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EVALUATION OF MOBILE EDUCATION AND SERVICE UNITS IN INCREASING ACCESSIBILITY AND ACCEPTABILITY OF FAMILY PLANNING METHODS

INDIA

Final Report

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BACKGROUND

The commitment to improving the health and welfare of families, as expressed in policy statements of leaders presents a challenge to government and non-government agencies (NGOs), involved in the Health and Family Welfare Programme in India. According to the recent National Family Health Survey, about 40 percent of currently married women are using family planning - 36 percent using modern methods and 4 percent using traditional family planning (I.I.P.S., 1994). Yet fertility intentions are quite distinct, seemingly at variance with contraceptive use. More than one-fourth (26%) of women want no more children, but are not sterilized; another 20 percent want to wait more than two years for another child, still the use of spacing methods in India is remarkably low (about 5%). The reasons for the mismatch between stated intention and behaviour are several--women and their spouses were not aware of contraceptive options, were hesitant to ask for services for fear of side-effects, or did not know where to obtain services of adequate quality.

In addition, MCH services are an important complement to family planning services. Access to and the quality of these services are also critical for family health and welfare. The utilization of clinic based family planning services in poor urban and rural areas has always been limited by the distances potential clients have to travel to seek care. In many studies on clinic catchment areas, the majority of users live no more than five kilometers from the clinic, while a large segment of the rural and urban marginal population lacks access. Three alternatives are commonly proposed: increase the density of clinic sites with its corresponding high infrastructure costs, develop community counterparts such as CBD outreach workers with its associated demand for continuous training and supervision, and attempt to bring clinic services and information to the community through the use of existing staff as a mobile team.

The introduction of the Mobile Education cum Service Units (MESU) was designed to be an appropriate option to make the benefits of the Family Planning (FP) programme accessible to families and communities outside the reach of the existing health and family welfare services. The Family Planning Association of India (FPAI) is an NGO founded in 1949 which pioneered the development of MESUs in India in 1966. However, the use of mobile teams in India is not unique to FPAI. Each Community Health Centre (CHC) is supposed to have a vehicle for the transport of emergency cases, and most medical colleges have had mobile vans with operating theatres for the past 15 years. Often however, these mobile units are underutilized due to operational problems of inadequate maintenance, problems with the lack of driver or sufficient budget for petrol and lubricants, or other use of the vehicle by health authorities.

The FPAI functions through its headquarters in Bombay and has 42 branches and 21 rural integrated projects spread all over the country. Its focus is on the provision of MCH care and family planning services through its extensive programmes of information, education and motivation (including population, family life and sex education) and providing clinical and non-clinical services. Among its projects, Mobile

Education cum Service Units (MESU) is an important one, operating in 39 locations in different states. Currently all the FPAI sponsored MESU taken together cover a population of about 2 million.

The MESU is one element in an array of services to extend the outreach of Family Planning (FP) and Mother and Child Health (MCH) care services to poor families residing in peri-urban and rural areas. The objectives of the units are:

- To carry out awareness programmes through information, education and communication (IEC) and generate demand for FP services among the rural, peri-urban and slum population.

- To provide MCH and FP services, particularly spacing methods, at the door steps of the people.

- To carry out motivational activities and refer sterilization acceptors to the static clinics run by the association or to the government hospitals and post-partum centres.

OBJECTIVES OF THE STUDY

The present study tries to assess the extent to which Mobile Education cum Service Units (MESU) are effectively used to increase the outreach of the family welfare programme and to provide services of better quality. For this purpose, the functioning of the mobile units along with their effect on the targeted population, demand an in-depth study. The main objectives of this study are:

- to assess the extent to which the MESUs have achieved their objectives and identify reasons for failures;

- to find out the extent to which these units are in operation and are being utilized;

- to gauge the impact of such units on the acceptance of FP, particularly spacing methods, in the areas of their operation;

- to assess the quality of services provided by the MESU in comparison to that, provided by a Primary Health Centre (PHC); and

- to examine the costs and sustainability of the MESU strategy.

METHODOLOGY

The present study was conducted in 1992-93 for the FPAI MESU centres in four states. The Indian Institute of Health Management Research, Jaipur, took the responsibility of carrying out the study in Dharwad of Dharwad District (Karnataka), Lucknow of Lucknow District (Uttar Pradesh), Gomia of Bokaro District (Bihar) and Bhubaneswar of Bhubaneswar District (Orissa). The PHCs of Garag, Kakori, Kasmar and Mandhasala were selected as control areas in the respective districts.

A combination of qualitative and quantitative research methods were used to obtain information on the performance and quality of MESU services. Specifically, the following procedures were used to collect relevant data addressing the study objectives.

- A review of users and cost information from FPAI records.
- A sample survey of currently married women aged 15-44 years.
- Limited qualitative information collected from service providers (Medical officers, Auxiliary Nurse Midwives and Field workers) and clients from both MESU and PHC areas.

Longitudinal data on clients of various family planning methods and costs of the MESU project were collected from FPAI maintained records.

For the sample survey, a list of all villages under each MESU area was prepared, from which half were chosen for study so that all the zones under MESU operation are covered in an unbiased way. From each control PHC area under the study, the PHC village, 5 to 8 Sub-centre villages and an equal number of remote villages under the selected Sub-centres were chosen. Two groups of eligible couples were the focus of the sample survey carried out in both the MESU and PHC areas. The two groups were:

1) eligible couples, consisting of married women in the age group of 15-44 years and;

2) couples who had used family planning services in the last six months, referred hereafter as Current Users. The Eligible Couple Registers (ECR) maintained by the MESU and the PHCs were used as the sampling frames. A total of 300 married women were selected at random from each of the four MESU areas, aggregating to a total of 1200 women in the sample. These women were contacted at their residence and were interviewed. A structured questionnaire was used for collection of data from the eligible couples and other beneficiaries in the sample. A similar procedure was adopted for conducting the household survey of 200 married women residing in each of the four PHC areas, adjacent to the areas of the selected MESUs. These 800 women were used as a control group while comparing the knowledge, attitude, and practice, (KAP) of couples in the MESU and the non-MESU areas.

About sixty acceptors of sterilization and spacing methods were randomly selected from the current users in each MESU and the adjacent PHC area. Thus, a total of around 250 acceptors of family planning (FP) methods were also chosen from each selected area and were interviewed. To asses the extent to which clients were satisfied with the consultation and advice they had received in the clinics, a few of them were interviewed after they had been examined or had received advice.

In addition to the quantitative information, qualitative information was collected from functionaries and clients. The staff of the MESUs and the selected PHCs were interviewed to learn of the advantages and the limitations of the existing MESUs in the area. An attempt was also made to understand the existing linkages between MESUs and the public health services units and to know whether they are complementing each other's efforts or working in isolation. Focus group discussions were also held with clients on various issues of MCH care and FP services, provided by the MESUs and the PHCs.

MESU ACTIVITIES

The MESU projects started functioning in Dharwad, Lucknow and Gomia from 1978. The Bhubaneswar MESU, however, started operations in 1983. The Dharwad Branch provides clinical services, including family planning and maternal child health care, through the Comprehensive Model Family Planning Centre (CMFC) and the MESU. All the sterilization cases motivated by the MESU team are sent to the CMFC. Generally good facilities are available at the centre so as to provide the necessary clinical back-up. The MESU provides services to an area of about 76,000 population.

In Lucknow, Uttar Pradesh, the FPAI Branch was established in 1965 and the MESU project started functioning in 1978. There are nine on-going projects within the Branch, including two funded by the government. The Branch provides family planning clinical services, including MCH care to a population of more than 200,000 in urban and rural areas through its three service centres--the CMFC, the MTP/MR Minilap Centre, and the MESU. The MESU provides services to an area of about 58,000 population.

The FPAI Branch in Gomia, Bihar was established in 1969 and it started the MESU project in 1978. The other projects undertaken by the Branch are on MCH care, population education, family planning in the industrial and coal mining areas, and the development of young women. The project on the development of young women provides sex education, information on leading healthy family lives, and assists women to become self employed. The MESU provides services to an area of about 80,000 population. Unlike the other MESUs, this branch does not utilize a FPAI vehicle for its mobile teams. Sometimes it rents a private vehicle, and at other times uses public transport.

The Bhubaneswar Branch of FPAI in Orissa is the most recently established service. It has been providing both family planning and MCH care since 1983. The MESU provides services to the area of about 51,000 population.

Three specific activities are undertaken by the MESUs: provision of MCH services, family planning services and Information, Education and Communication. The details of each are given below.

Mother and Child Health: Consisting of anti-natal care and post-natal services, and provision of nutritional and immunisation services. For example, the MESUs of Lucknow and Gomia, with a view to extend educational and clinical services to mothers and children in rural areas, hold weekly clinical sessions in the villages and Sub-centres. The visiting mothers and the children are given treatment for minor ailments. Women who come for antenatal and post-natal care are given advice on nutrition.

Family Planning Services: Offering clinical family planning services such as IUD insertions and sterilization and establishing condom distribution depots to increase the access to spacing methods through community channels. For example, IUD users obtain services at the Sub-centre from the medical officer-in-charge of the MESU. The community is also involved in distributing contraceptives by opening depots and forming clubs. For instance, in 1991, there were 53 depot holders in different sites in the MESU operational area of Lucknow. There were also nine clubs in different MESU - operated areas which had been formed by the acceptors of family planning methods.

Information, Education and Communication (IEC): Consisting of activities that create demand for FP services among the rural, peri-urban and slum population. These include organized activities through personal counselling, group and mass meetings, film shows, and exhibits. Some uniquely MESU activities are Baby Shows and Exhibitions in these areas.

Beyond IEC activities, the services include referring sterilization acceptors to clinics run by FPAI or to government hospitals and post-partum centres. Mothers who visit the weekly clinical sessions are motivated for accepting family planning methods according to their need and suitability. Referrals are also made as in Lucknow and Dharwad, where tubectomy and vasectomy acceptors are referred to the comprehensive Model Family Planning Centres (MFPC) run by FPAI. In Bhubaneswar, sterilization and IUD acceptors are motivated to go to the near-by Government Hospital. In 1992, the MESU branch of Bhubaneswar had organized for the first time three sterilization camps, and all were successful, with a good response from people in the operational area.

Administrative Structure and Staffing of MESU

Each MESU operates under the administration of a FPAI Branch Manager. Service providers include a Medical Officer, a Field Coordinator, and one or more Auxiliary Nurse Midwives (ANM), an Extension Educator, additional field workers (male and female both) and a driver-cum-projectionist.

Table 1 specifies the number and staff functioning in a MESU in each project area. It is noteworthy that there is considerable variation in both the number and composition of staff. One of the MESUs operates without a medical officer, and with largely male field staff as in Bhubaneswar, while Lucknow has twice as many staff for a comparable area of responsibility.

Medical Officer: Each Medical Officer (MO) is responsible for implementing the project activities. He is assisted by one Educator, one Lady Health Visitor (LHV/ANM) and some Field Workers. They have the total responsibility of the MESU. Supervision of the field workers and their field visits come under the responsibility of the Medical Officer. Since there is no vehicle at Gomia, the MO visits the Sub-centres at Vishnugarh and Pitarbar once or twice in a week. In Bhubaneswar, as the MO's post is vacant, the Branch Manager is holds the MO's responsibility as well. The total population covered by each unit ranges from fifty one thousand to eighty thousand. There is also some variation in the population coverage by each field worker. The staff of MESU generally have work plans which are reviewed in the weekly meetings held at the branch office under the overall supervision of the Medical Officer.

Extension Educator: He plays a vital role in co-ordinating the implementation of the field activities. In Dharwad he is designated as Field Co-ordinator and in Gomia, as Education Assistant. The responsibilities include planning and organising the field activities but there is considerable variation across the four MESUs. For example, extension educators spend about 25 days a month in the field in Bhubaneswar and Dharwad and 7-8 days in other centres.

Field workers: Field visits are planned at the time of the weekly staff meetings of the MESU. The activities of the Field Workers and ANMs/LHVs are basically field based. Supervision is conducted both during the weekly meetings, through checking registers, and during field visits. The MESU conducts IEC activities through population education and group meetings. These activities are performed through the link workers. It was reported that in every MESU area a group of link workers are chosen for every village and these workers help in various activities of MESU.

RESULTS

Table 2 provides a profile of eligible couples surveyed in the four MESU and comparison PHC areas. There are few significant differences between MESU and PHC areas within states, and where they exist they are not systematic. The mean age of women surveyed ranged from 28 to 31. The average woman had been married for at least 10 years to a man 7-9 years older and had less than 3 children. Between 3 and 20 percent had ever experienced an unwanted pregnancy, and the mean ideal number of children was generally higher than the number they currently had. With the exception of the Bhubaneswar sites where the average age of marriage was above 18 years and illiteracy was less than 40%, more than three-fifths of the women in the other sites were illiterate, and their mean age at marriage was 16 years of age or less.

Most of the respondents lived in nuclear households (55-92%) and most families owned their own simple home (71-99%). With the exception of UP and Orissa where the occupation of the husband was predominantly in petty business or service sector, most of the husbands were involved in agriculture, either as cultivators or as labourers. Somewhat surprising was the relatively high level of electricity use reported in homes (56 to 74%) in the MESU areas. In contrast, in the PHC areas in UP and Bihar only about one-third of the respondents reported the availability of electricity. With the exception of Karnataka, most families used a well or handpump for water. Most had no toilet facilities, but rather used nearby fields for defecation. Given the long history of MESUs, it is difficult to determine how the demand for family planning or other MCH services would be influenced by larger development schemes like electrification.

Information, Education and Communication (IEC)

An important component of MESU activities during visits to the community are the Information, Education and Communication activities. A variety of activities are held to create awareness and thus generate demand for family planning and MCH services. The activities range from counselling potential clients in their homes, holding group discussions and meetings, screening films, holding exhibitions, distributing booklets and pamphlets to holding baby shows.

Table 3 reports the frequency of visits by MESU vehicles. The percentage of couples reporting at least one visit by MESU were the following: Uttar Pradesh (83%), Orissa (75%), Karnataka (67%), and Bihar (10% as this site did not have a vehicle). Only in UP were visits made weekly; in the other sites visits were monthly or less regularly. In UP and Bihar about 62 percent of respondents were satisfied with time spent with the MESU team, while in Karnataka and Orissa less than a quarter were satisfied with the time spent.

Many respondents know about the MESU visits and were able to specify that services such as medical care, immunization and advice on family planning were offered by the teams. However, educational activities were often not spontaneously reported by respondents, even though over one-half of women in all the sites with the exception of Dharwad had been visited at home, and between 10-20 percent of respondents had attended mass meetings.

Table 4 presents the range of IEC activities conducted by the four MESUs in their areas over the five year period 1987-1991. The most important activity that all the MESUs do is contact potential clients (ranging from 9000 persons contacted in Gomia to 24,000 in Dharwad in 1991) and conduct group discussions and meetings (ranging from 7200 persons participating in Gomia to 45,000 in Bhubaneswar in 1991). Apart from these activities, they also show films, hold exhibitions, organize competitions, Orientation Training camps (OT), workshops and cultural events. There is flexibility in the events held with some MESUs holding more of some activities than others. For example, in 1991, the MESU in Gomia held 30 exhibitions while one exhibition was held in Bhubaneswar and Dharwad and none held in Lucknow; the

Bhubaneswar and Gomia MESUs held 2-3 competitions, and the Dharwad one arranged 37 OT camps. The number of activities is as variable as it is impressive. It's impact on MCH and family planning knowledge and use of services is described in the following sections.

MCH Services

Table 5 presents the comparison between MESU and control PHC areas in terms of MCH service coverage, specifically prenatal care (for example, use of iron folic acid tablets and two doses of tetanus toxoid), post-partum follow-up, child immunization and parents' correct knowledge of the use of oral rehydration salts (ORS). The results are quite inconsistent, with prenatal care coverage less than 60% of pregnant women in all MESU areas, and less than 50% follow-up during post-partum with little advantage of MESU over PHC performance. Only in Bihar and Orissa were significant coverage differences seen in MESU areas for childhood vaccination. Only in Bihar and Karnataka were small differences in correct knowledge about ORS noted, and in Bihar only about one-fourth of parents in the MESU area could correctly identify how to use ORS.

Family Planning Services

Table 6 and accompanying figures present information on the number of new acceptors of spacing and limiting methods from 1984 through 1991 for each of the MESU areas. It is noteworthy that acceptance varies dramatically over time, with some areas like Bhubaneswar providing over 90% of services for spacing methods, while others like Gomia and Dharwad have large proportions (more than half in some years) of sterilization users. Where a medical officer was not part of the team, for example Orissa, most acceptors of family planning were spacers and most of the sterilization cases were referred to nearby FPAI clinics or public camps for the operation.

Such patterns of method acceptance can also be an artefact of how data are recorded and maintained. A similar study of a MESU unit in Solapur with a PHC control found that the service statistics of the PHC suffered from serious inaccuracies, particularly as the figures for the non terminal methods were inflated (CORT, 1994). On the other hand, the MESU service statistics were generally reliable. The same study also reported that PHC workers often were not able to locate a family planning acceptor's house or provide details of the acceptor which the MESU worker could. Corroborating evidence for poor data maintenance in the present study comes from the fact that the interviewers frequently had difficulties in locating respondents who had been identified through the Eligible Couple Registers. Given these limitations of data maintenance, it is possible that the actual pattern of method acceptors may be different.

There are interesting features of the MESU teams' performance in each state. For example, in UP the large yearly variation in users is largely due to reported condom acceptors (Table 7). Foam spermicide accounted for up to 18% of acceptors in

Lucknow until 1989, and then it was no longer provided. At the same time there was a steady increase in IUD acceptors from 19% to 33% between 1984 and 1990. In Orissa, diaphragm users accounted for more than 20% of all users from 1984 through 1987, but were no longer provided thereafter, till supplies resumed in 1991. In Karnataka, the MESU supports major sterilization activity, although half are referrals to government clinics, yet up to 52% of all acceptors are for condoms. Although there has been an annual increase in oral users, they still account for only 16% of all acceptors. Similarly half of the acceptors in the Bihar MESU area are for condoms (for example, 46% in 1987). This is remarkable in that the survey results which are presented later indicate that the prevalence of condom use is less than 3% in all areas studied and less than 30% of all acceptors. The dynamics of contraceptive availability, and potential provider bias, have clearly played a major role in acceptance patterns in the MESU areas.

Table 8 illustrates that there is no systematic difference in awareness of family planning methods between MESU and comparison PHC areas. Uniformly in all the four areas, awareness is highest for female methods (tubectomy, the IUD and orals), and lowest for male methods (vasectomy and condoms). Awareness of family planning methods is notably lower in Bihar than in the other areas. Awareness of sterilization is somewhat lower in the Dharwad and Gomia MESU areas, while awareness of spacing methods is highest in the Bhubaneswar MESU area compared to PHC results.

Compared to the results obtained in the National Family Health Survey, we find that in both the PHC and MESU areas of Bihar, Uttar Pradesh, Orissa and Karnataka, women are significantly more aware of modern spacing methods. It is not clear whether the greater knowledge in the study areas are site specific results.

Table 8 also provides information on contraceptive prevalence among eligible couples in the MESU and comparison areas. Although prevalence is low in all the areas, there is no clear pattern of advantage for MESU areas over areas served by PHCs. With the exception of Lucknow, UP with 24%, the other MESU areas had prevalence levels which were quite low, from 15% to about 18%. In Orissa and Karnataka, the PHC areas had prevalence levels from 5 to 12 percentage points higher than the MESU areas, while in UP and Bihar the MESU areas had a 8 to 14 percentage point advantage over the PHC areas. The results are disappointing given that the areas served are relatively small, generally less than 80,000 and have been served by the MESUs in some fashion for at least 10 years. It would be difficult based on this data to argue that the MESU programmes have had a significant differential impact on family planning use.

In terms of method mix, female sterilization continues to be the predominant method, except in Orissa where orals and condoms account for nearly half (46%) of the 17.5% of couples currently using a method. For example, in the Lucknow and Dharwad MESU areas 85% of current users adopted clinical methods (sterilization 67% and IUD 18% of users in Lucknow, and sterilization 79% and IUD 6% in Dharwad). Although the number of vasectomies was never very high in most MESUs, it is noteworthy that the number decreased further after 1987-88. It is difficult to

determine if this was due to policy changes, training of staff or the limited information provided to potential clients. Although sterilization is still the leading method in PHC comparison areas, the patterns of contraceptive mix are quite different. Given that MESU's operate in underserved areas, less than 25% of ever users in MESU areas report the government as their source of supply.

Quality of Care

Table 9 highlights some of the results on the quality of information provided to contraceptive users. It appears that, with the notable exception of the Dharwad MESU, the MESU staff provide users with more comprehensive information about the method selected, its contraindications, as well as possible side effects and their management. But even where the MESU appears to be doing better, the figures are far from adequate, with 20 to 50% of users not receiving information important to ensure effective use and satisfaction.

Though clients using the MESU services are generally given a wider and more free choice of contraceptive methods, data from exit interviews and in-depth interviews with staff suggest that provider competence could be improved. In some instances, MESU ANMs have not mentioned any side effect and claimed that the contraceptive provided was a 100 percent safe. It appears that health workers try to convince reluctant clients by minimising information on side effects. In addition, it could also be that the health workers themselves may not have correct knowledge, as MESU ANMs in some areas were not found to be as technically competent as PHC ANMs. In general, MESU ANMs were not able to insert IUDs. Also while they had minimum knowledge about antenatal care services and risk factors during pregnancy, in practice important services were sometimes overlooked. For example, while ANMs knew about the importance of weight gain during pregnancy, weight was not measured. Follow-up services for users in all areas were poor (0-30%) in terms of coverage.

The research team noted that, with the exception of the referral of cases for sterilization, there was little coordination between MESU and PHC workers. For example, in several areas, clients in focus group discussions felt that MESU follow-up services were only provided to women who received their method from an FPAI outlet, excluding interested users who had obtained their methods from other sources. On the other hand, PHC workers in areas served by MESU often left the important tasks of outreach, including vaccination, to FPAI.

Given the cultural preference for a female doctor for pelvic examinations, there was some consensus from staff interviews that a female doctor should be included in each MESU team, and the required facilities for conducting tubectomy, IUD insertions and MTP should be provided in all centres.

COSTS OF MESU

The cost of sustaining the mobile service units is a critical issue for policy makers and programme managers. The project can be said to be sustainable if the recurrent costs can be recovered. However, in projects with mobile service units, the recurrent costs are often considerable as a vehicle, drivers and POL are involved. In addition, the proportion of fixed costs tend to be higher if the area served by a mobile unit has a population of less than 100,000. Further, typically underserved areas may have some intrinsic problems specific to the area which can increase costs.

We present those elements of the cost data which are readily available and can provide some rough estimates of the costs of a MESU. However, it should be borne in mind that not all the resources used have been costed and some of the costs of the project have been met by other FPAI budgets. With this caveat, we next proceed to infer the costs from the information available. See the *appendix* for economic data for India on exchange rate and inflation. It should be noted that the rupee was devaluated in July 1991 by about 17.38 percent.

The mobile service in Lucknow cost Rs.222,086 in 1990-91 (US$ 12372) and increased to Rs.279,617 (US$ 9123) during 1992-93. The salary component had been 80 percent of the total cost. The project had its own vehicle for field operations and the expenditure on petrol, oil and lubricants (POL) plus its maintenance was as high as Rs.30,000 (US$ 979) or about 11 percent of the total cost during the year. The expenditure on medicines was 3.3% and that on printing, conferences and seminars was 2.0%. The total cost of the mobile service in Dharwad had been Rs.2,38,720 (US$ 13299) during 1990-91 and this increased to Rs.3,13,209 (US$ 10219) in 1992-93. In this period, the salary component of the total cost had gone up from 89 to 91 percent. The medicine component, however, remained stable, ranging between 2 to 3 percent of the total. The proportion spent on Field Travel Allowance (FTA) had declined from 3.8 to 2.9%. The amount, spent on printing, conferences and seminars, was on average about 3% of the total cost. The project here was provided with a vehicle for field operations, but the expenses for its use were met by other FPAI projects.

The MESU project in Gomia of Bihar cost Rs.207,934 (US$ 11584) in 1990-91. The cost had increased to Rs.2,78,820 in 1992-93 (US$ 9097). The salary component of the total cost was around 78%, the minimum among the four MESUs. As there was no vehicle in the project, the field operations were done through hiring a vehicle. The POL cost for this was about 3.4% of the total cost. In addition to this, about 14 to 15% of the annual budget was spent on paying honorarium to the medical specialists. The expenses on medicines accounted for 1 to 1.5% and that on printing, conferences and seminars was about 1.5%.

The cost of the mobile service in Bhubaneswar of Orissa was the least among the four. It was Rs.145,917 (US$ 8129) in 1990-91 and increased to Rs.185,357 (US$ 6048) in 1992-93. The salary component of the total cost was around 84%, the second highest in comparison to that of Dharwad. The expenses for running the

project vehicle were funded through the FPAI Branch office. Expenses on medicines accounted for 1.8% and that on printing, conferences and seminars accounted for 7% of the total cost.

Table 10 illustrates the increase in expenditures for the MESU projects over time. From 1984 to 1992 rupee budgets increased from three to nearly six times. Increased budgets are in part due to inflation which has been around 10 percent in recent years and ranged from 4.4 percent in 1985 to 13.7 percent in 1991. In dollar terms, MESU budgets increased from 15 to 57 percent between 1984 and 1992; specifically in Lucknow (57%), Bhubaneswar (45%), Dharwad (33%) and Gomia (15%). The cost per capita served in 1992 also varies, depending on the composition of the team and the area served from 3.5 Rupees in Bihar to 4.8 Rupees per capita in UP. The costs of the transport itself are difficult to calculate as the vehicle is provided from outside the MESU budget. In Lucknow, where the operational costs of transportation are available, they amount to 30,000 Rs. and account for nearly 11% of the MESU budget for the year.

As might be expected given the varying levels of acceptance and cost, there is considerable variability in the cost per new acceptor, both between MESU units as well as over time. Table 11 provides a synthesis of information on expenditures divided by the number of new acceptors in each MESU. The cost per new acceptor nearly doubled from 1987 to 1991, about half of which could be accounted for by inflation. It varied from a low of 37 Rupees per acceptor in Orissa with high reported levels of condom users, to a high of 198 Rupees per acceptor in Karnataka with nearly 40% of users accepting sterilization. However, about half of the reported sterilizations are referrals which represent little additional cost to MESU other than the time of the motivators. In dollar terms the cost per acceptor dropped in all areas between 1984 and 1991, although the ratio is variable: Lucknow from $5.97 to $4.98, Bhubaneswar from $7.57 to $4.20, Dharwad from $11.61 to $8.08, and Gomia from $12.95 to $7.10 per new acceptor.

The data on cost-effectiveness is difficult to interpret for several reasons. Inflation in recent years of about 10 percent per year has eroded budgets, for items other than staff salaries. Moreover, it is not clear, given the structure of the Branches, if all the costs associated with running the MESU are included in the budgets. We know that the capital and operation costs of the vehicle is not included in three of the MESUs. Secondly, there are a number of elements of effectiveness that the FPAI is interested in such as MCH services (for example, vaccination and prenatal care); and this analysis only examines new acceptors of family planning. Most importantly, given the variability in the staffing and type of services provided, it seems as though more work is need on defining what a MESU should include. In other words, what is the model that is being promoted. MESU means very different things in each of the sites studied. Additional work on refining this programme strategy and improving its management is needed before the cost-effectiveness results can be very useful for decision making.

CONCLUSIONS

Mobile teams have been a part of family planning programs worldwide for the past forty years. Depending on the terrain and local infrastructure, mobile health services have used trains (Mexico), boats (Gambia), camels (India), and even planes (Australia). For more than 15 years, the Family Planning Association of India (FPAI) has supported 39 Mobile Education Cum Service Units (MESUs) in different parts of the country. Each MESU is designed to cover from 50,000 to 80,000 population in rural, semi-rural or slum populations and provided MCH and family planning services. Generally a mobile unit consists of a male doctor, an ANM, a field coordinator, 3-6 health workers about half of whom are male, and a van.

Data from a study of MESUs conducted by the Indian Institute for Health Management Research (IIHMR) in four states (Bihar, Karnataka, Orissa and Uttar Pradesh) provides some insight about their operation:

- A range of acceptable MCH services are provided by each MESU, including vaccination for children and pregnant women, antenatal care for pregnant women, community education on the treatment of diarrhoea, and family planning messages, services and referral. Some mobile teams provide sterilization services while others refer users to government clinics. A mobile team serves from 1300 to about 1900 new family planning acceptors per year, about half to two-thirds of which are users of spacing methods.

- While about 70% of the population they serve generally know about the service, the irregularity of visits caused by problems with the vehicle (either maintenance or unavailability of a permanent vehicle) or changes in programming reduced the potential for increased utilization, and problems with lack of follow-up care.

- While the population is familiar with the family welfare services of the MESU, other services are less well known and understood.

- There is great variability in the coverage and effectiveness of the teams, with some providing largely clinical services like tubectomy and the IUD, while others provide largely pills and condoms. This is in due in part to the availability of medically trained personnel in the MESU team. In half of the areas served by mobile teams, no differences are observed in terms of contraceptive knowledge or use when compared to neighbouring areas services by the public health services.

- The cost of operation of a MESU per year is generally less than US$10,000 with salaries of staff accounting for about 80% of the costs. The composition of staff varies however between MESUs, both in terms of training and gender.

The experience then is clearly mixed. The sites seem to perform better on some components than others, but there is no consistent pattern emerging that all MESU units perform better than public health services. With the increasing demand for

clinical reproductive health services particularly from female physicians, the mobile clinic may have another role, that of increasing the outreach for clinic laboratory and reproductive health examinations. Mobile units may also be employed by FPAI to assist other NGOs in providing clinical backup to community based distribution efforts. However, program strategies and management have to improve to make these services more cost-effective.

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Table 1
Staff Position in MESU projects

MESU Staff	FPAI Centres			
	Dharwad	Lucknow	Gomia	Bhubaneswar
Medical Officer	1	1	1	
ANM/LHV	1	1	1	1
Field Co-ordinator	1			
Extension Educator		1		1
Education Asst.			1	
Field Workers (F)	3	3	3	
Field Workers (M)	3	1	3	3
Driver		1		
Ayah/attendant	1	1		
Night guard		1	2	
Total	10	10	11	5
Population covered	76000	57605	80000	51062

Table 2

PROFILE OF WOMEN SURVEYED

	LUCKNOW		BHUBANESWAR		DHARWAD		GOMIA	
	MESU	PHC	MESU	PHC	MESU	PHC	MESU	PHC
Mean current age of women	31	30	29	29	28	28	30	29
Mean age at marriage of wife	15.7	14.9	18.2	18.1	16.5	16.7	15.2	15.5
Mean ideal No.of children	3.1	3.3	2.5	2.5	2.4	2.5	3.2	3.2
Mean No. of living children	2.8	2.7	2.4	2.4	2.6	2.5	2.9	2.8
% with unwanted pregnancy	10	3	10	10	10	20	4	5
% Wives illiterate	60	62	24	37	65	68	76	71
% of households with electricity	56	34	74	58	68	70	62	31

Table 3

REPORTED FREQUENCY OF VISIT OF MESU

(Percentage)

	LUCKNOW	BHUBANESWAR	DHARWAD	GOMIA
Weekly	48	3	6	8
Fortnightly	1	1	9	-
Once a month	22	40	30	2
Less frequently	9	24	6	-
Others	3	7	16	-
Reported visit of Jeep	83	75	67	10
Satisfied with time spent by MESU	62	18	25	63

Table 4

IEC Activities conducted by MESU

Year/ Districts	Interpersonal Contacts		Group Discussions		General Mass meetings		Exhibitions		Film shows		Competition Games/Sports debates		O.T Camps		Conferences/ Seminars/ Workshops		Cultural Events	
	Men	Women	No.	Attend	No.	Attend	No.	Attend	No.	Attend	No.	Attend	No.	Attend	No.	Attend	No.	Attend
LUCKNOW																		
1987	17537	18254	1969	21000	41	1324	0	0	5	828	8	680	5	273	0	0	50	3540
1988	17378	20962	1824	18853	88	2842	2	572	1	60	55	3940	1	48	1	50	1402	8350
1989	12339	17337	1417	13691	38	1704	0	0	2	316	0	0	4	113	0	0	1	1108
1990	5958	14751	1044	10274	19	631	0	0	4	356	0	0	0	0	6	406	0	0
1991	6408	14832	980	9692	23	1069	0	0	0	0	0	0	2	112	0	0	42	4695
BHUBANESWAR																		
1987	4337	7010	861	5897	26	1156	0	0	8	2220	0	0	0	0	1	32	0	0
1988	5029	7316	1076	7333	31	948	0	0	5	1160	0	0	0	0	3	533	1	250
1989	8712	13651	1792	12362	54	1995	4	680	5	1715	1	30	0	0	3	165	6	1375
1990	6965	14555	2017	14225	51	1203	0	0	14	3092	0	0	0	0	1	103	0	0
1991	4525	10118	2051	43512	49	1498	1	300	15	1430	3	54	0	0	5	147	0	0
DHARWAD																		
1987	22799	35777	2351	24762	255	28256	10	6640	31	35560	0	0	33	1550	2	52	33	13651
1988	25043	40617	2693	28830	338	31644	5	2150	36	29065	1	15	50	2499	0	0	48	16351
1989	26306	37942	2305	26472	398	37961	19	2698	51	42610	0	0	56	2688	5	455	74	24284
1990	12545	22122	2262	23925	302	53181	4	1250	29	24465	0	0	42	2012	2	98	62	29986
1991	8914	15673	1708	20099	166	10122	1	150	9	6300	0	0	37	1320	11	665	29	9273
GOMIA																		
1987	4556	6470	967	5878	47	1964	17	3789	5	2650	1	150	0	0	0	0	0	0
1988	3964	6691	1093	7154	28	1302	34	4901	17	21350	1	300	0	0	1	140	1	200
1989	4675	8394	882	5684	22	3395	44	12785	18	18500	1	300	0	0	2	300	2	2500
1990	3304	4207	567	4134	4	975	4	1300	4	1900	0	0	0	0	0	0	0	0
1991	3893	5210	734	5172	14	2019	30	9691	30	21350	2	1000	0	0	0	0	1	500

Table 5

MCH SERVICES PROVIDED BY MESU

(Percentages)

	LUCKNOW		BHUBANESWAR		DHARWAD		GOMIA	
	MESU	PHC	MESU	PHC	MESU	PHC	MESU	PHC
Received IFA tablets	57	46	52	53	54	70	6	18
Received 2 doses of TT or booster	61	54	48	41	59	73	19	27
Received post partum services from health workers	44	29	38	27	35	55	12	16
Children <2 years fully immunized	20	29	61	44	64	66	40	10
Correct knowledge of ORS	68	69	82	83	71	65	26	17

Table 6

NUMBERS OF NEW ACCEPTORS OF SPACING AND TERMINAL METHODS
MESU

YEAR	LUCKNOW		BHUBANESWAR		DHARWAD		GOMIA		TOTAL
	S	L	S	L	S	L	S	L	
1984	647	330	333	30	211	449	371	237	2608
1985	577	342	1970	121	388	482	540	490	4910
1986	758	294	1998	106	477	493	636	849	5611
1987	2383	269	1897	143	795	563	1042	542	7634
1988	2485	259	2008	93	1017	442	718	1076	8098
1989	2134	325	2048	106	921	541	831	550	7456
1990	1145	454	1243	100	889	565	562	199	5157
1991	1484	406	1339	128	836	512	992	328	6025
Min.	577	259	333	30	211	442	371	199	2608
Max.	2485	454	2048	143	1017	565	1042	1076	8098

Note: S = Spacers L = Limiters

Table 7

METHODWISE ACCEPTORS IN MESU - BY YEAR

YEAR	VASECTOMY		TUBECTOMY		I.U.D.		ORAL PILL	CONVENTIONAL CONTRACEPTIVES			TOTAL NEW ACCEPTORS
	Done	Referred	Done	Referred	Done	Referred		Condom	Diaphragm	Foam	
LUCKNOW											
1984*	2		328		183		29	267		168	977
1985*	16		326		245		48	115		169	919
1986*	24		270		326		35	298		99	1052
1987*	8		261		325		50	1885		123	2652
1988	11	0	239	9	425	0	26	1945	0	89	2744
1989	3	0	321	1	463	0	26	1563	0	82	2459
1990	1	0	453	0	531	0	19	595	0	0	1599
1991	2	0	404	0	488	0	55	941	0	0	1890
BHUBANESWAR											
1984*	2		28		32		60	146	95		363
1985*	5		116		113		510	790	557		2091
1986*	5		101		58		641	757	542		2104
1987*	8		135		135		641	697	424		2040
1988	0	5	0	88	17	174	826	763	0	228	2101
1989	0	1	0	105	5	195	968	725	0	155	2154
1990	0	0	0	100	0	90	764	386	0	3	1343
1991	0	4	0	124	0	157	686	471	25	0	1467
DHARWAD											
1984*	9		440		25		15	171			660
1985*	6		476		17		26	345			870
1986*	4		489		28		54	395			970
1987*	9		554		55		83	657			1358
1988	0	0	221	221	48	23	181	765	0	0	1459
1989	1	0	214	326	11	65	160	685	0	0	1462
1990	0	0	269	296	15	77	153	644	0	0	1454
1991	0	0	268	244	5	96	210	525	0	0	1348
GOMIA											
1984*	5		232		30		83	235		23	608
1985*	19		471		40		170	301		29	1030
1986*	79		770		61		188	328		59	1485
1987*	40		502		56		229	736		21	1584
1988	83	0	902	91	56	0	239	363	0	60	1794
1989	28	2	469	51	57	7	287	446	0	34	1381
1990	6	0	173	20	49	0	221	292	0	0	761
1991	4	2	309	13	94	1	402	495	0	0	1320

* Includes referred cases

FAMILY PLANNING KNOWLEDEGE AND USE

(Percentages)

	LUCKNOW		BHUBANESWAR		DHARWAD		GOMIA	
	MESU	PHC	MESU	PHC	MESU	PHC	MESU	PHC
Awareness								
Vasectomy	61	65	80	80	75	87	62	75
Tubectomy	87	89	98	99	100	100	89	98
IUD	82	91	94	82	87	85	59	53
Oral Pills	80	89	95	86	85	87	65	62
Condom	85	85	77	61	46	57	48	53
Current Use	24.2	10.1	17.5	23.3	17.8	30.2	15.2	8.7
Tubectomy/Vasect	67	37	27	45	79	56	61	84
IUD	18	30	14	15	6	24	8	4
Oral Pills	2	0	33	19	8	12	19	8
Condom	10	30	13	12	5	5	12	4
Rhythm/Others	3	3	13	9	3	1	-	-
Source among ever users								
Government	15	39	17	36	24	59	7	45

Table 9

INFORMATION PROVIDED TO CURRENT USERS OF FP METHODS

(Percentages)

	LUCKNOW		BHUBANESWAR		DHARWAD		GOMIA	
	MESU	PHC	MESU	PHC	MESU	PHC	MESU	PHC
How method works	84	78	63	61	60	71	88	87
How to use method	83	74	64	70	42	49	86	81
Effectiveness	80	74	60	60	46	60	83	57
Contradications	71	59	29	15	20	22	49	35
Side effects	71	52	29	12	46	54	70	26
Management of side effects	71	48	25	9	25	29	33	13
N	86	27	63	67	65	82	57	23
Received follow-up service	1	0	18	23	18	30	16	0

Table 10

COSTS OF MESU
(Rupees)

YEAR	LUCKNOW	BHUBANESWAR	DHARWAD	GOMIA
1984	68,900	32,620	90,879	93,668
1985	97,185	60,126	105,118	103,383
1986	89,272	55,653	115,251	127,412
1987	173,038	75,696	141,365	163,465
1988	173,038	75,885	145,454	136,746
1989	302,762	147,358	233,732	204,135
1990	222,086	145,917	238,720	207,934
1991	230,556	150,611	266,278	229,431
1992	279,617	185,357	313,209	278,820
Cost per capita (1992)	4.8	3.6	4.1	3.5

Population Covered: 57,605 in Lucknow; 51,062 in Bhubaneswar; 76,000 in Dharwad; 80,000 in Gomia

Table 11

COST EFFECTIVENESS OF MESU
(Cost per new acceptor in Rupees)

YEAR	LUCKNOW	BHUBANESWAR	DHARWAD	GOMIA
1984	71	90	138	154
1985	106	29	121	100
1986	85	26	119	86
1987	65	37	104	103
1988	63	36	100	76
1989	123	68	153	148
1990	139	109	164	273
1991	122	103	198	174

APPENDIX

Economic Data : India

Year	Rs./US$		
	Official	Market*	Rate of Inflation
1982-83	9.63		4.9
1983-84	10.31		7.6
1984-85	11.89		6.4
1985-86	12.24		4.4
1986-87	12.79		5.8
1987-88	12.97		8.2
1988-89	14.48		7.5
1989-90	16.66		7.4
1990-91	17.95		10.3
1991-92	24.52		13.7
1992-93	26.41	30.65	10.1
1993-94		31.36	8.4

* A dual exchange rate system was created in March 1992, with a free market for about 60 percent of foreign exchange transcations. The exchange rate was reunified at the beginning of March 1993 at the free market rate.

DEVALUATION OF THE RUPEE

A policy decision to devaluate the rupee has been taken twice during 1982-1994. This was on July 1, 1991 and again on July 3, 1991. The combined effect of these announcements was the devaluation of the rupee by 17.38 percent.