# AN EVALUATION OF THE FAMILY PLANNING OPERATIONS RESEARCH PROJECT MATLAB, BANGLADESH

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## I. EXECUTIVE SUMMARY

### A. Introduction

From January 20, 1979 to February 2, 1979 the consultants conducted an on-site, in-depth evaluation of the Matlab, Bangladesh Contraceptive Distribution Project (Contract AID/pha-C1105 with the Cholera Research Laboratory) which ended September 30, 1978. They were accompanied by Dr. James Shelton, Research Division, DS/POP, Agency for International Development. In addition to evaluating the past performance of the project, the Evaluation Team was requested to make suggestions regarding the future of the valuable data generated by the Project. Details of the scope of work are attached as Appendix A. A list of persons interviewed is attached as Appendix B.

### B. Evaluation Scope

This report is based upon eight sets of questions posed by Dr. James Shelton, AID/POP. (See Appendix A.) These were considered to represent the crucial issues in the evaluation of the family planning operations and research project of the Cholera Research Laboratory, Dacca.

1. What has been the performance of the project in providing services to the population? Have contraceptive services really been available so that the concept of contraceptive "availability" can truly be measured?

2. What is the quality of the data? Have birth rate measurements been accurate or at least replicable?

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C. Project Purpose and Summary of Conclusions

The Contraceptive Distribution Project (CDP) was instituted in 1975 to study the possible effectiveness of a Family Planning Program in rural Bangladesh based solely on the widespread availability of contraceptives. AID project funding continued from 1975 until September 1978. The Cholera Research Laboratory had earlier withdrawn its request for further AID funding. The CRL has requested and is confident of receiving UNFPA funding for continuation of the project. It feels no need, at this time, for further AID project funding.

The CDP project, including its modification since about October, 1977, has some great strengths and some weaknesses. The demographic data base is unique in its quality and extent for a rural area in a developing country, and it has served and will continue to serve in measuring the impact of the contraceptive program; it must maintained. The structure and operations of the system for contraceptive distribution has been excellent, and the program has been successful in reaching a substantial proportion of its target population. The clinical support services for contraceptors are well managed and fully adequate. The collection of family planning data (service statistics, routine reproductive data, prevalence surveys, KAP surveys, etc.) is comprehensive and well done, although there have been breaks and gaps as noted in the report.

The principal program deficinecy has been in the area of data analysis; comprehensive and definitive analysis for publication and dissemination has also been lacking. Many of the analyses distributed as CRL working papers need considerably more work. The supplementary health (MCH) services may be both commended and criticized. From the point of view of the population served, these services provide for basic needs and are efficiently delivered and were gradually phased in after appropriate training of staff. From the point of view of the project, however, their phasing precluded measurement of their impact on the family planning program, and the failure of the project

staff to keep AID informed in detail of their plans and progress let to conflict and project termination.

Although it appears that UNFPA will be supporting the project for the next several years, should the occassion arise that AID support is sought, AID should indeed consider future funding.

## II. FINDINGS

The findings and observations of the consultant team are presented here in direct response to the eight questions posed in the scope of work.

A. What has been the performance of the project in providing services to the population? Have contraceptive services really been available so that the concept of contraceptive "availability" can truly be measured?

The Contraceptive Distribution Program (CDP), initiated in October 1975, had as its service object the simple provision of "non-clinical" contraceptives (pills and condoms) to all married, non-pregnant women 15-44 years of age (at least 6 month post-partum, if lactating) who would accept and use them. Initial distribution was made by literate male Field Assistants (FAs) who had received minimal training for a period of five days, assisted by largely illiterate Lady Village Workers (LVWs) after a training period of six part-days. The LVWs had been recruited in their home villages and had been engaged for some years previously in the identification of births, deaths, marriages, and episodes of diarrhea. In this first round of distribution, which occupied a period of two months, eligible women were talked with in their homes and were told the advantages and proper use of contraceptives and their possible side effects. All who would accept them were given a six months supply. A second intensive recruitment round was made by the FA/FVW team. (Under the supervision of the FAs.) Subsequent distribution for resupply and for recruitment of new acceptors was made by the LVWs in their daily contact with the villagers for vital events and diarrhea surveillance. Although the LVWs provided "counseling" on side effects and corrected errors in pill use, there was no real follow-up with supportive therapy. The LVWs did, however, keep notes on pill distribution, and these were incorporated into continuation records maintained by the FAs.

In the first round of distribution, 81% of the 23,395 eligible women in the distribution area were contacted and an additonal 3.2% in the second round. Of those contacted initially, 68.8% were willing to accept a supply of pills; condoms were accepted by very few women. Data on subsequent distribution of pills, to new or continuing users, appears not to have been published, but prevalence, continuation and new acceptor rates were calculated from seven quarterly surveys of use conducted first in December 1975. New acceptor rates (based on residual eligible women) were 24.4, 6.3, 5.4, 3.8, 1.2, and 2.0%, respectively, in the first six surveys. Pill use prevalence, however, declined steadily,

from 17.1% on the survey of February 1976 to 8.7% on the last one in May 1977. Meanwhile, the use of condoms and other methods remained insignificant until an intensified condom distribution effort was made in August 1976, resulting in a 3.1% prevalence rate on the survey three months later. The prevalence rate of all contraceptive use was 18.0% in February 1976 and declined to what appeared to be a plateau level of 13.0% in May 1977.

There is little doubt that the project met its goal of ensuring the rapid and continued availability of "non-clinical" contraceptives. The initial distribution rounds saturated the area and provided a first acquaintance with the concept of contraceptives and an opportunity to begin their use. The intimate nature of the association between the LVWs and the eligible women, combined with the ever-present supply of pills and the supervision and record-keeping of the FAs (reinforced and cross-checked by the quarterly prevalence surveys), provided no opportunity for a break in the distribution system. The failure of the system to stimulate a broadening of the user base, or even to maintain the initial prevalence rate of use was, therefore, a fully adequate test of the hypothesis that availability alone will result in a demographically significant use of contraceptives. The critical deficiency appears to have been a high prevalence of side effects from the pill, particularly dizziness, which were not addressed by the low-status LVWs, resulting in six month continuation rates as low as 44.5% for early acceptors and 25.2% for later acceptors.

Because the 13% prevalence rate was considered to be insufficient, the project has changed to a Modified Service Delivery System (MSDS). This differed from the CDP in three important characteristics: (1) the level of training and social status of the LVWs was greatly elevated; (2) the range of contraceptives available in the program was substantially broadened (with domiciliary distribution of Depo-Provera and foaming tablets, and greatly increased emphasis on provision for sterilization and menstrual regulation), and (3) the introduction of medical services, both supportive for contraceptors and, later, for general maternal and child care.

The MSDS was initiated by training activities in October 1977, the beginning of intensified contraceptive services occured in November, and the gradual introduction of other medical services began in March 1978. The MSDS area, with approximately 80,000 population, was divided into four Blocks, each with a sub-center (of the Matlab Bazar Health Center) staffed by a well-trained Lady Family Planning Visitor (LFPV) and a male Senior Field Assistant (SFA). The LFPV performs IUD insertion and menstrual regulation at the

sub-center; holds daily clinic primarily for relieving the complaints of contracepting women; provides training, technical assistance and support to the field FVWs, including a weekly meeting at the subcenter of all FVWs; does spotchecking of the work of the FVWs; and makes referrals to and provides follow-up from the main Health Center for sterilizations and for women with serious problems. The SFAs are responsible for direct supervision of the FVWs, for working with males for family planning promotion, and for collecting and recording vital events as obtained from the FVWs.

The FVWs were locally recruited younger married women with seventh grade minimum education and, preferably, were contraceptors themselves. Each is responsible for about 1,000 population, usually one village. She carries a kit containing pills, condoms, foaming tablets (from July 1978 onward), and Depo-Provera and injection equipment. She also carries other medications as they are introduced into the health care component. (See separate description.) She visits each household fortnightly to: (1) complete records of pregnancy and menstrual events, contraception, and diarrheal disease incidence (on forms covering a period of three months, constituting the quarterly records for headquarter's compilation and analysis) and making notes of vital events, migration, and marriages for reporting to the SFAs, (2) promote new FP acceptance and supply continuers, (3) provide counseling, support, treatment and/or referral to the sub-centers of contraceptors with side effects, and (4) provide those medical services which have been introduced into the program, including instruction of those village women who serve as volunteer depot holders for oral rehydration.

The effect of the MSDS was a prompt and continuing rise in contraceptive prevalence. The total rate was 16.3% in January 1978 and 36.3% in December, with an increasing percentage recorded each month, and no peak yet reached. Particularly noteworthy has been the increasing popularity of injectables and tubectomy. The percentage of each FP method in use by the 4,839 women who were current users in December 1978 were: injectables - 50.5, pills - 17.5, condoms - 8.9, IUD - 2.7, tubectomy - 15.0, vasectomy - 0.2, foaming tablets - 3.3, and "others" - 1.8. Based on limited personal observation in the field, the Evaluation Team has no reason to doubt the accuracy of these records, or the fact of the intensive effort made to promote the use of contraceptives and to make them readily available to all who will use them. The VFWs contacted by the Team at random appeared to know each eligible woman as an individual, and their supply kits were well stocked. On the other hand, village women contacted at random uniformly confirmed the FVW's record. Variation in user rates among villages, from about 25% to 50%, appear to be related to their social

characteristics (e.g., religious conservatism) rather than to FVW effort.

The companion program for follow-up in support of contraceptive continuation appears to be equally satisfactory. The Evaluation Team saw many evidences of the cordial relations between FVW and villagers, suggesting that they are accepted as advisors and that their approach is solicitous and effective. Anecdotal statements and subcenter records indicate that women needing care (for contraceptive side effects and for circumstance of pregnancy) prefer to wait for the visit of the FVW to the weekly subcenter meetings in order to accompany the latter. The actual care provided at the subcenters is largely palliative, but appears to satisfy the needs of the great majority of women with contraceptive side effects; many of those with intractable problems switch to another method of contraceptive rather than drop out of the program. There appears to be widespread satisfaction with injectables and a continually increasing use of tubectomy; these two most effective methods constituting nearly two thirds of family planners throughout 1978.

In summary, the project appears to have been successful in assuring full availability of the relevant contraceptive supplies, both in the old CDP phase and the new MSDS, and in delivering fully adequate follow-up, supportive service in the MSDS. It must be noted, however, that this experience has been flawed as an experimental test of the hypothesis that full availability alone will meet a latent demand for family planning. Not only were the two phases not concurrent, but they were subject to the influence of multiple variables; i.e., (1) the range of methods was substantially greater in the MSDS, (2) the social status and training of the FVWs was substantially greater in the MSDS, and (3) the MSDS incorporated, gradually, a set of MCH services which, although they are in part directed to non-contraceptors, may have improved the general character of the relations between program and the people.

NOTE ON THE MEDICAL SERVICES (MCH) COMPONENT (and CRL-AID misunderstanding).

The concept of integrating MCH and FP services was incorporated into the modified program (MSDS) from the first drafts of the proposal in the Spring and Summer of 1977. The detailed statement of which MCH services were to be adopted, and when, changed over the course of time, however, and such services were phased into the program prior to formal agreement between CRL and AID. Expansion of the range of MCH services continues to this date and is projected into the future.

Since documentation of what was proposed, what already has been put into place, and what is projected is either non-existent, lacking in detail, or contradictory, it is perhaps best to start with a description of what actually was done in 1977-1978, based on conversations with program staff and Evaluation Team observations. Sequentially presented, selected major events were:

1. The new cadre of higher-status FWVs was recruited during September 1977, and their training was initiated in October. A formal training program of two weeks duration was conducted simultaneously in the four Blocks of the MSDS area, at the site of the subcenters-to-be. The trainers were the subcenter SFAs and/or LFPVs, who had previously been trained by CRL physicians. This training period was devoted exclusively to the basics of reproductive physiology and pregnancy management and delivery. This formal training has been reinforced and expanded by formal and informal, on-the-job training one day each week ever since; conducted by the LFPVs, with the frequent participation of CRL physicians, at the regular subcenter meetings.

2. The FWVs began their work in the field in November 1977, limited to family planning recruitment, delivery, and follow-up activities.

3. In March 1978, training was initiated on prenatal, delivery and infant care topics, and educational MCH activities were immediately started. The subjects covered, in this training and in these activities, included; (1) household sanitation and personal hygiene relative to delivery, (2) prenatal nutrition, and (3) infant nutrition, principally the practice of early supplementation of breastfeeding with other foods such as powdered rice gruel.

4. In June and July 1978, supplies of tetanus toxoid were received, stored under refrigeration at Matlab, and delivered in a cold chain through the subcenters to the newly trained FWVs for inoculation of pregnant women.

5. In October and November 1978, supplies of iron tablets were received, and training was given to the FWVs for their use by pregnant women from the sixth month until delivery. Administration is started earlier in cases of clinically obvious anemia.

6. In October and November 1978, training was given in the use of saline-sugar ("gur") solution, in the

home via a depot holder in each Bari, for rehydration of therapy of diarrheal disease patients. Initiation of this program was in December 1978 and January 1979 and is still continuing.

7. As they became available during 1978, the following medications were placed into use at the subcenters for the management of intermenstrual bleeding and for the largely palliative treatment (primarily for contraceptive users) of certain other common conditions: calcium tablets (and contraceptive pills) for bleeding, triple sulfonamide tablets for tubectomy wound infections, "ascapan" for ascaris infections, scabicidal ointment, cough mixiture, aspirin, iron tablets, and multivitamins. Also available on the prescription of a physician at the weekly meetings are pencillin, tetracycline, and an amoebacide, "flagyl", for vaginal trichomoniasis.

8. During the next six months it is anticipated the infant care services will be expanded by training for the administration of D-P-T vaccine (first as a mass program and then as a routine) and for the treatment of pneumonia. Measles vaccine has been considered for use but is probably not feasible under Matlab Bazar Thana field conditions.

As indicated above, documentation of the MCH activities is confused by a variety of discrepant descriptions, prepared prospectively and retrospectively over the course of the past year and a half. Because the termination of AID funding for this project was based on this issue, it may be of some use to reveiw briefly the history of these proposals.

Shortly after Dr. Moseley's arrival at CRL in the Spring of 1977, he set about reveiwing the CDP project and concluded that modifications should be made. Among the changes he suggested, in a letter to Dr. Gary Merritt dated June 6, 1977, was the "linkage of our outreach efforts in fertility control with our proposed outreach efforts in simplified management of diarreal diseases." In response, a cablegram from AID/W in July indicated agreement that training for and the delivery of simple health services, such as oral rehydration for diarrhea, was an appropriate change to be made in the existing contract (among other changes).

Plans were apparently promptly undertaken to modify the project and, as indicated above, activities were started with the recruitment and training of the new cadre of FWVs in September and October. Simultaneously, or shortly thereafter, the project group at CRL was preparing a new contract proposal which would have taken effect October 1, 1977, and had a lifetime of three years (thus incorporating the last year of

the existing contract), and which included the MCH component. The draft of this proposal was modified internally in response to CRL Research Reveiw Committee objections on scientific and ethical issues, but finally received limited committee approval on June 19, 1978, for a period until September 30, 1978. Parenthetically, this temporary approval was never extended by the CRL Research Committee, and has not yet been given to the later AID and UNFPA proposals (see below).

The last draft of the October 1, 1978, - September 30, 1980, proposal, dated February 27, 1978 (well after the MCH program had started) describes the MCH services to be provided as follows:

> "Maternity Services: (a) provide antenatal education to all pregnancy (sic) women; (b) vaccinate all pregnant women against tetanus and provide iron-folate supplementation when indicated; and (c) refer high risk pregnancies or those with complications to either the CRL Matlab facility or to the Government's Chandpur Subdivisional Hospital."
>
> "Child Services: (a) vaccinate all children with BCG, smallpox, and D-P-T; (b) encourage breastfeeding and timely and adequate food supplementation of children; (c) provide vitamin A and D and iron-folate supplements, when appropriate; and (d) provide symptomatic therapy such as analgesics, antipyretics, and cough syrup for specific illnesses. The provision of measles vaccine, antibiotics for respiratory illness, and oral rehydration will be considered in coordination with other research programs."

The phasing in of these activities was not projected, but the training of FVWs was to consist of a six week formal course, followed by fortnightly half-day sessions at the subcenters.

While MCH activities were actually being started as described above, although their exact nature was apparently not understood by AID/W, plans for contract negotiation were changed and a new proposal was prepared to cover the two year period October, 1978-September, 1980, thus permitting the old contract to run its course with the third year devoted to the MSDS. This proposal was dated April 7, 1978. Following the statement, "The specific activities that are proposed during this continuation period and the specific objectives to be accomplished are as follows: ...," the MCH services to be provided are given as the following:

> "Maternity related preventive health services. During the latter part of the current fiscal year and in the next fiscal year, the FVWs will (Team underlining) be

trained to provide certain preventive services and information related to maternal health care. The FVWs will be given training so they can guide mothers on proper practices relating to nutrition during pregnancy and lactation; appropriate hygienic practices during pregnancy, delivery and the neonatial period; and appropriate nutrition practices for breastfeeding and weaning children. The FVWs will be taught to detect certain anticipated complications at pregnancy, such as pre-eclampsia, and provide simple treatment where possible or, make appropriate referral. Tetanus toxoid will be made available in the antenatal period as well as vitamin and iron supplementation where indicated."

"Infant and child realted services. These services will be initiated in the next fiscal year. These, again, are primarily focused on preventive measures and effective treatments for life threatening conditions. The FVWs will be given training to provide the mothers appropriate guidance relating to infant and child nutrition. D-P-T immunizations will be made available. Mothers will be given instructions regarding oral rehydration for the management of diarrhea. Families will be given instruction for appropriate management of chronic infestations such as intestinal parasites and scabies. Specific therapy will be provided for life threatening illnesses such as antibiotics for pneumonia."

Although the fiscal years referred to are unclear, the activities are projected into the future, despite the fact they were well under way. This caused a serious problem when AID/W disapproved the proposal in a cablegram sent in May, 1978. AID objected to incorporation of this extensive program of health services because it would not permit observation of the simple effect of expanding FP services and follow-up activites. Dr. Mosely promptly responded, in the same month, by withdrawing the AID contract proposal, saying that AID/W had failed to recognize, or was insufficiently sensitive to, the social, political, and programmatic realities in Bangladesh which would not permit the separation of FP and MCH. He also disagreed personally, on conceptual and ethical grounds, that the two should be separated.

At the minimum, this unfortunate episode indicates a tragic failure in communicating from Dacca to Washington the program plans and activites, and the social context in which they reside, and from Washington to Dacca the limits to program flexibility permitted a contractee. Since program commitments had progressed too far to be turned back, a break was inevitable.

B. What is the quality of the data? Have birth rate measurements been accurate or at least replicable?

There are essentially four data gathering systems in operation in the Matlab area. These are: 1) The Vital Registration System (Demographic Surveillance System), 2) The KAP Surveys, 3) The Prevalence Surveys, and 4) The Service Statistics. Each system, however, has been changing over the life of the project. In addition, there have been several special purpose surveys.

1. The Demographic Surveillance System

The DSS is essentially a vital registration system with intensive search for events. The system functions largely outside the CDP and, indeed, existed for many years before the CDP. The system dates back to 1966 and was an adjunct to the Cholera Surveillance System. Under the old program, the CRL hired a woman to hunt out births, deaths, migration as well as cases of severe diarrhea within each village. These women, called LVW or Dais, were normally of low status and illiterate. The reported any event which they found to the Field Assistant (FA) who actually registered the event.

Close field work, including several cross-checks as well as the favorable residential patterns in the area, has allowed the DSS to achieve remarkably good results. Because of the extensive flooding during the monsoon season, the population live in small raised "islands" called baris. Each bari consists of a few (usually around four) related families. With the exception of the gypsy boat people, who are excluded from the system, all the population lives in baris. Monitoring vital events, then, consists of monitoring the changes in each bari.

The central control over the system is the Family Census Record based initially on the 1974 Matlab Census. Copies of this are found in Dacca, Matlab Bazar, as well as within each bari. For each family in the bari, and each individual within each family, the Family Census Record records the name, age, sex and indentifying number. During the monthly visit, the FA inquires about any changes in family composition. Since the baris are both relatively small and distinctly demarkated, the information is relatively easy to gather. Furthermore, the Dais has been making daily inquiries and when she finds an event either noting it herself or having someone note it for her.

The FA fills out a vital event report (birth, death, migration) and enters the events in the Family Census Record Card. He then signs the card. This provides an administration check. Three times annually, each household is visited by the Senior Field Assistant, who checks both for missed events and the record of the FA's visit.

Every two weeks, the FA turns in the event records, which are checked by two coding clerks. Incorrect or incomplete forms are returned to the FA to be corrected in the field. Each month, the event forms are sent to Dacca for coding, punching and processing. They are sent under lock and key with administrative records kept to prevent possible loss of completed forms. A computer print-out is returned from Dacca to the field, so that checks can be made there to prevent misplaced, lost or double-counted forms or events.

Recently, the system has been changed somewhat. The illiterate Dais have been replaced by Female Village Workers (FVW) who visit the households every two weeks. In the MSDS area, these FVW are the same women in charge of Family Planning Service and health delivery. Being educated, they are able to maintain much better records than the Dais, and there seems to have been no loss of completeness by changing from a daily to a fortnightly visit.

The DSS is described here in some detail because we feel that it is at the very heart of the data gathering system and that it is of unique quality and value. The data generated by the system are a tribute to the attention and care given in their collection. Furthermore, thanks to the work of Drs. AKMA Chowdhury and Lado Ruzicka, the methods, procedures and results of the DSS are well recorded. These are published in a series of five working papers.

Although a complete demographic analysis is not possible here, a few observations should suffice. In any vital events system, infant mortality, especially early infant deaths, are the most difficult to pick up. However, the Matlab system recorded an infant mortality rate (1975) of 174, of which slightly more than half were neonatal. Given the pattern of infant and childhood mortality, it is most improbable that the neonatal rate was much above 85, that is, it is improbable that early infant deaths were systematically missed.

Given the success in catching early infant deaths, it is probably true that nearly all births were registered. Birth rates are then, at least, approximately correct. Some difficulty arises in estimating the denominator - the population at risk. There seems to have been some slippage in the estimate over time due to unreported migration, and the transfer of women with marriage. This problem was made

worse with the exclusion of the outlying regions in 1978. Migration between these and the current area had been treated as internal to the system. It is doubtful whether these effects have an important effect on the Crude Birth Rate. It can and does lead to problems in estimating Age Specific Fertility rates, and this has created some problems in the analysis.

2. The KAP Surveys.

The next data gathering system is the KAP surveys. Four of these have been done, although there are tremendous differences between them. Unlike the DSS, the KAP surveys are specifically set up as part of the CDS. The first KAP was done in September, 1975, as a baseline survey for the CDP. The survey was carried out by Ray Langston from the University of Michigan. It used a 27-page questionnaire and was designed along classic KAP traditions. Interviewers from outside CRL were used. The sample size was 1,200 women, including both the distribution and the control area. These data have been edited, punched and validated. A copy of this data was taken to the University of Michigan by Mr. Langston. At CRL, it is unknown what stage the analysis has reached. There have been no comprehenseive publications.

A second KAP was concluded by Mr. Langston in April 1977. It was along the same lines as the first KAP and the same sample. The principal difference being that it included questions relating directly to the CDP, for example, asking about contact with Dais or the FAs. This data is now being validated by Mr. Langston at Michigan. There have been no publications. Both these surveys related to the old CDP program.

Shortly after the new CDP was instituted, a new "baseline" KAP was done (Dec. 77). This included all the women in the MSA. Interviewing was done by the FVWs. This was a much shorter KAP, consisting of only two pages. Page one asked a few demographic questions (age, occupation, date of last live birth, etc.). Page two asked several straightforward KAP questions (What methods have you heard of? What method are you currently using, etc.?). As this survey included all women in the MSA (some 13,000), a 20 percent sample was drawn for analysis. Analysis of these data has been done and written up as a working paper by Dr. Osteria and others.

A fourth KAP was conducted in October 1978 termed RKS-1-B. This utilized the same two page questionnaire and methodology as the first RKS-1 survey. No tabulation or analysis has yet been done. Again, no data were gathered from the control areas.

3. Prevalence Surveys.

As a part of the old CDP, prevalance surveys were conducted quarterly from December, 1975, through May, 1977. This was a simple survey only asking a few questions, such as "Did you use contraceptives?" There were no prevalence surveys from May, 1977, until after the beginning of the new program. Thus, there is a six month gap (June through November, 1977). During this period no family planning data was gathered. It is most unfortunate that no information on the last part of the saturation program was collected. Later service statistics suggest a further deterioration in the prevalence rates.

With the change to the intensive program, a new type of fortnightly survey was instituted around December, 1977; the RKS-2. This is done by the FVWs who file the forms every three months. Data on menstrual/pregnancy status, contraceptive use, and, where applicable, data on the outcome of pregnancy, side effects complaints or reasons for discontinuance or method shift is gathered. These data are used primarily for program monitoring and the calculation in the field of prevalence rates. Some of these data have been tabulated by hand and incorporated in working papers in terms of continuation rates, etc. The computerization has been slowed by coding problems which now seem solved. Much work remains to be done. However, the data seem to be accurate and the document is complete and is a valuable record of the fertility processes of the population.

4. Service Statistics.

Under the CDP, service statistics were almost totally lacking. Contraceptives were handed to anyone who would receive them without question as to possible use. This was by design.

Under MSDS, records are kept by the FVW about who uses which methods. These are kept by the FVW in a notebook she carries with her. Further, clinical records are kept relating to sterilization and menstrual regualtion. Handtallies are produced by method and calendar month of contraceptive acceptors, current users, as well as dropouts. To a large extent, however, this is not an independent system from the RKS-2 since the FVW gather both sets of data.

5. Special Surveys.

In addition to these ongoing systems, several special purpose surveys have been carried out: (a) Oral Contraception Side Effect Study, April 1976: (b) Special LVW Utilization Study, February, 1977; (c) Special Knowledge and Use of Condom Study, February 1977; (d) Follow-up of Gov. Sterilization Campaign in Matlab, March 1977; and (e) Special Injectible Acceptors Study in six villages, August 1977.

The side effects study (a) looked at the dizziness and other problems which were causing high droupout rates in the initial states. The LVW Utilization Study looked at which characteristics of the Dais were most important in predicting program success. The Condom Study included an intensive effort by the (male) FA to persuade husbands to use condoms. Follow-up surveys concluded that little impact was made. In early 1977, the regular govenment family planning program conducted a sterilization campaign. The CRL staff conducted a follow-up survey to learn more about the characteristics of the acceptors.

The Special Injectible Acceptor Study deserves special note. Early in the staturation program, it was felt that the mix of contraceptives made available was inadequate, and that a higher prevalence rate could be achieved simply by offering alternatives. Six villages were selected for this study. In these villages, injectibles were available, to be given by the male Senior Field Assistants. A follow-up survey was conducted in August 1977. The principal finding was that injectible contraceptives were considered extremely popular by the village women. This result was given large weight in planning the MSDS.

OVERVIEW

It is our opinion that the quality of the individual data sets is probably good - and for some of them, i.e., the DSS, the quality is exceptionally high. However, the full value of the data will not be achieved until the various components are computerized and, later, linked to each other. This is, indeed, a large job for which, at the present time, CRL has neither the manpower nor computer facilities.

C. What has been the quality of the analysis of the data? Was the analysis appropriate to the objectives of the project?

The CDP had basically four analytic objectives. These

were to assess: (a) the feasibility of organizing and implementing a household delivery system of contraceptives; (b) the total demand for these contraceptives; (c) the demographic impact; and (d) the cost-effectiveness of such a system. It seems appropriate, the, to discuss the analysis along these lines.

1. Feasibility.

Analysis of the experience of organizing and implementing the delivery system has been presented in several papers. The research staff has gone to considerable effort to discuss and document the programmatic aspects of their work. These reports were turned out on a timely and continuing basis so as to have maximum impact on the CDP field strategy.

2. Demand for Contraceptives.

Really coupled to, and often inseparable from the feasibility analysis, has been the analysis of the demand for contraceptives. Indeed, perhaps the major research finding so far has been that the demand for contraceptives is not an abstract quality, but is highly dependent on the delivery system. On the other hand the analysis has been somewhat simplistic. Principal emphasis throughout has been on the crude prevalence rate; i.e. the number of users at any time. Other measures, such as continuation rates, have been calculated but have received much less attention. Some simple analytic procedures, such as refining the concept of women at risk of using contraception so as to exlude pregnant women, have not yet been done.

The analysis of the KAP surveys leaves much to be desired. Only a few tables from the 1975 baseline KAP have appeared. To our knowledge, there are no plans to analyze how the desires express in 1975 translate into contraceptive demand. Analysis of the April, 1977, KAP is completely lacking. Some tables, however, have been produced and discussed concerning the December, 1977, KAP.

3. Demographic Impact.

The unique advantage of the Matlab area for a family planning pilot project is its vital events reporting system. This system, coupled with special surveys and service statistics, allows for detailed and sophisticated analysis of the demographic

impact of the family planning project. Unfortunately, this advantage has yet to be adequately utilized.

The original study design had a "control area" and a "saturation area," each of 120,000 population. As modified in October, 1977, the program had a "control area," a "continued saturation area," and a "modified services area"; each of 80,000 population. With the September, 1978, modification, several outlying areas were excluded from the study area. Contraceptive distribution was dropped in the "remaining saturation area" which was combined with the "remaining control area" to form a new "control area," now with total population of 80,000. While at no time were the control and test areas strictly and scientifically randomized, they are sufficiently similar to allow meaningful comparisons.

Under the assumption that little socio-economic change was likely to occur in the Matlab area, the original design called for time series analysis. The severe famine which occurred in Matlab in 1975, however, makes trend analysis very difficult. The data system is certainly adequate, however, to allow other approaches to the problem; such as standardization, couple-years-of-protection, (CYP), components analysis or regression analysis. Data from the RKS-2, when analyzed, can allow for interesting and meaningful simulation analysis. So far little of this potential has been tapped.

Basically, only three papers have addressed this issue. Douglas Huber presented a paper to the IUSSP which addressed the demographic impact by comparing age specific and parity specific fertility rates in the CDP and counted area. We believe that this is a good paper which makes an adequate start in the analysis. Its chief disadvantage is that, since it was written in early 1977, it analyzes the data only through December, 1976.

A paper specifically on the demographic impact was prepared by Osteria, Mosley and Chowdhury. This paper used a case-control method, matching acceptors with non-acceptors - both within the old saturation area. The paper used life table and interval analysis to assess the impact of the program. This paper is still in draft form and suffers from several unresolved methodological problems. Again, only the impact of the old program is addressed.

A recent draft paper by Osteria and others addresses the demographic impact through period analysis. It makes use of quarterly age specific fertility rates in the control and saturation areas, as well as the rates of births between them. Although the paper is extremely short (6 pages of text) and exists only in draft form, it does constitute a beginning to the analysis. Again, only the old program is looked at.

One must note, however, in the CRL defense, that an adequate analysis of the demographic impact of any program cannot be done until that program has been in place for at least two or three years. Since the new program was started in November, 1977, one could not expect to detect any demographic impact before September, 1978, and many more months of experience would be needed before the trends could be interpreted. Thus, one cannot fault the project for not having tackled the new program.

4. Cost-Effectiveness.

So far, two attempts have been made to address the cost-effectiveness of the project. One attempt was made for the first six months of the saturation project. This used "active users at three month" as the measure of output. More recently, Douglas Huber has addressed the question in a draft paper. Using "couple years of protection" (CYP) as his measure, he compared the costs for the old saturation program, the six-village project, and the new project without and with health services. Only salaries of field personnel and commodities were included. We will address the substantive issues in a later section. Suffice to say that the program organizers have given this issue litte attention, either in their planning, record keeping, or reporting. Yet, it remains a key issue in addressing the success or failure of any pilot project in Bangladesh.

## OVERVIEW

The analysis so far has largely been in the form of drafts and working papers. Many of these contain methodological, tabular and, in some cases, arithmetical errors which remain to be corrected. Few finished papers have been published or submitted for publication. This is especially troublesome as many of the authors no longer work for CRL. Dr. Osteria is, of course, the most prominent of these. There are no clear plans to finish the papers which have been written. As far as plans for future analysis, it is hoped that the formation of a CRL Working Group on Population, which has taken place, will help. This group has begun to outline population related research activities at CRL.

It is our opinion that one adequate strategy would be for CRL to pull together the various working papers into a single volume to be published in-house, and also given wide international distribution. Possible funding could come from AID. Such a volume would insure a more systematic

treatment of the project as a whole, would allow international dissemination of the accrued knowledge, and would avoid the often considerable delays inherent in publication in international journals. Furthermore, the publication of such a volume need not preclude the publication of some of the articles in the international journals when appropriate.

D. What has been the cost-effectiveness of the Project?

In evaluating any program in a poor country, such as Bangladesh, its cost-effectiveness must take a prominent role. This issue takes on a special importance with respect to the CDP. The initial program had a low cost but seemingly achieved low effectiveness. This was replaced by a much higher cost project which so far seems to have achieved a higher effectiveness. As there exists much controversy at CRL over this issue, we will discuss the problems in some detail.

In evaluating the cost-effectiveness of the CDP, several difficulties arise. They are (1) measurement of output, (2) measurement of good and bad byproducts, (3) allocation of indirect costs, and (4) correct pricing of inputs. We shall address these in order.

1. Measurement of Output.

Several measures of the output of family planning delivery systems are possible:

a) The number of acceptors might be useful for "quick-and-dirt" calculations, but are inadequate for serious analysis. A program, at least in the early states, could have a high number of acceptors, but have a high drop out rate as well. Such a program would not only have negligible effect on fertility, but would be doomed to long-run failure.

b) Prevalence rates and CYP are of course related in that, in a steady state, the prevalence rate would be the CYP divided by the eligible women. Of course, neither program reached a steady state so that the evaluation of CYP implied by the prevalence rate at a point in time is rather arbitrary. Besides that problem, the two concepts focus on two different facets. CYP focuses on total output which can be attained with a given budget. Prevalence rates imply maximum output in any given population. Disagreement at CRL exist on which of these is proper.

c) But even CYP can lead us astray. Demographic impact depends on who accepts, i.e., the age and parity breakdown. And, it depends on how long they stay in the system. Twenty-four women on the pill for one month will

not have the same impact as one woman on injectibles for two years. Proper analysis focuses on some measure of births averted. Or, equivalent to prevalence rates, it focuses on the impact on total fertility.

However, as noted earlier, sound analysis of the demographic impact of this project has been lacking. Without a good measure of output, discussions of cost-effectiveness are difficult.

2. Measurement of Good and Bad Byproducts

The second issue concerns the measurement of both good and bad products of the system. The new CDP has embarked on a health program as part of the system. Presumably, this will have an impact upon both acceptability of family planning and on maternal and child health. While it is possible to only allocate part of the cost to FP, many here insist on judging the system as a whole. A different problem is judging the bad effects of a FP system. Each woman who has taken contraceptives, had side effects and dropped out again, is now immunized against further family planning proselytization. These unfavorable side effects were presumably of greater importance in the old program.

3. Allocation of Indirect Costs.

The proper allocation of indirect costs is, of course, a problem not unique to the CRL project. It arises in almost every cost-effectiveness analysis. The CRL-ODP, of course, has a strong research component integrated into every level. The director does administrative work and writes research papers; the FVW and the Dais both gave out contraceptives and gathered demographic data. One solution to this is to only allocate direct costs - commodities and field personnel. But since both programs, especially the new one, are not possible without the dedicated CRL professional staff, these must all be underestimates.

4. Correct Pricing of Inputs.

The correct pricing of the inputs is also difficult. Many commodities, for example, are provided "free" to the project. With inflation, the salaries of the Dais in 1976 are not comparable to the salaries of the FVWs in 1978 unless adjustment is made. One can argue that to the extent these women were unemployed or underemployed in the villages, their economic costs is lowered. On the other hand, one might argue that in a country with a lack of middle level personnel, the economic costs of the dedicated CRL staff should be set higher--especially if one were considering expanding the project on a larger scale.

This rather lengthy introduction was necessary before we look at the cost-effectiveness analyses done by Douglas Huber. For although he should be given due credit for at least attempting an analysis, there are many shortcomings in his paper.

Huber's paper is a comparison of the CDP program in its four manifestations:

- Simple Pill and Condom Distributuion (Saturation Program).
- The above plus Injectibles (6 Village Study).
- All Methods and Intensive Field Work (MSDS at 6 months).
- The above plus Medical Treatment (MSDS at 10 months).

Huber uses CYP as his measure, which he calculates simply as the prevalence rate at a point in time, times the women at risk. That is, he assumes a study state. Huber recognizes but ignores this weakness. He ignores all good and bad by-products.

Huber not only exludes all indirect costs, but also excludes some direct costs, such as training, transportation, central clinical facilities and contraceptives. He focuses only on field salary costs and an approximation for the costs of medications under "D". He attributes only part of the costs of the field staff to the CDP. For example, 25% of the Dais costs were for CDP and 75% of the new FVW are attributable. No adjustment is made for inflation. The results he gets, however, are interesting:

| | Huber $/CYP | Rahman |
|---|---|---|
| Simple Pill and Contraception Distribution | $ 2.30 | $ 4.25 |
| The above plus Injectibles | 3.40 | 8.10 |
| All Methods plus Intensive Field Work | 6.39 | 6.68 |
| The above plus Medical Treatment | 6.70 | 6.01 |

That is, he makes a prima facie case that the old saturation program was more cost-effective than the MSDS. His calculations have been much in dispute. Makhlisur Rahman has recalculated

the costs using the same assumptions but a different salary schedule; that is, using the 1977-78 salary structure for all four programs. The relative advantage of the saturation program is diminished. There has also been some argument as to the proper allocation of field personnel's time and inclusion of commodity cost, but without really shedding much light upon the subject.

Criticism was also leveled at Huber by Rahman for having used CYP without taking into account the effectiveness of the methods used and continuation rates. We might also mention age and parity distribution of the acceptors. These questions will only be sorted out properly when the analysis of the demographic impact is complete. This analysis is likely to further erode the relative advantage of the saturation program.

Huber's paper is based only on the salary structure of the basic field workers. All supervisory costs and clinic costs are omitted. Inclusion of these costs is likely to increase the costs for the saturation program. This is because the old program was designed to include only the minimal supervisory and clinical support. The new program includes weekly meetings of the staff with Dr. Bhatia as well as clinical procedures such as tubectomy. In both cases, inclusion of the supervisory and administrative (but not research) costs are likely to increase greatly the costs of both programs. As noted elsewhere, the success of the CRL project seems to depend on the tight control of the field work, the great support given to all levels of workers, and the dedication of the senior staff. Unfortunately, these advantages do not come cheaply.

E. Which elements of the existing data set are most appropriate for study? What are the most important questions to answer?

As noted earlier, large amount of high quality data has already been gathered. The possibilities for analysis seems almost endless. Listed below a number of directions which look productive, however, other researchers could no doubt suggest other directions.

1. The most promising area for analysis, and the one demanding immediate attention, concerns the impact of the family planning program on fertility. Several lines of analysis are now standard in the literature. These are:

- Decomposition of CBR change.
- Experimental and Control areas Analysis.
- Correspondence Between Program Activity and Fertility Change (Time Series Analysis).

- Matching Studies (Individual and Areas).
- CYP/Components Analysis (Births Averted Among Acceptors).
- Regression Analysis (Individual and Areas).
- Computer simulation.

While it is unlikely that each of these would prove equally fruitful, the existing data set seems to permit all seven approaches. Few family planning programs exist anywhere which permit such an extensive analysis. There exists extremely few family planning projects with a control/impact design. This constitutes the most immediate research objective. It is, by the way, noted in the program's original objectives.

2. Although the analysis of the project on fertility is the more striking, analysis of its impact on maternal and infant/childhood mortality should not be overlooked. Methods similar to the fertility analysis could be used. However, since the new program contains a substantial MCH component, it will be difficult, if not impossible, to separate this effect from the effect of family planning services.

3. Much greater analysis should go into the KAP surveys. Firstly, a more detailed analysis of their findings must be produced. A study of both programmatic and methodological interest can be done by matching the KAP records for subsequent contraceptive usage and fertility. This study would shed light on the interpretation of KAP surveys in general, and allow for better targeting of FP services based on other KAP surveys. All women carry an identification number, so matching need not to be burdensome.

4. A most important area of analysis, one which we have already discussed, is the cost-effectiveness of the programs. (See question D).

5. Further analysis of the characteristics of the acceptors is in order (although much of this is covered earlier) Socio-economic characteristics of the acceptors need further attention. Comparative follow-up of charts of acceptors in the old and new programs, especially noting reacceptors, should be done. Analysis of the acceptability of the methods, and reasons for dropping out can be done from the existing data sets.

6. There exists a wide number of important research topics which could be addressed using the existing data but which, strictly speaking, would not be part of analysis of the CDP. The menstruation-preganancy=lactation records kept as part of the RKS-2 could form a sound basis for the analysis of the fertility process. Data from the KAP surveys permits the calculation of fertility and mortality rates using

standard indirect techniques. Since the vital events system allows direct estimation, a valuable check on the accuracy of standard demograhic analysis is possible. These are just two examples of the methodological analysis made possible by these data.

F. Does the CRL have the resources to analyze the current data set adequately in a resonable length of time?

It is clear that at the present time the CRL does not have adequate resources to analyze the data. The biggest constraint is manpower. With the recent departure of Dr. Osteria the situation has become critical. A list of the available manpower will highlight the problem.

Dr. Atiqur Rahman Khan, co-director of the DCP, has heavy duties in his capacity as director in the Ministry of Health and Family Planning. It is doubtful whether he will be able to devote much time.

Dr. Mosley has, of course, heavy administrative duties as Director of the CRL. Also, he will be leaving in the next few months.

Dr. Bhatia is principally concerned with project implementation. Her training is as a physician, although she has recently completed 11 weeks training in demography at ANU.

Dr. Stan Becker is a fully trained demographer and would be capable of analyzing much of the data. However, he is currently able to devote only approximately 20 percent of his working time to the project.

Dr. Lincoln Chen is Scientific Director of the CRL, and is in charge of the population program. So far he has not taken part in the analysis of the CDP. It is likely that he will have a heavy administration load with the departure of Dr. Mosely.

Mr. Makhlisur Rahman is available on a full time basis for the processing and analysis of the data. It is doubtful however, that given the small amount of support he is now getting, that he could begin to process and analyze the data. He is trained as a sociologist (MA).

Mr. J. Chakraborty is supervisor of the MCH-FP project. Although he has been drawn into the analysis of some projects and is widely respected as an able person, his principal expertise is in the implementation and supervision of field activities.

Coupled with the lack of analytic manpower is a lack of both computer programming manpower and computer services. Currently, only Dr. Becker and, to a somewhat lesser extent, Mr. A. I. Chowdhury have programming ability. Yet, the translation of the mountains of raw data into interpretable tables constitutes a major roadblock to analysis. Furthermore, the computer time available to CRL through the govenment facility appears to be inadequate for the timely analysis of the data. On this front, however, progress is being made. Steps are now being taken to buy a computer for CRL using the funds from UNFPA.

G. Should AID consider supporting further data analysis either within CRL or independently?

Since it is clear that CRL lacks sufficient resources to analyze the current data set adequately, the question follows as to what should be done.

One possibility would be to arrange for the analysis to be done outside CRL. This must be rejected on several grounds. Not the least of these is that such a procedure would cause bitterness and ill feelings, which would far outweigh the benefits.

Practical reasons are, first, the data do not exist in a neat, unified whole, but consist of many bits in various stages of coding, punching and tabulating. It would be difficult for an outsider to make sense of the set, and it would be nearly impossible without the full cooperation of those already involved. Another reason for keeping the analysis at CRL is that the project is ongoing, and continues to produce more data. The full value of the existing data can only be achieved when compared with these new data.

AID should, however, consider supporting further data analysis within CRL. The most immediate possibility would be in allowing CRL to recruit a replacement for Dr. Osteria. AID/W should recommend this to AID/Dacca. It is essential that a demographer be brought in, and be brought in early, so as to influence decisions with respect to coding, validating and tabulating the data. We would hope that this person would be more senior that was Dr. Osteria. Anyone entering this late in the project is liable to run into great resentment if he conceives of the analysis as being primarily his own work, or insists upon (first) authorship of all papers.

AID/W has already offered to provide competent individuals to come to CRL to help with the data analysis. This offer should be renewed. If a senior analyst were found who would be accetable to CRL, AID should strongly support this.

However, it might be emphasized that the offer specifically includes help with the data processing. Given the current strained relations between CRL and AID, a data processor would be more likely to be mutually acceptable than someone with a more substantive interest, who might be accused of trying to steal the data. An assignment of 4 to 6 months would probably be sufficient to clear the backlog.

H. What generalizations can be drawn from the Project?

A number of very important generalizaitons emerge from this project, some of which are firm and others tentative, despite the fact that it is still not completed. They are:

1. Latent demand for contraception exists in the rural, traditional population of Bangladesh. KAP surveys, always supect, suggested that a significant proportion of the Matlab study area women desired to limit the number of children they might have in the future. That 69% of those approached in the first distribution of contraceptives in the old CDP area were willing to receive them indicated a willingness to consider acting on the desire. Since fewer than one-third actually became users for some period of time, the prevalence rate progressively fell. Therefore, the intensity of latent demand was, not surprisingly, shown to vary.

2. The overall structure of the family planning program (i.e., its staffing, its methods of service delivery, and the contraceptive techniques offered) significantly affects the acceptability of family planning. Since intensity of latent demand varies, it could be anticipated that more marginal demand can be met by a greater variety of contraceptive approaches, improved and expanded services, and a more supportive staff. This was strikingly demonstrated by the modified program--both in an area previously included in the CDP and in one previously in the unserved control.

3. The components of an improved system include higher status and better trained workers, frequent contact between FP workers and clients, supervision and support of workers, a greater contraceptive mix, and attention to side effects. Although the importance of each of these components cannot be evaluated separatgely in this project, because they were introduced together, in sum they worked, and intuitively they seem to be a synergistic mix.

4. An effective family planning program in rural Bangladesh can have a demographic impact. This conclusion must be tentative since insufficient time has elapsed to measure the demographic effect unequivocally. However, during the latest two or three months of vital records

collection, there has been a striking difference in the crude number of births as between the MSDS and control areas.

5. A family planning program can be effective in the absence of socio-economic development. This is largely a restatement of generalizations made above, but deserves separate notation. The Matlab area has not been exposed to any special modernizing influences, and certainly did not change in any noticeable way during the course of this project period. It is rural, isolated, and religiously and culturally traditional, yet its people have responded well to an effective family planning program.

APPENDIX A

UNITED STATES GOVERNMENT

# *Memorandum*

TO : DS/PO, Robert Meehan

DATE: December 18, 1978

FROM : DS/POP/R, James D. Shelton

SUBJECT: Scope of Work for Team Evaluation of Contraceptive Distribution Project, Cholera Research Laboratory (CRL) - Matlab, Bangladesh

A. Project Title/Number:

Matlab Contraceptive Distribution Study; 932-0617.

B. Contractor/Agencies:

AID/pha-C-1105 with the Cholera Research Laboratory, Dacca, Bangladesh.

C. Purpose and Rationale for Team Evaluation:

This contract ended September 30, 1978. This evaluation will, therefore, be a terminal evaluation. More importantly, the Office of Population considers this project to be unique in the area of operations research projects and the data generated to be particularly valuable. No other project has comparable information on births and deaths. Therefore, an important part of the evaluation will consist of consideration of future directions and potential support for the analysis of the existing data as well as potential further support of the project itself.

D. Composition of the Team:

The evaluation will require approximately two specialists with backgrounds in (1) family planning program evaluation, (2) the impact of family planning programs on fertility rates, (3) demography with emphasis on techniques for measuring vital events in developing countries, and (4) general public health, epidemiology, and population programs.

We propose the following for membership:

(1) Henry Gelfand, M.D., Epidemiologist, Public Health Physician, formerly Chief, Evaluation Section of the Office of Population and currently at the University of Illinois School of Public Health

(2) Howard Hogan, Demographer with Poplabs, Project of the University of North Carolina

E. Other Observors:

Representatives from USAID/B and the Ford Foundation may participate.

F. Dates and Places of Evaluation:

We propose a briefing in Washington on January 19, 1979. The actual evaluation would take place in Dacca and Matlab Thana, Bangladesh, between January 23 and February 2, 1979, including a USAID debriefing. It is expected that there will be an AID/W debriefing during the week of February 19, 1979, and that a Final Report will be submitted to APHA by March 2.

G. Cost Analysis:

To be determined by APHA (under contract AID/pha-C-1100).

H. Project Background: The contract was initiated on June 30, 1975.

Study Objectives: The original objectives of the project were:

1. To assess a household delivery system of oral contraceptives and condoms in rural Bangladesh in terms of:

   a) Feasibility of organizing and implementing such a delivery system.

   b) Total demand for these contraceptives.

   c) Demographic impact.

2. To determine the most inexpensive and effective delivery system and fertility control technology for use in developing countries.

Study Area: The study area of the project is Matlab Thana. This rural area has a population of 260,000 and has been the CRL's field surveillance area (FSA) for the last ten years. Vital events are collected on a continuous basis. For this study, the FSA was divided into a control and distribution area of roughly equal parts. Attempts were made to randomly assign communities to control and treatment areas, but this effort proved to be impractical.

The area is located approximately 50 miles from Dacca. Like most of the deltic region of Bangladesh, the area has numerous rivers and tidal canals. The area has only one road. Almost all communication and transportation is by country boat or by foot.

The population density of the area is 1,000 per square mile. The typical village has a population of 1,110 and each village has five to six baris of patrilineally related families. The population is predominately Muslim, but approximately 13 percent of the people are hindu.

Delivery System: In the distribution area, the delivery system was built around two types of field workers--Lady Village Workers (LVSs) and Field Assistants (FAs). Each village of the 150 villages in the distribution area has a LVW. There were eight FAs.

The training for the field staff was kept to a minimum. The LVWs were given six part/days training with one day of supervised field work. FAs received five days of training and periodic supervision in the field.

The household distribution began in October, 1975. All women of reproductive age (15-44 years of age) were considered eligible for family planning services. In the initial round of distribution, the actual distribution was done by the FAs. Women were contacted and offered a six-month supply of pills or condoms. (Although condoms were part of the delivery system, it soon became obvious that the distribution system would have to be based on the pill. This was primarily for cultural reasons. Women were unwilling to accept condoms from the distributors. This point will be discussed in more detail later.)

Modified Research Design: As a result of early experiences, the CRL altered the original research design. Whereas the original design had a control and study or distribution population, it was decided that the delivery system in the original distribution area had a number of flaws that would prevent a major increase in contraceptive use. More specifically, it was found that contraceptive prevalence plateaued and it was felt that the existing delivery system could not break this barrier for the following reasons:

1. The contraceptive mix (pills and condoms) did not meet the family planning needs of the population.

2. The field staffs lacked sufficient status and knowledge to effectively deal with questions relating to such things as side effects.

3. The delivery system did not adequately address a variety of socio-cultural barriers to a wider adoption of family planning.

The CRL modifications retained sufficient elements from the original study design to allow one to address the study's original objectives. At the same time, a modified delivery system is being tested. This system consists of:

1. Eighty new field workers were recruited and trained to replace the FAs and LVWs. These field workers were more educated and were not from the Matlab area. They were given special training on all aspects of family planning and, in addition, maternal and child health.

2. Depo-Provera, sterilization, and neo-sampoon, a vaginal tablet, were introduced in the modified area.

3. Tetanus toxoid immunization was introduced in the spring of 1978.

The above services were introduced in a population of 80,000. One half of this population consisted of persons from the original control population and the other half from the original distribution area. Thus, the study population now consists of the following: Control - 85,000; Original Distribution - 85,000; Modified Distribution - 80,000. The modified system became operational in November, 1977.

Vital statistics and family planning service statistics have been collected continuously throughout the life of the project. It is the comprehensive collection of information on births and, therefore, the potential for directly measuring impact on birth rates that makes this project unique. In addition, numerous KAP and various special surveys have been carried out. The current data set is rather large and comprehensive.

I. Measurement of Progress to Date:
Appendix A is a summary of major findings.
Appendix B lists the publications so far produced by the project.

Appendix C is a list of on-going studies.

J. Problems and Issues:

1. What has been the performance of the project in providing services to the population? Have contraceptive services really been available so that the concept of contraceptive "availability" can truly be measured?

2. What is the quality of the data itself? Have birth rate measurements been accurate or at least replicable?

3. What has been the quality of the analysis of the data? Was the analysis appropriate to the objectives of the project?

4. What has been the cost effectiveness of the project?

5. What generalizations can be drawn from the project?

6. Which elements of the existing data set are most appropriate for study? What are the most important questions to answer.

7. Does the CRL have the resources to analyze the current data set adequately in a reasonable length of time?

8. Should A.I.D. consider supporting further data analysis either within CRL or independently.

9. Should A.I.D. consider funding of future data collection activity.

K. Reference Documents:

(1) Contract AID/pha-C-1105.

(2) Gillespie memo to Research Advisory Committee, 7/17/78.

(3) Shelton-Mosley letter, 10/10/78.

(4) Semi-annual Reports, July - December 31, 1978, and January 1 - June 30, 1978.

(5) Seven reports listed in Annex A.

L. Evaluation Agenda:

Will be worked out by USAID, but will include visits to CRL in Dacca as well as Matlab Thana.

APPENDIX A

Major Findings of Matlab Contraceptive Distribution Study

| Finding | Source |
|---|---|
| With simple distribution of only pills and condoms, contraceptive prevalence increased from baseline of about 1 - 2% to 18% in three months. By 18 months prevalence rates stabilized at about 13%. | Osteria et al., Assessment of the Matlab Contraceptive Distribution Project - Implication for Program Strategy. |
| Impact of contraceptive use on birth rates inferred from high correlation of age and parity specific prevalence rates and age and parity specific fertility rate declines. | Huber, an experimental design for assessing the affectiveness of household contraceptive distribution. |
| Addition of Depo-Provera and sterilization through an improved delivery system increased contraceptive prevalence to 26% in 5 months of which Depo-Provera accounted for over half (15%). | Osteria, The village based family planning program in Matlab thana. Assessment of the first phase of program operation. |
| Analysis of pill acceptors and matched non acceptors from first phase indicates an average prolongation of birth interval of 5 months which extrapolates to an estimated overall fertility decline of 5%. Methodology suffers from having to set a cutoff date. | Osteria et al., The Demographic Impact of the Contraceptive Distribution Project. |
| In original phase, younger married female fieldworkers with more children performed best. Only 26% of variation could be explained by field worker characteristics. | Rahman, et al., a Study of the Field Worker Performance in the Matlab Contraceptive Distribution Project. |
| In the early modified phase, with better trained field workers, field worker characteristics were much less important than recipient characteristics in determining acceptance. | Osteria, an Areal Analysis of Family Planning Program Performance in Rural Bangladesh. |
| In sterilization follow-up survey, community support and approval much better toward tubectomy than vasectomy. | Rahman, et al., a Follow-up Survey of Sterilization Acceptors in Matlab Bangladesh. |

# LIST OF PEOPLE INTERVIEWED

| | |
|---|---|
| Black, John | Epidemiologist, CRL |
| Beecker, Stan | Demographer CRL |
| Bhatia, Susham | Physician CRL<br>Co-principal Investigator |
| Chakraborty, J. | Field supervisor, CRL |
| Chowdury, A.I. | CRL |
| Garooq, Golam | Physician CRL |
| Huber, Douglas | Advisor to Bangladesh Family Planning Program, former Principal Investigator, CDP |
| Khan, Atiqur | Co-Director of the Matlab Contraceptive Distribution Project and Director of Family Planning Training, Govn't of Bangladesh. |
| Misham, Tony | Ford Foundation |
| Mosley, Henry | Co-Director of the CDP and Director of CRL |
| Ruzicka, Lado | Demographer, Australian National University, and Advisor to CRL |
| Rahman, Makhlisur | Junior Investigator CDP, CRL |
| Satar, | Ministry of Health and Family Planning |
| Yunus, Mohamen | CRL |

CONTRACEPTIVE DISTRIBUTION PROJECT
LIST OF REPORTS

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2. Curlin GT, Khan AR: Contraceptive Distribution Project: semi-annual report, January - June 1976. Dacca, Cholera Research Laboratory, 1976.

3. Huber, DH, Kahn AR, Curlin CT, Langsten R: Contraceptive Distribution Project in rural Bangladesh. Paper presented at the Seminar on Fertility in Bangladesh, Cox's Bazaar, 13-15 December, 1976.

4. Langston R: The contraceptive distribution program: baseline and prospects. Dacca, Cholera Research Laboratory, 1976.

5. Huber SC, Khan AR, Huber DH, Rahman M, Chowdhury AY, Chakraborty J. Chowdhury AI: Case-control maternal and child health survey of oral contraceptive users and non-users in rural Bangladesh, published by the John's Hopkins Fertility Research Project, February, 1977.

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8. Huber DH, Rahman M, Chakraborty J: Injectable contraceptives in six villages of Matlab Thana, Bangladesh - initial experience. Paper presented at the Bangladesh Workshop on "The Role of Injectable Contraceptives in Bangladesh", Dacca, 1 March, 1977.

9. Rahman M: Utilization of Dais in promotion of contraceptive practice, CRL draft report, March 1977.

10. Rahman M, Huber DH, Chakraborty J: A follow-up survey of sterilization clients in Matlab, Bangladesh. Draft paper presented at the Bangladesh Workshop on the National Sterilization Program, Dacca, June 1977.

11. Huber DH, Rahman M, Chakraborty J: The condom - a misunderstood contraceptive, CRL draft paper, June 1977.

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16. Khan AR et al: Experience with household contraceptive distribution programme in rural Bangladesh and evoluation of new strategy. Draft paper to be presented at the Bangladesh Workshop on Innovative Population Programs, Comilla, February, 1978.

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18. Osteria T. Rahman M, and others: Assessment of the Matlab Contraceptive Distribution Project - Implications for Program Strategy. CRL Working Paper No. 4, 1978.

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20. Langsten R, and Chakraborty J: Constraints on Use and Impact of Contraceptives in Rural Bangladesh - Some Preliminary Speculations. CRL Working Paper No. 6, 1978.

21. Osteria T, Mosley WH, and Chowdhury AI: The Demographic Impact of the Contraceptive Distribution Project. CRL Working Paper No. 7, 1978.

22. Rahman M and others: A Follow-up Survey of Sterilization Clients in Matlab, Bangladesh. CRL Working Paper No. 9, 1978.

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# CONTRACEPTIVE DISTRIBUTION PROJECT
# LIST OF ON-GOING STUDIES

Draft Report Completed

1. Assessment of New Program
2. Six Village Study
3. A real Analysis
4. Impact of Sterilization
5. Period Fertility Analysis
6. Depo-Provera Study

Study in Progress

7. Period Fertility Analysis
8. Coital Frequency
9. KAP Studies
10. Effect of Contraceptiion on Menstruation
11. Overview Paper of First Three years of CDP