. Treatments

Treatments will be respecified from the design in the main text in two respects: 1) Comparison areas will be added in which no intervention occurs. Thus the sample surveillance system will be extended outside of the study thanas thereby increasing the sample by one third. Contiguous areas areas are available which place comparison unions in different Divisions, thereby minimizing the risk of contamination. 2) We will augment supervisory support with managerial training.

A key to testing the hypotheses underlying the project is to assure that there is sufficient variation in the intervention treatments designed for this level. A four way design is appropriate as shown in Table 1.

Table E1. Revised Treatment Design

Technical Training for Field Workers	Management Training for Supervisory Staff and Counterpart Support: Yes	Management Training for Supervisory Staff and Counterpart Support: No
Yes	HH	HM
No	MH	LL

The cells indicate the hypothesized degree of effectiveness in terms of the ability of the staff (1) to carry out their technical tasks and (2) to assure a high level of interaction with the client population. The first to these indexes measures the ability of the system to carry out the technical aspects of interacting with the client population when such interactions take place. The second measures the ability to assure that the organizing capability of the system is sufficient to assure a high level of contact. The HH in the upper left hand cell indicates that with both technical training of the field workers and management training of the supervisory staff and continuing counterpart support we would expect a high performance on both the client transactions and the organizing task. The HM in the right hand upper cell indicates that with technical training of the workers but no special efforts with the supervisory system that one might expect high level of achievement in the area of client transactions and moderate levels of effectiveness in the organizational transactions.