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END OF PROJECT EVALUATION  
MATERNAL AND CHILD HEALTH AIDE  
TRAINING PROJECT  
(621-0121)

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## I. EXECUTIVE SUMMARY

**Prepared by:** Donald H. Minkler, M.D. M.P.H., (for the evaluation team)  
**Date:** April 10, 1983  
**Project:** Maternal and Child Health Aide Training Project (621-0121)  
**Country:** Tanzania  
**Cost:** US \$12,354,000

**NOTE:** While the following set of questions and answers follow the prescribed AFRICA EVALUATION GUIDELINES issued by USAID in June, 1982, it is to be noted that the major thrust of this project lies in the transfer of knowledge rather than technology; therefore, the bulk of this evaluation report emphasizes the organization of services and the training and education aspects of the project, upon which the technology transfers described in this summary depend.

### I. What constraint did this project attempt to relieve?

The constraint addressed by this project was the shortage of appropriately trained manpower to carry out Tanzania's commitment to provide comprehensive, low-cost maternal and child health and child spacing services to its large rural population. The Tanzanian government began its program to expand primary curative and preventive health care in rural areas in 1971/72. The program reflected the government's commitment to equity and to health as a basic human right. The rationale for training and deploying a new cadre of health auxiliaries (Maternal and Child Health aides) included the large proportion of the population (over 90%) living in rural areas, the high cost of curative services, and the poor health status of rural mothers and children exemplified by high rates of maternal, infant and early childhood mortality and morbidity.

### II. What technology did the project promote to relieve this constraint?

The project promoted training of a new paramedical cadre in the use of simple, low-cost medical and child spacing technology in the following categories for the delivery of preventive services in Rural Health Centers and Rural Dispensaries:

For antenatal, intrapartum, postpartum care, MCH aides are trained to utilize:  
Weighing scales, sphygmomanometers, simple laboratory equipment, delivery kits.

For well child care:  
Growth charts, scales, vaccines, kerosene refrigerators, stethoscopes, health education materials.

For child-spacing:  
Modern contraceptives (pill, IUD, condom)

### III. What technology did the project attempt to replace?

The project attempted to replace traditional, often ineffective, healing practices, heavy reliance on untrained birth attendants and ineffective or dangerous child-spacing methods, such as induced abortion. It sought to upgrade village midwives eligible for MCHA training, and did not attempt to eliminate, but rather to complement, the role of traditional birth attendants by linking them with the rural health delivery system.

**IV. Why did project planners believe that intended beneficiaries would adopt the proposed technology?**

While the health infrastructure left by colonial governments in Tanzania was predominantly curative-oriented and urban-based, the Tanzanian government since 1967 has been steadily expanding its Rural Dispensary and Rural Health Center programs with an emphasis on primary health care and preventive services. It has also organized health campaigns to motivate the public to adopt promotive and preventive health practices.

The introduction of modern health technology by a specially trained cadre of MCH aides who were recruited from the rural areas in which they are to be posted assures that they are culturally and linguistically appropriate to, and familiar with, the attitudes and beliefs of the rural population they are intended to serve.

**V. What characteristics did the intended beneficiaries exhibit that had relevance to their adopting the proposed technology?**

The experience of existing rural health facilities provided both by the government and voluntary (missionary) organizations has demonstrated that the rural population will avail themselves of modern preventive and curative health facilities when they are provided by adequately trained personnel in service delivery sites within reasonable distance of their homes. An example provided in the previous (1976) mid-term evaluation of this project demonstrated that MCH clinic attendance and utilization increased measurably when the various service elements were "integrated" into a comprehensive MCH clinic format.

**VI. What adoption rate has this project achieved in transferring the proposed technology?**

One of the salient findings of this evaluation is that the management information system of the Ministry Of Health lacks the necessary data from which adoption rates can be derived. This finding and relevant recommendations appear in detail in the body of the report.

Lacking specific adoption rates, we can only deduce from the 1978 MOH Survey and the 1981 MCH evaluation of the MOH certain trends which suggest that adoption rates vary among technologies according to their dependence on critical logistic, transport and supply issues as well as social and cultural determinants. For example, even though dissimilar samples were compared, there seems to be an encouraging increase in adoption of antenatal care, births assisted by a trained birth attendant and hospitalization of children with measles. All of these reflect the impact of the training and education aspects of the project. On the other hand, there is little, if any, improvement in estimates of completed immunization of infants and children. This is attributed to constraints such as breakdown of refrigerators, lack of kerosene, and the scarcity of petrol. There is insufficient reporting of data to make any valid statement of the rate of adoption of contraceptive technology. The subjective statements of MCH staff in the field and the UMATI reports indicate that it is on the increase, but, nevertheless, it is clear that only a very small fraction of the rural population has adopted child-spacing to date.

**VII. Has the project set forces into motion that will induce further exploration of the constraint and improvements to the technical package proposed to overcome it?**

The project has demonstrated the validity of decentralized and regionalized perinatal services and, in the process, has highlighted the need for expanded in-patient facilities to accommodate high risk mothers and infants identified by MCHAs in perinatal care. It has certainly demonstrated dependence of immunization on an intact cold-chain and has already induced exploration (but no satisfactory solution) of the problems of kerosene supplies to keep refrigerators running at all rural health delivery sites.

In the area of child spacing, it has demonstrated that availability of contraceptives and family planning education does not necessarily assure adoption. It is not possible to ascertain the extent to which this project has set forces in motion to induce further exploration of the low contraceptive prevalence in the rural population. Rather the evaluation team regards the project as having created the infrastructure for integration of family planning naturally into the maternal and child health cycle. Thus, the technology is in place in anticipation of growing demand, as the factors conducive to adoption of child spacing begin to exert their influence.

Regarding improvements in the technical package proposed to overcome this constraint, the MCHAs have registered their clients' discontent with the available methods (the USAID-provided pill formulation in particular) and called for more acceptable pill formulations.

In view of a general (but unproved) consensus that interest in family planning is gradually increasing, and President Nyerere's recent exhortation to the public to adopt child spacing, it would seem that the training and deployment of MCHAs equipped to provide contraceptive advice as part of their package of MCH services is timely. The evaluation team finds no reason to believe that the diffusion of family planning in the rural population will be rapid. Rather, it would appear that measures "beyond family planning" will have to materialize before a measurable effect on national fertility trends can be expected.

**VIII. Do private input suppliers have an incentive to examine the constraint addressed by the project and come up with solutions?**

No. To the extent that Tanzania has no countrywide entrepreneurial private sector in the delivery of health services (particularly in the rural areas), the question does not apply to this project. Private voluntary organizations in the form of mission hospitals and clinics are addressing the constraint to the extent that they are responsible for the addition of one MCHA training center in 1981. They require no further incentive than the motivation which has prompted them to participate in Tanzania's rural health delivery system in the first place.

**IX. What delivery system did the project employ to transfer technology to intended beneficiaries?**

The network of rural health centers and rural health dispensaries conceived by the MOH to bring primary health within reasonable (10 kilometers) distance of more than 90% of the rural population and, specifically, the newly created cadre of MCH aides who form one of the three categories of health workers designated as the backbone of the rural health delivery system (MAs, RMAs, MCHAs).

X. What training techniques did the project use to develop the delivery system?

The MCH aides were trained by a specially selected and trained faculty in 18 specially constructed training centers. The techniques employed included didactic instruction, required readings, visual aides, teaching models, demonstrations, and practical field experience in rural service delivery sites. Additionally, teacher training seminars and workshops have been conducted for the training staff and some of them have been given participant training in US institutions. Guest faculty, including physicians, nurses and others from the community have also been utilized.

XI. What effect did the transferred technology have upon those impacted by it?

The USAID Project (as revised in 1978) planned a series of studies to assess the health impact of the MCH program. About \$240,000 was set aside for such activities, but ultimately used in other ways. Our evaluation was hindered by the lack of reliable service statistics, let alone any statistics that could shed light on the actual health impact of the program. Since the MCHA program is relatively expensive in terms of money and in terms of skilled manpower, it is legitimate to ask whether the health impact is sufficiently large to justify the expense, and to ask whether other alternative approaches such as mass immunization campaigns, mobile clinics etc. might have greater impact at lower cost. Before such issues can be examined, however it is essential to make some effort to gauge the health impact of the current program. A series of four studies is envisioned, aimed at four areas where an effective MCH program could reasonably be expected to show results: increased birthweights, resistance to childhood diseases, decline in neonatal tetanus, and contraceptive prevalence.

1. Birthweights. This study would assess the relationship between antenatal care received by mothers and the birthweights of their children. It would require comparison of the birthweights of children of mothers attending and not attending antenatal clinics, while controlling for a wide range of socio-economic, demographic and nutritional variables such as income, education, parity, family size, and maternal dietary patterns. The study would test the hypothesis that increased antenatal care results in a reduction in low birthweight infants.
2. Immunization of Children. Many factors combine to reduce the effectiveness of the immunization component of the program, with the result that many children receive partial series, others receive complete series but not at optimal time intervals, and others receive non-viable vaccines. This is reflected in reports of children who received immunizations but, nevertheless, contracted the disease (measles is the prime example). The question must be asked whether the fixed facilities are making a significant contribution toward higher immunization rates, and if not, what other approaches might work better. Aside from an evaluation of the Young Child Protection Programme by Mandara and Remme in 1980 (see Reference 5), essential data on MCH program impact are, however, lacking. A study to assess the relationship between immunological histories and disease histories of young children is required before an informed judgement can be made. The study would compare disease rates among children receiving various immunological series, those receiving partial series, and those receiving no immunizations, and gauge the extent to which immunization services are actually preventing children from contracting the various diseases.
3. Tetanus Immunization of Pregnant Women. MCHAs should be able to have a major impact on neonatal tetanus simply by administering the tetanus toxoid

to mothers during antenatal clinics. However, no data are available that would indicate whether the expected impact has materialized. A study is needed to compare rates of neonatal tetanus among children of mothers fully immunized and partly immunized at antenatal clinics, compared with non-immunized mothers.

4. Contraceptive prevalence. Current MCH program record-keeping is not adequate for assessing continuation rates, or for understanding what proportion of potential users are currently contracepting, or for understanding what socio-economic characteristics promote willingness to utilize contraceptives in Tanzania today. The evaluation's finding that child-spacing is not a high priority among rural MCH services, and the unrealized potential of an increased birth interval as a contributor to improvement in the health status of mothers and infants prompts the recommendation that an appropriate contraceptive prevalence study should be undertaken. This recommendation appears following the discussion of EOPS #3 in this report.

## II. EVALUATION METHODOLOGY:

This field end-of-project evaluation was carried out between March 15 and April 1 in Tanzania. Its objectives were as follows:

1. To determine to what extent the MCHA Project purpose and end of project status have been achieved;
2. to document what impact, if any, the development of a new cadre of MCH worker has had on the provision of MCH services, especially in underserved rural areas;
3. to address what effect the MCHA Project has had on the provision of MCH/FP services;
4. to determine the replicability/desirability of undertaking similar projects in other African countries.

It was intended that the team would consist of four U.S. and two Tanzanian members. The two APHA consultants were Dr. Donald Minkler, a professor of Ob/Gyn with prior teaching experience in East Africa (and a participant in the 1976 evaluation of this project), and Ms. Judith Rooks, President of the American College of Nurse Midwives, with international experiences in midwifery and family planning training. They were accompanied by Dr. Patrick Fleuret, a USAID Behavioral Services Advisor, with prior research and consultation experience in several East African countries. Because the former USAID Project Manager for the MCHA Project, Mr. John Burdick, has recently been transferred out of Tanzania, Ms. Barbara Kennedy (Regional Population Officer with REDSO/EA) was assigned to be Team Leader in view of her familiarity with the current state of the MCHA Project. However, she was unable to participate at the last minute because of a pressing assignment elsewhere, and Dr. Minkler was, therefore, asked to function as Team Leader.

Of the two designated Tanzanian team members, Dr. Tengio Urrio is the recently appointed Senior Medical Officer in charge of MCH and Nutrition in the MOH Division of Preventive Services and Dr. S.H. Rajab (who was Chairman of the Expert and Planning Committee for the MOH's 1981 MCH Evaluation) has been closely connected with the MCHA Training Project. Dr. Rajab, however, has been promoted to a new position in the Division of Health Promotion in the MOH, and was not available to participate in the evaluation.

The team's attempts to make contact with Dr. Rajab throughout the evaluation were unsuccessful. Without his participation, and that of Mr. Burdick and Ms. Kennedy, the team was at a disadvantage in its attempts to tap the resources, both in the MOH and USAID which could provide needed continuity of information regarding the project. The absence of any direct contact with the U.S. contractor in the evaluation was an additional disadvantage. These difficulties were compensated by the on-site cooperation provided both by the MOH and USAID in the conduct of the evaluation. The MOH assigned three of its senior nurses, Mrs. Gugu, Mrs. Mtwali and Mrs. Massila as resource persons. In the USAID Mission, Mr. Paul Ehmer, Health Development Officer, has assumed responsibility for monitoring the project since Mr. Burdick's departure. Without his patience and resourcefulness, much of the material which forms the basis of this report would have been difficult, if not impossible, to obtain.

The scope of work called for field trips to two parts of the country to visit MCH Training Centers, Regional and District Health authorities and service delivery sites. The division of the team into two groups for separate trips proved unworkable due to the scarcity of available vehicles and the dangerous road conditions due to heavy rains

in the southern part of the country. Since the size of the team had been reduced as indicated above and two USAID vehicles were available for the planned northern field visits, it was decided that the entire team would make the northern trip.

Sites were selected to give the evaluation team an adequate cross section of the MCH Training Project and the MOH Health Services from Regional Hospitals to dispensary level. Visits to the Dodoma, Arusha, Kilimanjaro and Tanga Regions were made between March 17 and March 25th. Altogether, the team visited four MCHA Training Centers (two preservice, one inservice, one upgraded PHN Training School), two regional hospitals, three district hospitals, one mission and one referral hospital, three rural health centers and six rural dispensaries. Upon its return to DSM the team recovered to consolidate its findings, prepare its report, and present its preliminary findings and conclusions to USAID and the MOH.

### III. EXTERNAL FACTORS: THE POLITICAL, INSTITUTIONAL, AND ECONOMIC CONTEXT OF THE MCH PROGRAM:

#### A. INTRODUCTION:

Tanzania achieved independence from England in 1961, inheriting a weak and somewhat distorted institutional and economic infrastructure. Both education and health services had been introduced by church missionary organizations, which continued to play important administrative and technical roles even as public services began to be developed in the 1930's and 1940's. Because the services were so scarce, and concentrated in a few favoured locations, they were urban-oriented and tended to be elitist in their impact.

During the first five years of independence this structure remained basically unchanged, with growing disparities emerging between areas with and without access to education, health services, and rewarding agricultural alternatives. In 1967, President Nyerere proclaimed the Arusha Declaration, which outlined a more equitable, rural-oriented development trajectory. Beginning with nationalization of major commercial entities, and proceeding in stages to administrative decentralization (1972/73), village-ization (1974/76 and the abolition of private cooperatives (1977), Tanzania has attempted to implement a socialist plan of development aimed at eliminating inequalities, while fostering the growth of services in the areas of health and education. The agricultural and industrial sectors have been heavily taxed to support this service expansion and subjected to a great deal of state intervention to the point that production incentives are now minimal. Stagnating domestic production, coupled with external problems stemming from poor weather, the 1973 and 1979 oil price increases, the costly war with Uganda, and the effects of recent worldwide recession on export marketing has resulted in severe shortages of both domestic and foreign revenue, with the result that continued expansion, or even maintenance, of existing health and other services is jeopardized.

#### B. THE HEALTH SECTOR:

In keeping with its commitment to equity in health services, the government of Tanzania has followed policies which strengthen the public sector of health as a basic human right. In each of its five year development plans, health policy has emphasized preventive rather than curative services, expansion of rural health facilities, training of paramedical personnel, and programs to control major communicable diseases.

Beginning in 1971/72 the Tanzanian Government began an ambitious program to expand primary curative and preventive health care in rural areas. This required a substantial reallocation of national resources into health-related investments, and within the health sector there was an attempt to hold expenditures on urban facilities to a level commensurate with population growth, while greatly increasing expenditures on the development of rural, primary facilities. Table 1 below shows the impact of this health sector policy expenditure during the period 1972/73 to 1978/79.

**Table 1: Expenditure of Health Services, 1972/73 - 1978/79.**

	<u>% of Total Health Expenditure Going to:</u>		
	<u>Urban Hospitals</u>	<u>RHC/RDs Preventive Services</u>	<u>Manpower Development</u>
1972/73	73	17	5
1978/79	60	30	6

Source: ILO:1982:94

During about the same period the share of the health sector in the national budget first rose from 5.2% (1970/71) to 8.9% (1973/74), but since then has declined to 5.6% (1978/79). The decline has been caused by diminishing domestic resources, and because domestic inflation has been substantial, the value of the health expenditures has declined in real terms at a rate of 1-2% per annum since 1973/74 (see Reference 3 in Appendix). (Mbilinyi 1982:310)

Although serious fiscal constraints have dampened the rapid expansion of rural services which occurred in the early 1970's, and the shift in favor of the rural sector has lost some of its momentum since the mid 70's, an impressive rural health service network has nevertheless been established and is operating. The diffusion of rural health facilities has been at a relatively low cost compared to that in other developing countries, and has contributed measurably to an increase in life expectancy from an estimated 41 years prior to 1970 to an estimated 52 years at present. The expansion in the provision of rural services which has taken place in the decade of the seventies is illustrated in Table 2.

**Table 2: Health Facilities in Rural Areas**

	1969/70	1978/79
No. of Rural Health Centres	50	183
No. of Rural Dispensaries	1,444	2,282
Pop. per Rural Health Centre	234,000	83,600
Pop. per Rural Dispensary	8,100	6,700

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Source: ILO: 1982:93

It is the overall conclusion of this evaluation that the construction of facilities and training and deployment of MCHAs are solid achievements of this project and are wholly in keeping with the planned growth of Tanzania's rural health system. These achievements, however, are now threatened by serious economic constraints and by problems relative to logistics and material support, posting and supervision of staff, and community relations which are addressed in the body of this report. It is our opinion that basic changes in project direction are not needed. Rather, continued government support of the Rural MCH Program with adjustments as indicated in the recommendations embodied in this evaluation, is needed to ensure that its momentum is sustained and its potential for improvement in the health status of Tanzania's mothers and children be fully realized.

**Recommendation 1:** The MCHA Training Project is basically sound and worthy of continuation. It should be sustained and supported by the Ministry of Health with assistance from the donor community where necessary. Local self-help efforts should be encouraged to cover recurrent costs wherever possible. Project training output should be monitored and adjusted periodically to the needs of the rural MCH Care Programme in order to maintain financially sustainable levels of each essential category of paraprofessional staff, and to avoid training more MCHAs than can be reasonably employed.

**Recommendation 2:** Although USAID is currently committed to starting no new projects, efforts should be made to invoke centrally funded resources, PVOs, and residual funds in the pipeline wherever possible to assist the project through the present economic crisis.

#### IV. & V. INPUTS and OUTPUTS: USAID PROJECT DATA:

The first PROP was signed on 6 June 1973, authorizing a total of U.S. \$5,199,200 to be spent on personnel, technical assistance, participant training, commodities, capital construction, and recurrent support during the period FY 1973-1978. The project was revised in January 1975 to increase the funding to U.S. \$8,340,000, to reflect price inflation and consequent increased costs of construction and recurrent support. In June 1978, the project was revised and extended to increase the funding level to U.S. \$12,354,000 through FY80. The additional funds were for more participant training, increased commodity support to RHCs and RDs, support to newly-instituted zonal centers, and also to meet the inflated costs of construction and recurrent support. Below Table 3, illustrating approximate levels and types of expenditure over the life of the project.

Table 3. Categories and Cumulative Level of Funding

	(Approximate)
1. Personnel	U.S. \$1,083,000
2. Participant Training	561,000
3. Commodities	1,392,000
4. Capital Construction, Recurrent Costs, Studies	6,271,000
5. Contraceptives	<u>3,047,000</u>
TOTAL	US.\$ 12,354,000

The following summary of project inputs and outputs is presented in tabular form for purposes of quick reference to the essential features of the MCHA Training Project. The lack of detailed output data, particularly in regard to costs per specific output component, is regarded as a weakness of this evaluation. It is attributable in part to the fact that MCHA training and deployment are not accounted for in MOH records in isolation of other components of the overall rural MCH service program. In addition, however, the general decline in retrieval of important management information within the MOH, coupled with the lack of access to either USAID, contractor, or MOH personnel responsible for the overall monitoring of the project in continuity hampered the evaluation team's access to detailed data considered essential to a complete end of project evaluation. The resolution of this problem is addressed in our recommendations dealing with the need for a further evaluation to assess specifically the impact of the project, its cost-effectiveness, and economic sustainability.

**TABLE 4: PROJECT INPUTS AND OUTPUTS**

**INPUTS:**

1. Capital Construction: Eighteen MCHA Training Centers constructed, furnished and equipped.
2. Personnel:  
A USAID population officer for project support, documentation and monitoring of the project;  
Technical assistance to the MOH for administrative support & for curriculum development and on-site guidance of the project;  
Short term consultants for evaluation of the project.
3. Recurrent Costs:  
The original authorization of U.S. \$5,199,200 included a projected \$1,200,000 for recurrent costs of the MCHA Training Program, over 1974-80. The original project authorization was increased on two subsequent occasions to a total of US \$12,354,000 through FY 1980, to account for inflation and increased costs of recurrent support, along with other inputs.
4. Commodities:  
Furniture, vehicles, equipment, supplies to be provided for MCHA training schools, and specific increments of equipment and supplies for RHCs and RDs.
5. Participant Training:  
US training for counterparts for US technical assistance staff, and teaching, administrative and logistic support staff of the MOH related to the project.
6. Studies:  
The 1978 Project Revision calls for

**OUTPUTS:**

1. Eighteen MCHA Training Centers completed and in operation (15 for MCHA training, 3 for upgrading MCHA's to PHNs)
2. A USAID population officer responsible for the MCHA Training Project was assigned to the USAID mission to Tanzania throughout the life of the project. Since completion of the project and subsequent transfer of the responsible population officer, responsibility for project inputs still in the pipeline rests with the Mission Health Development Officer.  
A contract with Loma Linda University provided one MCH physician and 3 PHNs as technical assistance staff throughout the developmental phase of the project. Consultants (USAID & MOH counterparts) provided for one mid-term and one end-of-project evaluation.
3. A quantitative accounting of actual expenditures for recurrent costs was not available to the evaluation team. For discussion of alternatives to recent trends in health sector expenditures relevant to this issue, see Section III.B. For potential expansion of community support for recurrent costs, see Section B in the discussion of End of Project Status #4.
4. For descriptive account of the present status of equipment and supplies and problems related to replacement of vehicles, refrigerators, etc. refer to the discussion of End of Project Status #4, with relevant recommendations.
5. A total of 74 individuals trained (47 long-term and 27 short-term) between 1976-80. See paragraph A-13, under discussion of End of Project Status #1 for detailed tables of trainee categories.
6. A survey of the MCH Program based on evaluation of 10 selected districts

studies to provide a firmer data base for further development and improvement of the MCH/Child Spacing program.

was conducted by the MOH in 1981. For a detailed discussion of this study in particular, and the limitation of the on-going management information system in general, see the discussion of End of Project Status #5. References to the need for specific impact studies are made in the Executive Summary of this report.

## **VI. PURPOSE:**

The project purpose, as stated in the original project paper is,  
"to assist the government of Tanzania in achieving an institutional capability to provide comprehensive MCH services to the rural population as an integrated part of the MOH Rural Health Programme."

In evaluating progress toward the project purpose, the evaluation team has chosen to address the series of End of Project Status conditions as set forth in the 1978 revision of the project.

## **VI. END OF PROJECT STATUS #1:**

**AN MCH TRAINING INFRASTRUCTURE FOR INITIAL AND CONTINUING EDUCATION IN MCH AND CHILD SPACING WILL HAVE BEEN CREATED.**

### **A. FINDINGS:**

#### **1. Administration:**

The MCHA training and field support are administered by two divisions of the Ministry of Health (MOH): the Manpower and Training Division (MCH unit of the Nursing Section) is responsible for the MCHA schools, and for testing, certifying, and posting graduates; the Preventive Services Division (MCH unit of the Promotive Services Section) is responsible for the MCHA's performance and support in the field. Training and service personnel cooperate at both the local and MOH levels in recruitment and selection of students and the posting of graduates. The two nursing officers responsible for this program in the Manpower and Training Division deal directly with the principals of the schools, whereas, the Preventive Services Division works along the lines of the larger governmental structure of the country, which is organized into 20 regions, the regions being comprised altogether of 104 districts. In addition, the MCHA field support system has a zonal administrative level between the MOH and the Regions - i.e., the MOH, 5 zones (2 of the larger zones will ultimately subdivide to make a total of 7), 20 regions, and 104 districts. Within the Preventive Services Division, administrative responsibility for the program involves the Senior Medical Officer in charge of the MCH Unit and one Nursing Officer in the unit who is responsible for continuing education and supervision within the program.

#### **2. The Schools:**

Eighteen MCHA Training Centers were built with USAID funding. One additional MCHA Training center was started in a Mission facility in 1982. Three of the schools were recently (1982-1983) converted to schools for upgrading MCHAs to Grade B nurses or Grade B nurses to Grade A. This leaves 15 USAID-constructed plus one Mission school devoted to training MCHAs.

The physical facilities of each school include a classroom; library; administrative and tutorial offices; storage space; kitchen and dining rooms; rooms for students (2 per room); toilet, bathing, and clothes-washing areas; a small nearby home for the principal's residence (built instead of the rural health center hostels called for in the original plan); an MCH clinic (for student clinical practice and patient care); a garden, and an electrical generator. Large electric stoves provided as original equipment have never been useable because they consume too much electricity. Additional traditional wood

or charcoal burning kitchen areas have been added. One school building (Same) has a drainage problem which possibly may cause significant structural damage in the future if it is not attended to.

### 3. Recruitment, Selection of Students, and Length of Course: Two Tracks, and Significant Changes over Time:

Since its inception, this has been a two-track training program: one set of schools (currently 4) conduct 9 month courses by which village midwives (see Appendix IV. for description of various nursing/midwifery cadre) are "upgraded" to MCHAs. The "village midwife upgrading course" has always been 9 months in length and the selection process remains the same. Working from a master list, MOH personnel select 4 - 6 village midwives (up to 50 years of age) from each region as the students for each class (4 schools with a total enrollment of 120 per 9 month course). The DMO or district MCHA coordinator can substitute one village midwife for another from the same district with permission from the RMO and Regional MCH Coordinator. After completing the course, these students are always posted back to the district from which they came. As MCHAs their salary starts at 780 shillings per month, whereas the salary for village midwives starts at 490 shillings per month and goes only as high as 680 shillings per month.

The other track is the "pre-service" MCHA Training course for women who are not already midwives. The first class of "pre-service" students was admitted in 1976. They were selected from hospital ward attendants who had passed a special entrance exam. This course was 18 months long. Many of them probably ultimately returned to work in the hospitals from which they had come.

In 1977, the criteria for selection of pre-service MCHA students were changed to the following: a female between the ages of 20 and 35, in good physical and mental health, who has completed at least 7 years of primary school, is interested in MCH and has been recommended by the political leaders of her village. These criteria are still in force; they have been more vigorously applied with program experience and the passage of time. (A 1981 evaluation of the program by the MOH revealed that only 72% of 71 students interviewed had actually completed their primary education.) Since 1978, applicants have also had to take an entrance examination. In 1980, the course was increased from 18 months to two years and a new, much improved curriculum was initiated. To date only one class of MCHA graduates (458 MCHAs) has been trained under this new program.

Current Selection Procedures: Information about the availability of MCHA training goes down from the MOH through the political system to the districts and the villages. Applications approved by the local leaders are forwarded back up through the system to the RMO. In each region the RMO, Regional MCH coordinator, the Principal of the local school, and a regional party official sit together as a group to interview all applicants. Based on these interviews, 50 candidates from each region are selected to take the written entrance examination. The total of 360 pre-service MCHA training slots (available every 2 years) are divided equally among the 20 regions, yielding 18 slots per region. Those 18 candidates from each region who score best on the test are enrolled. Although there is a theoretical pass/fail line for test results, the top 18 from each region are accepted, even if some fall below that line.

#### **4. The Students:**

The two kinds of schools also differ in the kinds of students they enroll. Students in the village midwife upgrading schools tend to be older than students in the preservice schools and almost all have children, i.e. the 32 students at Kondoa upgrading school ranged in age from 23 to 50; 24 were married (including all of the younger ones), while some of the older students had never married or were divorced. All of the students had children, some of the older ones having as many as 6, 7, or 8 children, although some had parity patterns indicative of recent use of family planning: i.e., one student had children aged 21, 20, 18, 16, 12, 10 and 4; another had children aged 20, 18, 16, 9 and 10 months. Twenty-seven students had children age 6 or younger, whom they had to leave to attend this school.

In contrast, students from the preservice schools are predominantly young, unmarried, and have not yet begun to have children, i.e., of 36 students at Mbulu school, 29 (81%) were aged 20-22, 34 (94%) were unmarried, and only 6 (17%) had any children.

Because of these differences in age, marital status and parity, it is predictable that a much larger proportion of students from the village midwife upgrading schools will be successfully posted to dispensaries and health centers in rural areas. Those who have not yet married will probably never marry, whereas, the husbands of those who are already married live in rural villages, so that is where they will return. This advantage, however, is balanced by the disadvantage that the village midwife upgrading schools make no net contribution to the total number of trained health workers in the country.

Less than half of the students understand English well enough to find use in books written in that language. They also enter the program with weak arithmetic skills. Older students tend to be stronger in both English and math, as primary education used to consist of eight years and was more academic in orientation, whereas, the current standard is seven years and much of the time is spent in practical work exercises. In addition, most students finish primary school by age 16. As MCHA students must be at least 20, almost all have been away from school for at least four years when they enter the program; English and arithmetic skills they may once have had are rusty.

#### **5. The Tutors: Training of the Trainers:**

Each school is intended to have a principal, two other tutors and a warden. Although the warden's role is mainly custodial, managerial and supportive, all wardens are nurse-midwives; in some schools they make some contribution to supervision of students in clinical areas and in the field. Every school has a warden. Not including wardens, each school should have a total of three faculty members. In fact, there are only 30 tutors (only two-thirds of the number required) among all 15 MCHA schools (not including the one school which is administered by a religious organization). One school has four tutors, one school has three tutors, ten schools have two tutors; three schools are staffed by only the principal plus the warden. Disparities in the number of tutors per school are attributed primarily to the need of married tutors to live where their husbands work and reside, and to move when their husbands move. When attrition or transfer of married tutors results in disparity, MOH staff think it unfair to transfer unmarried tutors from the schools in which they are already working in order to distribute them more equitably among the schools. In addition, some schools

are in locations which may be unattractive to tutors for a variety of reasons; at least one school (Kondoa) has never had its full complement of tutors.

The only cadre of Tanzanian nurses with any formal preparation in teaching are those who have completed the 18 month public health course by which Grade B nurses are up-graded to Grade A (or Public Health Nurses = PHNs). This course includes a review of maternal and child health, with a special focus on nutrition, food preservation and storage, and immunization programs; epidemiology and the use of statistics; and teaching and learning, including two months of practice teaching. Although PHN preparation is conceived as the source of basic teacher training for MCHA tutors, in reality, PHN-prepared nurses are a rare commodity; there were only 168 in the entire country as of 1981. The country's single school for PHN upgrading (Muhimbili) produces thirty-six graduates per year. Only two-thirds of the current MCHA faculty (20/30) are PHNs. One school has no PHN prepared faculty; ten schools have one, two schools have two and two schools have three. It appears, however, that most or all faculty have strong experiential backgrounds in MCH, including at least some work in rural areas. All are trained as nurse-midwives. In addition, of seven tutors in the three MCHA schools visited in this evaluation, two had completed a special nine-month MOH course in nutrition and health education, and one had attended a one-month family planning course given by UMATI. MOH Training and Manpower Division officers intend eventually to send all MCHA faculty to both the UMATI family planning course and to a special 5-week course in health education. Although 16 MCHA faculty members have been sent to the UMATI course to date, only half of those so trained are still functioning as MCHA tutors; only 8 (27%) of the current faculty have had this training. Seven MCHA tutors have been sent to the health education course, of whom five are still employed as tutors (5/30 = 17%). A few MCHA faculty members are also invited to participate in other courses offered from time to time by the MOH for teachers of a variety of health care cadres.

In addition to these institutional training sources, several teacher training courses and seminars have been conducted specifically for the MCHA faculty: prior to opening the first school in 1974, the MOH conducted a special 3-week course to instruct newly recruited teachers and wardens in teaching methodology and school administration and to orient them to the MCHA curriculum. A similar 5-weeks course was conducted for all MCHA faculty and wardens in 1975. Of the current staffs of the MCHA schools, 12 of 30 tutors and 11 of 15 wardens attended these seminars in 1974 and 1975.

The MOH Manpower and Training Division has conducted a special 2 - 3 week seminar for MCHA faculty every year since then, with the exception of 1982, this exception being due to funding problems. The seminar for this year will be held this coming May/June. MOH trainers have planned the seminar to address training weaknesses identified during their 1981 internal evaluation of the program.

Two of the original faculty members had one year of special training in the United States (at Loma Linda), but neither are still at their original posts. However, another Loma Linda-trained nurse is currently being considered to replace the principal at one of the schools.

Between annual seminars the MCHA school faculties receive some direct supervision from the MCH Nursing Officers in the Manpower and Training Division of the MOH. During earlier years, when more money was available to the project, the MOH nursing officers were able to visit every school every year. Last year only five schools were visited by the MOH.

Although faculty supervision of students during field experience months provides some informal opportunity to assess the performance of their graduates, the MCHA schools have developed no mechanisms to insure feedback from their graduated students regarding the adequacy and relevancy of their training, or to obtain their graduates' suggestions for curricular changes based on their experiences in the field. Faculty participation in annual 3-day continuing education seminars for MCHAs does provide an opportunity for feedback, as does their proximity to the District MCHA Coordinator, who works out of the District Health Center (where the schools are located) and who is responsible for continuing supervision of the MCHAs.

The 1981 MOH evaluation of the MCHA program detected some serious deficiencies in the knowledge base of the MCHA tutors. For example, of 21 MCHA teachers (including 8 wardens) interviewed during that evaluation:

- 3 (14%) did not respond to any of the questions intended to measure their knowledge of correct immunization procedures;
- of the 18 teachers who responded, only 16 (89%) knew that 3 doses of DPT vaccine are necessary for the protection of infants;
- and only 48 and 81 percent, respectively, knew the correct way to store polio and measles vaccines.

Despite their additional responsibilities, MCHA school tutors are paid the same salaries as other nurses of the same grade, i.e. all Grade A Nurses are paid according to one salary schedule, all Grade B Nurses according to another. MCHA school faculty are not paid any more than similarly educated nurses who work in hospitals or clinics.

## 6. The Curriculum:

The original (18 month) preservice MCHA curriculum was developed in 1975 by personnel from the MOH, with technical assistance from USAID/Tanzania, the contractor, and WHO. All of the field experience in the curriculum (6 of 18 months) was at the end of the program. Students completed all classwork, then left for 6 months, after which they went directly to their postings - with no evaluation, no followup, no opportunity to correct or to consolidate. These and other deficiencies were soon recognized, and a revised curriculum was designed by MOH Nursing Officers and two Loma Linda Nurse Advisors. The new curriculum was implemented for classes entering the preservice MCHA schools in 1980. Major changes in the new curriculum as compared to the old were:

- (1) increase in the length of the program from 18 months to 2 years;
- (2) placement of the field experience at the 8th and 19th months, instead of at the end of the program; and
- (3) major improvements in the curriculum in regard to anatomy and physiology, family planning, and basic nursing.

Of 775 classroom hours in the new curriculum, 160 hours (21%) are devoted to Fundamentals of Nursing, 30 hours (4%) to anatomy and physiology, 220 hours (28%) to maternal health, 160 hours (21%) to child health, 160 hours (21%) to community health, 45 (6%) to clinic management, and 80 (10%) to political education. All subjects are integrated (taught concurrently) throughout the curriculum. Except for about 7 weeks per year completely devoted to classroom learning and one month (previously 3 months) per year devoted to field experience (at rural dispensaries or rural health centers), clinical and classroom learning are also integrated throughout the program: 2 days per week devoted to classes; three and a half days devoted to clinical practice. In the

preservice program, the first month of field experience comes at the eighth month of the program; the second field experience comes at the 19th program month. In the 9-month village midwife upgrading program, one month of clinical experience comes in the middle (4th month) of the course. Although this kind of complicated integration is relatively new to Tanzanian nursing educators, and has been confusing for some, they are making a real effort to conform to the curricular design and seem to be relatively comfortable with it.

In addition to the major curricular changes started in 1980, some which are now being considered include:

- (1) addition of English language training; and
- (2) some effort to improve students' basic arithmetic skills.

The village midwife upgrading program at Kondoa has added five hours of English training per week; the preservice program at Mbulu has added one hour of English training per week. In both cases the English is taught by local primary school teachers on a voluntary basis. Arithmetic is being discussed, but there is no evidence of implementation yet.

Some deficiencies noted in the curriculum include:

- A clear listing of the drugs which MCHA students/graduates are responsible to dispense. Pharmacology is so well integrated into the rest of the curriculum that it is difficult for students to be sure which drugs they are responsible for - i.e., to know the drug purpose, action, dosage and schedule, contraindications, and possible adverse effects. It would be helpful to have a clear and definite list. Lack of clarity regarding the RMA's responsibility for drugs in relation to the role of the MCHA may be one reason for the lack of a more straight-forward approach to teaching pharmacology in the MCHA curriculum.

Because of the very limited implementation of family spacing by MCHAs in the field, this aspect of the curriculum was examined in more depth. Some problems noted include:

- As the curriculum is implemented at the school in Same, the didactic child-spacing material does not come until very near to the end of the program, after the students have already had both of their one-month field practice experiences. We are unsure whether the timing of the didactic child spacing material is the same in the other schools. If so, this timing means that, during most of their supervised clinical and field experiences, MCHA students do not have the theoretical base to practice child-spacing skills.
- Tutors lack references to back up their teaching of child spacing, i.e., although Hatcher's Contraceptive Technology is cited as a reference for this section of the curriculum, the book was not on the shelves of the libraries of any of the three MCHA schools visited by the team.
- An otherwise excellent paper by Richard Evans in the appendix to the curriculum states that use of any child-spacing method for more than three consecutive years "will reduce fertility somewhat". This is not an accurate statement, and surely must be frightening to the students, who would not want to be responsible for giving a woman something which would damage

her. In fact, oral contraception probably helps to preserve fertility by the protection it provides against pelvic inflammatory disease. Other incidental health benefits of contraception (e.g. reduced anemia) also are not noted.

- The section on IUDs does not provide enough information to enable an MCHA to recognize the signs and symptoms of pelvic infection. The advice not to remove the IUD before treating an infection is out of date. The danger of tubal infertility resulting from IUD-associated pelvic infections is not noted.

## **7. Teaching and Supervision of Students:**

Some of the lectures are given by guest faculty, including physicians or nurses from the nearby District hospitals, and other experts available in the community. These "external teachers" often don't follow the curriculum, i.e., at Kondoa one member of the team observed a class on the anatomy and physiology of the eye, which was being taught by a male nurse (specialist in ophthalmology) from the Kondoa District Hospital. Although he was a good lecturer, his presentation focused heavily on diseases of the eye and their treatment, (not in the MCHA curriculum), and did not cover some of the other aspects specified in the curriculum, e.g., how to cleanse the eye and how to protect eyes from infection.

Much of the students' clinical and field supervision is left to the nursing and paramedical staffs of the hospitals, clinics, health centers and dispensaries in which the students' have their practical experience: although these staffs serve the students as teachers, supervisors and role models, most of them have never seen the MCHA curriculum and may not fully understand the role for which MCH aides are being prepared.

## **8. Books and Other School Supplies:**

Although the schools are basically adequately equipped (e.g., blackboards, duplicating equipment, etc.) they suffer occasional shortages of teaching supplies such as chalk, and frequent shortages of certain foodstuffs for making the students' meals.

There are an adequate number and variety of textbooks for student use, although approximately half of the books are in English, and so are relatively unlikely to be used. Of nineteen books issued to students at Kondoa School, ten were in Kiswahili, nine in English. USAID supplied books during the early years of the program (until 1980) and AMREF has supplied some since. Translation of curriculum to Swahili would be most useful for students themselves, but translation of English to Swahili has the difficulty of losing precise meanings.

Adequate reference books for tutors are not available in all subjects, particularly anatomy and physiology, basic nursing, and family planning. Even references specifically cited in the curriculum are not necessarily available (e.g., Contraceptive Technology, R. Hatcher, et al's manual of family planning practice).

## **9. Student Field Experience:**

Field experience, i.e., practicing the MCHA role at a rural dispensary (RD) or rural health center (RHC), constituted six months of the original 18-month preservice school curriculum. When the new two-year curriculum was implemented in 1980, this was broken into two three-month segments, one to be taken during each of the two years. Although there are still two field experiences, they were shortened from one to two months for students who entered the program in 1981 and further reduced to

only one month per year for students who entered the program in 1982. Because of the circumstances of some schools, the actual time for each field experience may be as short as two weeks, i.e., the principal of Mbulu School reported that, for her students, two of the four field experience weeks are consumed by travel to and from the field, plus the time necessary to introduce students to the local leaders and to orient them to and settle them into their new environments (e.g., buying food, etc.). Her students have only two weeks to actually practice their MCHA roles at the rural dispensaries and health centers. She thinks that this is not enough time. The reason for the reduction of field time is to save money; students are paid a 480 shillings/month stipend while they are in the field.

The various schools send their students to the field in groups consisting of from two to six students, each group going to one rural dispensary or one rural health center. Each group of students is visited by a tutor at least once (some twice) during the field experience. Tutors at well-staffed schools are able to spend a total of two or three or even more days with each group of students, whereas, tutorial field supervision of students in poorly staffed schools must be very brief and is clearly inadequate.

The influence of the staffs of the field facilities (RDs and RHCs) on the students' learning is very great. They not only provide the majority of student supervision, but are also the students' role models. Virtually none of the staff of the RDs or RHCs have any formal introduction to teaching methodology, so most of their influence is exerted by the examples they provide. Therefore, the quality of MCHA practice in the RDs and RHCs which are used for student field experience is a critical factor in the quality of their training. Incorrectly performed procedures, omissions of care, careless work, or bad attitudes observed by students during field experiences are highly likely to be internalized. Tutors at some schools attempt to judge the adequacy of specific RDs or RHCs as sites for student field experience by asking the students about the supervision they receive from the RD or RHC staffs, and by discussing individual students with the staff members. In addition, the RD and RHC staff fill out a report on every student. The RD/RHC staff have neither a copy of the students' curriculum (to be sure of what they are supposed to be learning), nor a clear guide to indicate specific experiences each student should have. Therefore, the extent to which each student actually participates in all of the significant experiences may be somewhat haphazard.

During field experiences students live at the RD or RHC, sleeping on cots and doing their own cooking. They are expected to conduct clinics, manage deliveries, conduct health education sessions, meet the local leaders, and find and talk to at least one traditional birth attendant (TBA). In addition, they are expected to study the local community. When they return, each group gives a report on the village they were near, (e.g., size, type of population, customs, and traditions), as well as interesting cases, etc. These reports are the focus of the curriculum for about two weeks after the students return.

## **10. The Final Examination:**

There is both a written and a practical component to the final examination. Students who fail either part can try two more times each after three months. (Village Midwife students also can try twice, and also have to wait three months between tries; in the meantime, they return to their original posts where, hopefully, they practice as MCHAs while continuing to be paid as village midwives.)

The practical examination is administered by the Regional MCH Coordinator. It may be conducted at either a hospital or rural dispensary. Presumably it is almost always actually administered at a hospital. Students are observed in practice (including performing at least one procedure) in each of three areas - the maternity clinic, the well-child clinic, and the pediatric hospital ward. Some students fail the practical exam, i.e., of 33 students who were tested last year in Kondoa, three failed the practical exam and five failed the written exam. Very few, if any, graduates fail the examination twice.

The written exam also consists of three parts: maternal health, child health, and community health. There are both multiple choice and essay questions. A different test is constructed each year. Tutors from each school send suggested questions to the two MOH nursing officers who administer the MCHA school program; they construct the exam from the contributed questions. Last year's written examination contained no questions on family planning. (Experience shows that teachers everywhere "teach to" national certifying examinations, i.e., subject matter not included in the tests is de-emphasized in the teaching program.)

In the early years of the program, a significant number of students failed the tests on their first tries, i.e., of a sample of six schools whose test results were analyzed by the MOH, 29 of 198 students (15%) failed the written exam in 1977, and 89 of 180 students (49%) failed in 1978. However, there were only two failures among students of these six schools in 1979; only one failure in 1980; 21 (10%) in 1981; and 8 in 1982. The 1977 graduates presumably did better than the 1978 group because they had been chosen from among hospital ward attendants who had passed a written entrance examination or else were village midwives. In contrast, the 1978 graduates were without previous hospital experience and had not been required to pass an entrance exam - an additional selection criteria which was added in 1978. Greatly improved test performance after 1978 probably reflects better selection of students and better teaching as the faculty grew more experienced. Another factor, however, was that after 1978 the test was changed to make it "more realistic".

## II. MCHA Performance After Posting: The Lack of an MCHA Manual:

The effect of MCHA performance in the field is discussed under EOPS #3, which is an assessment of the availability of comprehensive MCH and child spacing services to Tanzania's rural population. However, one aspect of MCHA performance is so closely related to the MCH training infrastructure that it deserves discussion here. After they complete their training and pass their tests, MCHAs are posted to the field without a manual. In addition, most MCHA graduates have no books to take with them to the field. The first group of graduates were given books paid for by USAID. Every class since then has left without any books. Most MCHAs in the field have no references except their own class notes, which some keep at their homes rather than risk losing or dirtying them at the rural dispensaries/health centers. Preparation of an MCHA manual was not built into this program as a project output.

Although students have been encouraged to buy their own books, most have not done so. When this was discussed with a group of graduate MCHAs from the Same area, some said they wanted to buy books but did not know where to go to find them (although some books are said to be available at town book stores from time to time). They are said to cost 50 - 60 shillings (6-8% of the monthly salary of a newly graduated MCHA). Some MCHAs in the Mbulu area have bought books sold by AMREF in association with continuing education sessions.

## 12. Supervision and Continuing Education for Posted MCHAs:

### a. Supervision:

The three MCH Nursing Officers in the MOH have primary responsibility for overall supervision of the MCHA program. In addition, there are five zonal MCHA coordinators, and each of the twenty regions has a regional MCHA coordinator with responsibility for supervision of the district MCH coordinators in their regions. Sixteen (80%) of the twenty regional MCH coordinators are graduates of the 18 month Muhimbili Public Health Nursing Course, which includes teaching/learning theory and practice.

Immediate administrative supervision of posted MCHAs lies with Rural Medical Aides (RMAs) or Medical Assistants (MAs), the paramedicals who are responsible for the curative care and administration of the rural dispensaries and rural health centers. Although responsible for direct supervision of the MCHAs, RMAs may be little better trained; some have only primary education plus a three-year RMA curriculum, whereas, others have secondary education plus a two-year curriculum. They are less well trained than the MCHAs in maternity and well-child care. Technical supervision of the MCHAs, therefore, is largely in the hands of the District MCHA coordinators.

The only means of transportation available to most MCHA coordinators is public transportation (buses), which they are loath to use, or occasional use of landrovers under the control of other local government/health officials. The frequency of MCHA supervision varies according to how distant they are from the district hospital (out of which the MCHA Coordinators work) and the access of the MCHA Coordinator to transportation, i.e., the MCHA Coordinator in Same is married to a government official and has access to a landrover. She reported that she used to visit every dispensary in the district once a month, but that she now has changed this to once every three months in order to save her car from wearing out. She visits those in the easy-to-reach lowlands of the district more frequently than those in the mountains, which take long and are difficult to reach.

The last visit of the MCHA Coordinator to Gunyoda Rural Dispensary was sometime in 1982; her last visit before that was in 1980. The last supervisory visit to Daudi Rural Dispensary was by the District Medical Officer in July, 1982 (eight months before our evaluation visit). The last MCHA Coordinator visit to Sogole Rural Dispensary was only one month before the evaluation team visit.

MCHAs who receive unfavorable reports (from the rural dispensary RMA or the rural health center MA) are not dismissed, although it is possible that their promotions are delayed. In serious cases they may be reassigned to locations nearer to the district headquarters, where they can be more closely supervised by their District MCHA Coordinators.

MCHA Coordinators fill out a MOH form for each supervisory visit. They check on supplies and the functioning of equipment, and review the MCHA's patient records (logs recording deliveries and well-child, antenatal, and family planning visits). The MOH form also suggests several questions the MCHA Coordinator should ask to assess the MCHAs technical knowledge in specific areas, but the questions have not changed since 1976. The supervisor also asks the MCHA if she has any questions or problems and tries to answer or solve those which are mentioned.

Like the MCHAs, the MCHA Coordinators also have two lines of supervision. They are directly under the Medical Officer of their district, and are also supervised by

a Regional MCHA Coordinator. The Regional MCHA Coordinator in turn is administratively under both the Regional Medical Officer and the Zonal MCHA Coordinator. Zonal MCHA Coordinators are directly responsible to the MCH Unit, Preventive Services Division of the MOH.

b. Continuing Education:

Yearly continuing education seminars for MCHAs and for MCH Coordinators have been funded by UNFPA each year, except for 1982. No continuing education seminars were held last year because the MCH had not complied with one of UNFPA's financial management rules during the preceding year. UNFPA funding is available this year, and the continuing education courses have been scheduled and planned.

The Nursing Officer in the MCH Unit, Preventive Services Division of the MOH, has primary responsibility for planning these seminars. She does this with assistance from the five Zonal MCHA Coordinators, who come to Dar es Salaam for one week to plan the program. Together the MOH Nursing Officer and the Zonal MCHA Coordinators decide the objectives for the seminar and outline the curriculum. Each participant of the planning meeting prepares a lesson plan for part of the seminar. The compilation of these lesson plans comprise a set of detailed directions for the entire three-day program. This then is reproduced and is carefully followed as the same seminar is given by different people in 35-40 separate locations throughout the country (one or two locations in each region). The Zonal MCHA Coordinators select local medical and other leaders to actually conduct the seminars, depending on the subject matter of the seminar in any particular year. Although the MCHA Coordinators are the specified targets of this series of seminars, they constitute only a small number of the people who attend. Other people invited include the District Medical Officers and District Nursing Officers and a sampling of RMAs, MAs, MCHAs, and health officers. In addition, one person from the MOH (MCH units of either the Preventive Services Division or the Manpower and Training Division) attends each seminar. The major goals for this year's seminars will be to improve immunization coverage (especially followup and maintenance of the cold chain), to improve the recording and reporting of vital events, to improve outreach of the MCH program into the communities, and to improve the provision of family planning services. The MCHA Coordinators, in turn, are supposed to conduct annual three to four day seminars for MCHAs in their districts (also funded by UNFPA). The MCHA Coordinator in Same is planning a four-day seminar which will focus on how to work with TBAs and how to repair the refrigerators. (Although the evaluation team did not find any malfunctioning refrigerators - only refrigerators not working because of lack of kerosene - a Tanzanian has been sent to Sweden to study kerosene-refrigerator maintenance and repair; he will be teaching this part of her program.)

The Preventive Services Division of the MOH gave a two-week seminar on administration and teaching methods for all twenty Regional MCHA Coordinators during their 1981-1982 fiscal year. They did not have a seminar in 1982-1983, and are unsure whether they will be able to have one in 1983-1984. It will depend upon whether UNFPA will pay for it.

13. Participant Training:

All three MCH Nursing Officers in the MOH, all five Zonal MCHA Coordinators, and one (of twenty) Regional MCHA Coordinators were among the twenty-one nurses who had one year of USAID-supported training in the United States (at either Loma Linda University or Emory University School of Nursing) early in the life of this project.

Others, directly or indirectly related to the MCHA training program, who have received participant training in U.S. institutions, are summarized in Table 5. The MOH was not able to provide the evaluation team with detailed data on the current posting or professional activity of each individual trained under the project. Accordingly, our attempt to analyze the data summarized in Table 5 was of necessity restricted to word of mouth information and personal recall, chiefly from the Tanzania members of the evaluation team. Such information was admittedly subjective and incomplete, and does not permit specific identification of all the individuals represented in the table. Nevertheless, it indicates that participant training has contributed substantially to personnel development at several levels, and especially at the central decision-making levels of the MOH. Our conclusion is that the participant training objectives of the project have been fulfilled.

**Table 5: Summary of U.S. Training of Tanzanians Supported by MCHA Project, by Length of Training, Subject of Training, and Discipline of Trainees, 1976-1980.**

**A. Trainees by Subject Studied or Degree Earned and Length of Training:**

<u>Subject or Degree</u>	<u>Short Term (less than 9 mos.)</u>	<u>Long Term (9 mos. +)</u>	<u>Total Trained</u>
MCH/Nursing	7	34	41
Family Planning	15	-	15
Visual Health	1	-	1
Health Planning	1	-	1
Economic Development	1	-	1
Nutrition	1	-	1
Production of Visual Aids	1	-	1
MPH (Degree)	-	12	12
BSN (Degree)	-	1	1
<b>TOTAL</b>	<b>27</b>	<b>47</b>	<b>74</b>

**B. Trainees by Occupation or Discipline:**

Nurse/Midwife	10	33	43
Physician	4	11	15
Economics/Development	8	-	8
Nutrition	2	2	4
Education/Training/Visual Aid Production	2	1	3
Agriculture	1	-	1
<b>TOTAL</b>	<b>27</b>	<b>47</b>	<b>74</b>

#### **14. USA Contractor:**

U.S. technical and administrative support was provided to the project by the faculty of Loma Linda University's Schools of Medicine and Nursing. Altogether, three Loma Linda Public Health Physicians and three Public Health Nurses were assigned on a long term basis beginning in 1974. A special effort was made to collaborate in their work with counterparts within the MOH in order to insure continuity of the project upon termination of the contract.

At the time of this evaluation, all three of the Tanzanian MOH counterparts to the Loma Linda nurses are actively involved with the MCHA training program and hold key positions as Nursing Officers in the MOH. Of the three Tanzanian physician counterparts, one is deceased, one has retired, and the third, who was responsible for the MCH service program in the MOH, has recently been promoted to a higher rank in the Division of Preventive Health Services. His successor, Dr. Tengio Urrio, Senior Medical Officer in Charge of the MCH and Nutrition Unit, Division of Preventive Services, is an experienced public health physician (has been DMO in two districts), and earned an MPH at Harvard School of Public Health as a participant in the MCH training project.

**Conclusion:** The objectives of the U.S. Technical Assistance component of the project have been fulfilled, and the MOH has acquired the requisite administrative and supervisory capability to sustain the MCH training and service program.

## **B. RECOMMENDATIONS:**

### **Re: Recruitment, Selection of Students:**

- 1) Strict adherence should be maintained to the requirement of completion of grade 7 for admission to MCHA training.
- 2) Items should be added to the entrance exam to measure basic arithmetic skills.
- 3) Instead of selecting students from each region on the basis of the rank order of their entrance examination results, preference should be given to married applicants who have passed the examination and who are living with their husbands in MCH-underserved areas of their districts.

### **Re: Tutors, Training of the Trainers:**

- 1) In order to assure quality training, MCHA schools should each have a full complement of faculty. Ideally, fifteen additional tutors are needed to fill the current shortage. If it is not economically feasible to recruit additional tutors at this time, we recommend consolidating existing faculties into a smaller number of schools rather than continuing schools which are not fully staffed.
- 2) After this initial effort to increase the number of faculty up to the planned levels, every effort should be made to replace tutors who leave the program with new teachers prepared as Grade A PHNs.
- 3) When necessary, unmarried tutors should be reassigned to a different school in order to avoid having only one faculty member at any school.
- 4) To the extent that PHN-prepared nurses are not available, the project should continue to emphasize MCH experience in rural areas as a criteria for selection of tutors.
- 5) Some salary increase should be provided to the tutors (now paid at the same rate as similarly prepared nurses who work in hospitals or clinics).
- 6) One session at each annual MCHA continuing education seminar should be devoted to small group discussions between graduate MCHAs and MCHA tutors, with the stated purpose of providing feedback to the tutors regarding strengths and weaknesses of the MCHA's preparation relative to the needs they perceive once they are in the field.
- 7) The project should continue with plans to address those specific knowledge deficiencies of tutors which were identified by the 1981 MOH program evaluation.

### **Re: The Curriculum:**

- 1) A precis of the curriculum should be prepared in Kiswahili.
- 2) The project should go forward with concrete plans to add basic arithmetic and English training to the curriculum.
- 3) A list of drugs which MCHAs are responsible to dispense should be abstracted from the curriculum, along with a summary of the knowledge about each drug

for which they are held responsible - e.g., action, dosage schedules, storage, contraindications, possible untoward reactions.

- 4) Didactic material on child spacing should be taught during the first year of the 2-year curriculum, and near the beginning of the 9-month curriculum.
- 5) The written curriculum should be revised to:
  - (a) avoid giving students the impression that continued use of all child spacing methods results in reduced future fecundability;
  - (b) improve the section on complications associated with the use of IUDs;
  - (c) in addition to discussion of contraceptive risks, include discussion of the incidental maternal health benefits associated with the use of specific child spacing methods - e.g., reduction of anemia and tubal pregnancies associated with hormonal contraception.
- 6) The curriculum should be reviewed periodically to bring it into conformity with new developments in the theory and practice of MCH.

#### **Re: Teaching and Supervision of Students:**

- 1) Copies of the curriculum precis (in Kiswahili) should be made available to external teachers who assist in didactic teaching, and to the MCH and medical staffs of the hospitals, health centers and dispensaries in which students have their clinical and field learning and practice experiences.
- 2) At least one member of the MCHA faculty should remain in the classroom while external tutors are teaching.

#### **Re: Textbooks and Library Resources:**

- 1) References on anatomy and physiology, basic nursing, and contraception should be added to the MCHA Training Centre libraries.

#### **Re: Student Field Experience:**

- 1) The time of each field experience should be increased to two months.
- 2) A clear outline should be provided of the objectives of the field experience, including a quantified enumeration of the activities which the students are expected to perform.

#### **Re: Final Exam:**

- 1) At least one question on child spacing should be included each time the final examination is given.

#### **Re: The Performance in the Field:**

- 1) A manual for MCHAs should be written in Kiswahili. Every MCHA should have a copy of the manual. It should be in a type of notebook which allows for pages to be removed or added as parts of the manual are revised, etc.

## VI. END OF PROJECT STATUS #2:

OVER 2,000 MCHAs WILL HAVE BEEN TRAINED AND PLACED IN THE GOVERNMENT OF TANZANIA RURAL HEALTH DELIVERY PROGRAM.

### A. FINDINGS:

#### I. Number of Trained MCHAs:

As seen on Table 6, 2509 MCHAs have been trained to date. The pool of MCHAs, however, is only 2,437. This is because 72 MCHAs were enrolled in 1982 in two new training programs for upgrading MCHAs to Grade B nurses. Conversion of 3 MCHA schools to upgrading courses provides a career development ladder for MCHAs, which in the long run should help to make this an attractive career for many women. Nevertheless, this change will reduce by about 170 - 175 the net biannual increase in the cumulative number of graduates in the MCHA pool - (105 fewer MCHA training slots available for each 2 year period, plus 72 trained MCHAs removed from the pool by upgrading).

**Table 6: Trained MCHAs by Year of Graduation and Type of Training Program /Curriculum:**

<u>Type of Training</u> <u>Program/Curriculum</u>	<u>Year of Graduation</u>							<u>Total</u>	
	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>No.</u>	<u>%</u>
Village Midwife Upgrading Course (9 months)	163	--	110	160	141	96	107	777	31%
Preservice Course Old Curriculum (18 months)	--	439	388	447	--	--	--	1274	51%
Preservice Course New Curriculum (2 years)	--	--	--	--	--	444	14	458	18%
<u>Total Per Year</u>	<u>163</u>	<u>439</u>	<u>498</u>	<u>607</u>	<u>141</u>	<u>540</u>	<u>121</u>	<u>2509</u>	<u>100%</u>
<u>Cumulative Total:</u> <u>Maximum possible no.</u> <u>of MCHAs in the field</u>	<u>163</u>	<u>602</u>	<u>1100</u>	<u>1707</u>	<u>1848</u>	<u>2388</u>	<u>2437*</u>	<u>2437*</u>	

\* Beginning in 1982, the maximum possible number of trained MCHAs is less than the total number ever trained. This is because in 1982, 72 MCHAs were enrolled in 2 new training programs by which they will be upgraded to Grade B nurses, and 36 Grade B nurses were enrolled in one new training program to upgrade to Grade A.

In Table 6 it is important to note that more than half of the MCHAs ever trained at the time of this evaluation were trained by the old preservice curriculum which since has been significantly revised and improved. Thus, the evaluation team's findings regarding MCHA performance in the field are heavily weighted by the performance of MCHAs trained in a less adequate program than the one currently provided. Overall,

MCHA performance can be expected to improve as the number of MCHAs trained under the new curriculum increases, thereby reducing the proportion who are less well trained.

Upgraded village midwives now account for 31 percent of MCHA graduates. Although this group appears to perform well in the field, from now on they will account for an ever decreasing proportion of trained MCHAs. Only about 500 village midwives remain to be upgraded. This aspect of the training program should be concluded by 1987.

## **2. Deployment of MCHAs in the Rural Health Delivery Program:**

The evaluation focused first on emerging patterns of recruitment and assignment at the national levels and, secondly, on intra-region and intra-district patterns of deployment. These are analyzed separately.

### **a. National Staffing Patterns:**

The official position of the MOH is that MCHAs are recruited more-or-less equally for Tanzania's 20 regions and posted back on the same basis. For the most part, this is what in fact happens: Table 7 below (see columns A and B) shows that each region contributed and receives about 4-6% of recruits and postings, respectively. Kilimanjaro contributes a rather large proportion of all recruits (nearly 11%), probably because complete basic education among young women is more prevalent in that region than elsewhere in the country.

**Table 7: Patterns of Recruitment and Postings<sup>a/</sup> Compared to Population and Infant Mortality:**

Region	A		B		C	D
	Recruitment	%	Postings	%	MCHA/Population <sup>b/</sup>	Infant Mortality <sup>c/</sup>
Arusha	87	4.7	82	4.4	0.09	130
Coast	75	4.1	100	5.4	0.19	196
DSM	98	5.3	86	4.7	0.10	88
Dodoma	87	4.7	87	4.7	.09	145
Iringa	99	5.4	86	4.7	.09	178
Kagera	77	4.2	93	5.0	.09	145
Mt. Meru	70	3.8	93	5.0	1.43	215
Mt. Kilimanjaro	200	10.8	72	3.9	0.08	130
Moshi	82	4.4	87	4.7	0.16	145
Mt. Morogoro	59	3.2	66	3.6	.09	130
Mt. Mwanza	100	5.4	88	4.8	.08	162
Mt. Morogoro	66	3.6	91	4.9	0.10	178
Mt. Morogoro	73	4.0	87	4.7	.11	145
Mt. Morogoro	83	5.0	94	5.1	.07	145
Mt. Morogoro	71	3.8	87	4.7	1.93	N/A
Mt. Morogoro	84	4.6	91	4.9	0.15	145
Mt. Morogoro	66	3.6	80	4.3	0.06	145
Mt. Morogoro	67	3.6	88	4.8	1.43	196
Mt. Morogoro	94	5.1	98	5.3	0.12	145
Mt. Morogoro	102	5.5	84	4.6	0.08	145
Mt. Morogoro	105	5.7	105	5.7	N/A	N/A
<b>TOTAL</b>	<b>1845</b>		<b>1845</b>			

<sup>a/</sup> Excluding 1982/83 Preservice Class, which has yet to be posted.  
<sup>b/</sup> Based on 1978 Population Census  
<sup>c/</sup> USAID 1979: Annex 6.

The question must be raised whether equal allocations among regions is the most suitable criterion for postings. At least two other criteria suggest themselves: postings to equalize per-capita distribution of MCHAs, or postings to send more MCHAs to regions with especially high rates of infant mortality. Table 7 (column C) shows that there are a few significant disparities in the per-capita distribution of MCHAs across regions. The average national distribution of MCHAs is 0.10:10,000 population, but Kigoma and Singida have 14 times this many, while Rukwa has 19 times the national average, while Mwanza and Shinyanga appear to be somewhat underserved. However, we must also consider variations in infant mortality rates, since reductions in infant mortality constitute a prime goal of the MCHA program. The national average infant mortality rate in 1973 was 152/1000 live births. Both of the regions underserved by MCHAs (Mwanza and Shinyanga) have infant mortality rates below the national average (145/1000), so the fact that they receive fewer MCHAs may be justified on the grounds of lesser need. Of the three regions receiving considerably more than their share of MCHAs, Kigoma has the highest regional rate of infant mortality in the nation (215/1000), while Singida ties with Coast for the second highest rate (196/1000). Comparable infant mortality data are not available for Rukwa region.

In sum, the distribution of MCHAs to regions around the nation appears to have responded both to variations in regional population and to variations in regional need, despite the somewhat inappropriate official position that equal numbers of MCHAs should be recruited from and posted to the 20 regions.

## **b. Regional and District Staffing Patterns:**

### **(1) Introduction:**

Most districts provide three levels of health services: at rural dispensaries (RDs), rural health centers (RHCs), and district hospitals (DHs). RDs ordinarily have three para-professional staff (including one MCHA) and serve a population of 7,000-10,000 people; RHCs should have about 8 para-professional staff (including two MCHAs) and serve a population of 60,000 - 100,000. Each district should have a hospital at district headquarters, while a number of districts have more than one such facility. MCHAs are not supposed to be employed as hospital staff, but in practice many are (see below). The rationale for posting MCHAs at the two most peripheral levels of the public health system stems from the duties and responsibilities they are given, which require intimate and continuing contact with the majority of rural mothers and children. To the extent that MCHAs are posted at other levels in the system, their usefulness will be reduced.

### **(2) Findings:**

Data on the distribution of MCHAs were obtained for the following districts:

#### **In Dodoma Region:**

Dodoma Urban  
Dodoma Municipality  
Dodoma Rural  
Kondo

#### **In Arusha Region:**

Arusha Municipal

Arumeru  
Hanang  
Monduli  
Mublu  
Kiteto  
Ngorongoro

In Kilimanjaro Region:

Same

Table 8 presents the numerical and percentage distribution of MCHAs observed among hospitals, rural health centers, and dispensaries.

**Table 8: Distribution of MCHAs in Sample Districts, 1983.**

<u>Districts</u>	<u>Institutions</u>				<u>Total</u>
	<u>Hospitals</u>	<u>RHC</u>	<u>RD</u>	<u>Other</u>	
	<u># (%)</u>	<u># (%)</u>	<u># (%)</u>	<u># (%)</u>	
Domoma Municipal	0 ( 0)	5 (45)	4 (36)	2 (18)	11
Dodoma Urban	6 (27)	1 ( 5)	15 (68)	0 (0)	22
Dodoma Rural	0 (0)	6 (14)	37 (86)	0 (0)	43
Kondoa	7 (41)	4 (24)	6 (35)	0 (0)	17
Arusha Municipal	16 (67)	2 ( 8)	6 (25)	0 (0)	24
Arumeru	1 ( 4)	6 (25)	17 (71)	0 (0)	24
Hanang	1 ( 4)	6 (25)	17 (71)	0 (0)	16
Monduli	3 (23)	4 (31)	6 (46)	0 (0)	13
Mbulu	2 (12)	2 (12)	13 (76)	0 (0)	17
Kiteto	0 (8)	4 (33)	8 (67)	0 (0)	12
Ngorongoro	0 (0)	0 (0)	2 (100)	0 (0)	2
Same	3 (11)	4 (15)	20 (74)	0 (0)	27
<b>Total</b>	<b>40 (18)</b>	<b>44 (19)</b>	<b>142 (62)</b>	<b>2 (1)</b>	<b>228</b>

**Average Number of MCHA/Institution**

	<u># of Institutions</u>	<u># of MCHAs</u>	<u>Average</u>
Hospital	9	40	4.4
RHC	24	44	1.8
RD	195	142	0.7
Other	4	2	0.5

These figures, although necessarily incomplete, show plainly that there is an overall urban, hospital-oriented bias to the postings of MCHAs, although there is also great variation in this regard across districts. A number of factors work together to introduce this bias, which, incidentally, is well-recognized by MOH Staff and which was identified as a significant problem in the 1981 MOH internal evaluation of the MCHA program. These factors include:

- Each of the 18 MCHA Training Schools constructed was equipped with a separate MCH Demonstration Clinic, in which MCHA students were to receive "hands-on" training. By 1976, when construction was almost complete and training was beginning, the MOH, along with local district authorities was pressing to use the demonstration facilities for actual service, a change to which AID agreed with some reluctance. Although this change is justifiable because of the overall shortage of health delivery facilities, and because of the needs of MCHA students to have both an adequate amount of clinical experience and graduate MCHAs to serve as role models in their learning environment, one cost of this change has probably been some increase in the posting of trained MCHAs at district headquarters/hospital level, which is where the MCHA training schools are located. Nevertheless, only 18 of 104 district hospitals have such facilities, so the negative effect may not be great.
- Hospitals at regional and district headquarters suffer from a general shortage of staff of all kinds. Since Regional Medical Officers are responsible for postings to the districts, and District Medical Officers are responsible for intradistrict postings, there is pressure at each level for newly-posted MCHAs to be retained to fill in for nurses and nursing assistants. In most cases, it seems MCHAs are employed on maternity or pediatric wards, in which their training can be put to some use.
- Unmarried MCHAs are generally willing and able to be posted to the rural areas in which RHCs and RDs are located, but the same cannot be said for married MCHAs. These women, who are comparatively well-educated and upwardly mobile in a socio-economic sense, tend to marry professional men with equal or greater education. In most cases these men (civil servants, teachers, CCM administrators) find their places of employment in urban areas, and their wives must follow. These circumstances have generated an informal MCH policy requiring single MCHAs to be posted in RDs if at all possible, while married MCHAs are sent where their husbands are, usually being posted to RHCs (which tend to be located in sizable settlements) or to hospitals in regional and district headquarters.
- Three other less important factors also generate urban locations of MCHAs. MCHAs who are performing poorly in RDs or RHCs may be pulled back to hospitals for closer supervision, but only two instances of this were observed in the site visits. Also, MCHAs with "friends in high places", either in CCM or the MOH, can ensure themselves an urban posting; district and regional medical officers find it difficult to resist political pressures from above. Finally, shortage of housing in rural areas, and/or unwillingness of local political leaders and communities to make existing space available to MCHAs has in some cases prevented available MCHAs from being posted to needy dispensaries. Lack of MCH equipment does not, however, appear to be a problem.

### **3. Conclusions and Recommendations:**

MCHAs are not unique in being attracted to work in urban places; the same may be said for all MOH Staff and, indeed, all civil servants. The general shortage of material comforts and basic commodities such as soap, clothes, and kerosene, which is much worse in rural places than in urban places, makes life there an unattractive proposition. However, several possible mitigating steps might be taken, which are presented as recommendations for consideration by the MCH and the government of Tanzania.

**Recommendation:** The MOH should give official recognition to the necessity for MCHA postings to respond to variations in regional population size and in regional infant mortality rates. This would simply endorse the informal, but highly commendable, posting pattern which has evolved during the history of the MCHA training program.

Some local officials believe that a monthly boost of 30 - 50 shillings for MCHAs posted to RDs would help stem the urban flow. Currently there are about 2,300 MCHAs; if 75% of them were to be posted to RDs and provided a 50 shillings supplement, the total additional annual cost would be about 860,000 shillings, a relatively small sum in comparison to (for example) either the MCHA annual program budget or amount being spent on hospital development.

**Recommendation:** The MOH should consider revision of MCHA salary schedules to provide modest differentials for services in rural areas.

MCHA promotion schedules might be revised to provide for delayed promotions for those not working in RDs. A year of service in a RD might be counted as a full year of service, while a year of service in a RHC might be counted as 0.75 years of service for promotion purposes, while a year of service in a hospital might be counted as 0.50 years of service for purposes of promotion. This would increase the attractiveness of rural postings and, at the same time, help ensure that professionally mobile, committed MCHAs spend time in the rural areas where the quality as well as the quantity of health services is generally lower. In addition, overall salary expenses for MCHA's would remain at somewhat lower levels since promotion of about 20% of the cadre would be delayed.

**Recommendation:** The MOH should consider revising MCHA promotion schedules to provide for delayed promotion for those not working in RDs.

Since some proportion of postings to hospital is probably inevitable, it might be possible to make the best of an unsatisfactory situation by rotating hospital-based MCHAs out to rural locations for perhaps one month each year. This scheme would capitalize upon the fact that some MCHAs are able to acquire general nursing skills and better knowledge of medical administration in district hospitals, and perhaps would result over time in an upgrading of service delivery in the rural facilities.

**Recommendation:** The MOH should consider periodic rotation of hospital-based MCHAs for temporary service in rural locations.

Tanzania has embarked upon a program to train Village Health Workers (VHWs), which will eventually place a locally-recruited, locally-posted, and locally-paid para-medical aide in each registered village. The current 6-month curriculum might be either expanded or revised to provide greater emphasis on MCH matters, so that the

VHW could provide some of the services which MCHAs now provide. Appropriate services for consideration might be: nutrition education; health and child spacing education; malaria chemosuppression; identification of potential problem deliveries for referral to RDs, RHCs, or hospitals, as appropriate or possible; and establishing of working relationships with TBAs. Except for malaria chemosuppression, these are all areas where current MCHA performance tends to be weak because of a frequent inability to establish close and continuing contact with mothers living further than 2 or 3 kilometers from the facility. Thus, strengthening VHW training on these topics might compensate for the tendency to locate MCHAs in more central locations and for some current performance problems as well.

**Recommendation:** In the development of the Village Health Worker Programme, every effort should be made to incorporate MCH content in VHW training courses and the establishment of complementary working relationships between MCHAs and VHWs.

## **VI. END OF PROJECT STATUS #3:**

**COMPREHENSIVE MCH AND CHILD SPACING SERVICES WILL BE AVAILABLE TO 90% OF THE COUNTRY'S RURAL POPULATION:**

### **A. FINDINGS:**

#### **1. Accessibility of MCH Services:**

According to the 1978 Survey of the Health Sector, 92% of the population were within 10 km. of a health facility, while 70% were within 5km. The same survey reported that 95% of patients who came to dispensaries came from within a 5 km. distance.

While the 1981 MCH Program Evaluation reported a slightly lower percentage (88% of villages within 10 km. of a health facility), it was noted that the selection of districts for that evaluation was aimed especially at "rural" locations.

Not all health facilities, however, provide MCH service. The 1978 MOH Health Inventory reported that 49% of the health facilities in the 10 districts evaluated provided MCH service at least weekly. Those with daily MCH clinics, according to a USAID review (Health in Tanzania, 1979, USAID Dar es Salaam) varied widely among the regions, with Coast, Mtwara, and Iringa showing 50% or more, while Rukwa and Kigoma had less than 20%.

Precise figures are not available to quantify the increase in MCH services since the 1978 inventory. The MOH reports for 1981 describe a total of 1943 MCH clinics in the country. The DMOs interviewed in the 1981 evaluation reported that 58% of the clinics in their districts had MCH services, and the MCH unit at the MOH informed the evaluation team that MCH clinics are being added at the rate of about 3 dispensaries and 1 health center per region per year.

### **Conclusions:**

While approximately 90% of the rural population has reasonable access to a health facility, many of these do not yet provide comprehensive MCH and child spacing services. The increase in the number of clinics providing MCH services during the span of the MCHA training project has been impressive, and sufficient to absorb all of the MCHA's trained. While this increase has been understandably slowed by the serious budget constraints of recent years, it nevertheless, continues. The potential for adding MCH/child spacing services to clinics which do not yet provide this component of preventive MCH care is addressed in the section of the report dealing with deployment of MCHAs trained in the project. (See section 2.b. unders EOPS #2).

#### **2. Utilization of MCH Services:**

For purposes of this evaluation, the following services have been selected as representative of the cluster of 10 items which comprise "Comprehensive MCH care": Antenatal/midwifery/postnatal care; immunization; and child spacing.

##### **a. Antenatal/Midwifery/Postnatal Care:**

In the sample surveyed by the MOH in 1981, 2166 (or 85%) of the 2543 mothers with young children had "any prenatal care" at an MCH clinic during their last pregnancy.

These figures are roughly consistent with the evaluation team's field observations which showed generally a high degree of antenatal coverage in relation to the population of the sites visited.

The Regional Medical Officer in Dodoma region, the first visited by the evaluation team, conducted a study of MCH facilities (both urban and rural) in his region in 1981, indicating that more than 90% of pregnant women attended antenatal clinic at least once. This was confirmed in our field observations elsewhere, with a few rural clinics indicating close to 100% coverage of eligible pregnant women with at least an initial antenatal visit.

Many women do not return for continuing antenatal care, however, and whereas institutional deliveries are increasing, they continue to be low in the rural areas. The Dodoma study showed 51% of deliveries in institutions in the urban areas, with only 18% in the rural clinics. This is fairly typical of the field observations made by the evaluation team, with MCHAs reporting relatively few deliveries in the rural dispensaries in relation to the number of clinic attendances. The reasons for a persistent high prevalence of home deliveries were investigated in the 1981 MOH evaluation. While various reasons were expressed, the predominant explanation seemed to be distance from the health facility and abrupt onset of labor.

It must be noted that in some instances home deliveries are nevertheless attended by a MCHA or trained midwife, although most report that time and distance constraints as well as their clinic responsibilities tend to preclude their attendance at home deliveries. Thus, most home deliveries in the rural areas continue to be attended by untrained persons (TBAs or family members). This does not, however, negate the value of antenatal care in the clinics, to the extent that risk assessment, referral of high risk mothers, nutritional advice, health education and, where possible, tetanus immunization is available to mothers who eventually deliver at home.

The importance of liaison between clinic staff and TBAs in the community, and the potential role of the newly established village health worker program in fostering this relationship is obvious. It is addressed in EOPS #2, Section 3 (recommendations), of this report.

### Conclusions:

High levels of antenatal attendance (85% according to the 1981 MCH evaluation) reflect significant progress in perinatal coverage as rural services expand. While deliveries in health institutions remain significantly lower than antenatal registrations, they are, nevertheless, increasing (45% in the 1981 MCH survey vs. 34% reported in the 1976 MCHA project evaluation). The benefits of antenatal risk assessment and intervention or referral where necessary undoubtedly contribute to the safety of home as well as institutional deliveries. Although accurate mortality rates are unavailable, the institutional maternal mortality of 2.5/1000 live births reported by Hart in 1976 has been reduced to a currently estimated (by MOH) rate of 1.6/1000.

Recommendation: Insofar as many women who receive antenatal care in MCH clinics ultimately deliver at home, special attention should be given to the content of antenatal care, in general, and risk assessment, in particular. Operations research should be conducted, and the results disseminated in seminars and continuing education exercises to assure that the potential for appropriate health interventions in antenatal visits is fully realized.

**b. Immunization:**

The fact the vaccination program has fallen considerably short of its goal illustrates dramatically its dependence on appropriate technology. Our observation on both the training and performance of MCHAs indicate that adequate attention is paid, and priority given, to the importance of immunization of children and pregnant women. The shortfall in performance, accordingly, rests to a large extent on the vulnerability of the cold chain to shortages of transport and kerosene, and the managerial and administrative factors that affect critically the continuity of vaccine supplies at service delivery sites. To be sure, certain shortcomings in knowledge of immunization schedules and vaccination technology were disclosed in the course of our field visits, but the evaluation team feels that these are minor constraints in comparison to the overriding logistic obstacles, and that they would be easily remediable once a continued supply of viable vaccine is assured.

**c. Child Spacing:**

**Findings:**

The impact of MCHA training on acceptance of child spacing is impossible to quantify at this time. The evaluation team was not able to obtain accurate records which would reflect trends in acceptance over the several years during which MCHA deployment would be expected to expand access to contraceptive information and commodities for the rural population. Neither the 1981 or 1982 Annual Reports of the MCH Unit of the MOH were available, nor was the 1982 Annual Report of UMATI ready during the team's visit.

A copy of the UMATI report was mailed to one team member (D.M.) following the team's return to the U.S.A., but this report also does not yield information that allows for year to year comparisons. The report lists 95,140 "actual" acceptors in 1982 (including 36,796 "new" and 58,344 "continuing") against a target of 360,000 total. It qualifies these figures, however, with the comment that these numbers represent most likely "about 50% of the true situation", noting that only 30% of the regions reported for the entire 12 month period and 45% reported for six months or less. The general breakdown in monitoring and reporting of MCH Programme statistics is addressed elsewhere in the evaluation report. In the case of child spacing, it is compounded by the inability to derive contraceptive continuation rates from available clinic records.

According to prior year UMATI reports, there were a total of 179,000 family planning "acceptors" in MCH clinics in 1981 compared to a total 223,201 "acceptors" in 1980. The report also qualifies these totals, however, because of known under-reporting in 1981, with a "majority of the regions reporting for nine months only".

In view of the qualifying statements which seek to explain the apparent decline in acceptors from 1980 through 1982 and the magnitude of the stated sources of error, it is impossible to assess from the available records the true state of trends in family planning in the country in recent years. Still further evidence of confusion surrounding family planning statistics stems from the ILO report, "Basic Needs in Danger", published in 1982, which reported that new acceptors increased from about 19,000 in 1976 to 45,000 in 1980, but did not reveal the source of these figures. Clearly, the unsatisfactory state of family planning data collection is symptomatic of the deterioration of information management throughout the MCH Programme which was encountered at every step in this evaluation. The importance of prompt action to rectify this aspect of the

project cannot be over emphasized, and is addressed in our recommendations elsewhere in the report.

Paradoxically, while the (admittedly badly flawed) statistics fail to document the expected progressive increase in family planning acceptance, UMATI and MOH personnel are of the unanimous opinion that acceptance is increasing. The field observations of the evaluation team would seem to corroborate this conclusion. Child spacing was at least offered (albeit often not prominently) in all of the clinics visited. According to UMATI, about 800 of the 1,943 government MCH clinics are now providing child spacing services. (The UMATI report excludes Mwanza Zone, which has not yet reported, but is known as an "active area", adding an estimated additional 100 clinics at which child spacing is now provided.)

The evaluation team concludes that a true estimate of current levels or recent trends in family planning acceptance and continuing contraceptive practice cannot be made at this time from the available data. Whatever the true figures, however, it is clear that child spacing is being practiced by only a small proportion of the eligible population.

Access to child spacing information and services has clearly been improved through the expansion of the MCH clinic program, the integration of family planning into the package of comprehensive MCH services, and the training and deployment of MCH aides. In all of these categories, however, much more needs to be done to extend access and promote wider acceptance among the large rural population that remains unserved. In this regard, certain qualitative aspects of the child spacing component deserve comment, based upon our field observations. These are addressed in the following paragraphs.

In our assessment of MCHAs performance, it was observed that they are generally conscientious in providing family planning education, although it does not enjoy a uniformly high priority among the MCH services provided. Several of them observed that they try to promote child spacing, but are discouraged by the generally poor response among eligible mothers. They also voiced a consensus that acceptance would be much greater if it were not for the resistance to child spacing among husbands, many of whom exercise a strong veto over their wives' wish to increase the interval between pregnancies. Mention was made by several MOH and UMATI officials of growing concern over out-of-wedlock adolescent pregnancies in Tanzania, but there is no hard evidence to document this problem.

Although a "cafeteria" approach is taught in the MCH curriculum, and indeed some clinics showed us supplies of condoms and foam and spoke of occasional referrals for IUD insertion or sterilization, in actuality child spacing remains virtually a "one-method" program. The oral contraceptive pill, in terms of practicality and acceptability, is the only method which realistically meets the requirements of most rural acceptors. Moreover, most service delivery sites cannot offer alternatives among the various pill formulations despite strong preferences for one brand of pills over another expressed by providers and acceptors alike.

In regard to the preparation of MCHAs in the training course, several observations are relevant. In the first place, only eight of the total MCHA faculty have been themselves trained in the UMATI Family Planning course. Secondly, the introduction of the family planning module in the curriculum follows, rather than precedes the trainees field experience. Finally, certain factual errors in the training curriculum and the need to include family planning questions in the MCHAs' final examination were

noted and are addressed in recommendations in the section on training in this report. In this context, the role of MCHAs utilizing appropriate entry points in the MCH cycle is of great importance as the knowledge of contribution of child spacing to family health slowly grows. In the meantime, the dearth of information and apparent deterioration of reporting of important data from the MCH clinics is deplorable. Without such feedback from the field, the MOH is powerless to make needed programmatic adjustments in maintaining adequate supplies, training and supervision of personnel, and quality of service. The absence of hard data on acceptance or prevalence notwithstanding, the continuing in-service training efforts by UMATI (which now exceeds 6,000 persons trained), the educational and motivational efforts of the Regional Councils and 625 village level branches of UMATI, and the child spacing capability provided by the MCHAs trained and deployed to date all point toward further diffusion of child spacing acceptance in the rural population as modernization progresses.

In the realm of public policy, President Nyerere has continued his periodic expression of support for child spacing. On several occasions he has spoken publicly on the need for concern over the country's rapid population growth as well as for equity for women. In a widely quoted 1982 speech, he called for help by the parent's association (Wazazi) to educate parents and community leaders about family life and family planning. In response, a workshop was held in Dar es Salaam in October, 1982 to stimulate action to carry out this charge.

Certain tax policies have been promulgated which tend to discourage having families with more than four children, and paid government maternity leave (of 84 days) is given only if three years have elapsed between births, but these measures only affect the small urban proportion of the population. For the predominantly rural population, deeply rooted cultural values which favor large families, the social and economic utility of children, and persistent high rates of infant and early childhood mortality all mitigate against any rapid change toward a smaller family norm.

### **Conclusion:**

Despite these evidences of official support and the educational efforts UMATI, as well as concerned individuals in the MOH, child spacing continues to be a low priority item among most MCH service providers as well as political leaders. The evaluation team sees no evidence of an aggressive change in population policy on the horizon, and for the foreseeable future, the quiet diffusion of the concept of child spacing as a health measure will continue to be the dominant visible expression of public policy.

**Recommendation 1:** The lack of reliable service statistics and reports of clinic activity requires prompt attention. The record keeping system originally set up by the MCH programme provides adequate information for measurement of acceptor rates, but is not being implemented at present. Modification of child spacing records to provide for calculation of continuation rates as well as acceptor rates is recommended. Technical assistance may be required to implement this recommendation; and assistance from appropriate donors should be enlisted.

**Recommendation 2:** A contraceptive prevalence survey is strongly recommended, as a means to guide policy development, educational and motivational efforts and service program planning.

**Recommendation 3:** The importance of child spacing as a health measure should receive greater emphasis, both in the training of MCHA faculty as well as the MCHAs themselves, and in the seminars provided for DMOs and MCH coordinators.

d. The Importance of Breastfeeding to Child Spacing in Tanzania:

Findings:

Currently, prolonged lactational amenorrhea associated with breastfeeding is the only child spacing method used by large numbers of Tanzanian women. Interviews with physicians, nurses and MCHAs in the various areas visited during this evaluation indicate that most women in rural areas breastfeed each child for one to two years and that 20-25% remain amenorrheic until the child is weaned. Most other mothers resume menstruation sometime during the first year of breastfeeding, but almost always remain amenorrheic for at least 4 months. Few women have problems breastfeeding, and there is little evidence of the use of bottled breast milk substitutes in the rural areas. Supplementary foods are introduced at 3-4 months of age, using cups and spoons but no bottles.

Some mothers experience an earlier than usual return to fertility because they stop breastfeeding when their children get diarrhea (believing "bad milk" to be the cause) - a practice which varies from region to region.

Most MCHA coordinators and tutors say that they teach students to initiate postpartum contraception at six weeks postpartum, a practice which, in fully breastfeeding women with lactational amenorrhea, contributes little to increasing birth intervals. However, the DMO at Mbulu advises MCHAs to interview mothers to detect those who have a history of remaining amenorrheic throughout lactation and not to start these mothers on contraception for two years or until they plan to stop breastfeeding, and to start contraception for other mothers when their last borns are four months old.

Conclusion:

Lack of confidence about when to introduce contraception in order to delay pregnancies among breastfeeding women may discourage MCHAs from acting in this area. The inconsistencies observed in MCHA instruction and practices regarding contraception in breastfeeding mothers suggests a need for attention to this subject in the training curriculum and in updating clinic procedures.

Recommendation: A group of Tanzanian physicians and others with special knowledge and interest in the question of the timing of postpartum contraception in lactating women should be convened, perhaps with consultation from WHO, IPPF and/or USAID's Office of Nutrition to describe more clearly the patterns of lactational amenorrhea among Tanzanian women and to make recommendations regarding the most appropriate timing and manner of initiating contraception for breastfeeding women. Such recommendations should then be incorporated into the MCHA curriculum, and, through continuing education mechanisms, should be communicated to the existing MCHA cadre.

## VI. FIND OF PROJECT STATUS #4:

### AN MCH AND CHILD SPACING SUPPLY DISTRIBUTION NETWORK WILL BE OPERATIONAL THROUGHOUT THE COUNTRY:

The MCH program cannot function effectively without dependable and wide distribution of essential commodities such as medicines, equipment, stationary, vehicles, petrol, and kerosene. Tanzania's ongoing financial difficulties have undermined the ability of the MOH, Regional, and District authorities to provide these commodities. Some particularly outstanding issues are discussed below.

#### A. LOGISTICS AND SUPPLY:

##### I. Transport:

The MCHA program requires transport for supervision, for distribution of supplies, and for referral of complicated cases from RDs or RHCs to district hospitals. Each of the 18 regional MCHA training schools is provided with a landrover and funds for petrol and maintenance, but district MCHA coordinators (DMCHCs), who have direct supervisory responsibilities, have no vehicle of their own. Theoretically, there should be one or more vehicles attached to the district hospital and/or the office of the District Medical Officer, which could be used by MCHA coordinators in their duties, but problems of breakdowns, lack of spare parts, and lack of operating funds mean that even DMOs are often without transport. Thus, the MCHA training school vehicle tends to be pressed into service by DMOs to fulfill many other health-related functions, with the result that the specific needs of the MCHA program might be neglected. At times there is even pressure from DDDs to use the MCHA vehicle for tasks entirely unrelated to health activities. Thus, competition for roadworthy vehicles at the district level results in the MCHA program benefiting less than it could from the already meager transport with which it is supplied. Moreover, continuing disagreements over transport among MCHA training school principals, MCHA district coordinators, DMOs, and DDDs are not conducive to good working relationships. Finally, lack of funds for petrol and new tires prevents some otherwise roadworthy vehicles from being fully utilized, while the Ministry of Works has almost no capacity to maintain the vehicles or repair them.

The lack of transport seems most keenly felt in the area of supervision. Many MCHAs in RDs do not receive supervisory visits for months at a time, which is demoralizing in itself, leads to a loss of professional skills, and encourages slack work performance. RHCs and RDs near well-travelled roads, along which the DMO or DMCHC might pass enroute to other places, receive more frequent visits than isolated posts at the end of long, difficult roads. In such places, MCHAs may not even learn the names of new DMOs or RMOs until long after the transfer has taken place. Lack of supervision will, over time, result in an erosion of professional performance that can have a very negative effect on the health impact of MCHA activities.

Another aspect of the transport problem stems from the general lack of public transport and private commercial vehicles. MCHAs in the hilly parts of Same District, for instance, when desiring to obtain a re-supply of kerosene, must rise at 2:00am to walk out to the main road where a morning bus to Same may be boarded. Another bus in the late afternoon returns the MCHA to the roadside stop. The MCHA must then carry the 20-liter tin of kerosene back up into the hills, often arriving after nightfall. In general, re-supply is very difficult anywhere off the main roads, while more favored locations may experience relatively little difficulty and few shortages.

Lack of transport also affects the MCHA program by inhibiting the ability of mothers located more than 4 - 5 km. from a facility to attend on a regular basis. Such mothers may make special efforts to attend when a child is seriously ill, but are extremely unlikely to walk or arrange for motor transport in order to receive routine antenatal or postnatal check-ups. Finally, the referral process, by which problem obstetrical cases or very ill children are sent to higher-order facilities for specialized treatment, functions very poorly. Obviously the RD or RHC has no transport to offer. Locally-owned private vehicles are few and also very expensive to hire, and public transport is simply not found off of main roads. Thus, an important linkage between primary health care facilities and secondary or tertiary facilities is not currently found. All in all, the lack of transport is seriously endangering the viability of the MCH program.

## 2. Kerosene:

Kerosene is required to fuel the refrigerators at RHCs and RDs in which vaccines and other medicines must be stored to maintain their viability. These are the last and also the weakest links in the cold chain, since distribution of all commodities, including kerosene, is most difficult at the periphery of the system. Kerosene is also used to fuel the small stoves with which needles and other medical tools are sterilized. In general, it is expected that about 10 liters per month will be required for sterilization, and about 20 liters per month to run a refrigerator. When supplies are short, priority is given to sterilization.

Virtually all of the RHCs and RDs visited experienced shortages of kerosene, although at least one facility had never run short due to an energetic RMA, few facilities seemed to be able to run their refrigerators more than one-half the time, and in one place, Mbulu District, there had been no kerosene available for refrigerators for the previous nine months. Circumstances like these have several negative impacts on the MCH program. First, immunization in outlying areas comes effectively to a halt, because the medicine cannot be stored without refrigeration. Even sporadic, short-term shortages can be detrimental, because mothers who once bring their children in from some distance to be immunized, only to find that no medicines are available, are unlikely to return soon. Secondly, the medicines in the refrigerator at the time the kerosene runs out will ordinarily be spoiled. MCHAs are instructed to keep a tray of ice in the refrigerator, and use it to keep the medicines cold while transporting them back to a place where refrigeration is available (usually the district hospital). But transport delays and other duties mean that this stratagem usually fails. Thirdly, the general lack of kerosene in the countryside has resulted in delayed consumption of existing medicinal stocks which cannot be distributed to RDs, with the result that many medicines reach expiration dates before they leave district headquarters or indeed even before they reach it. The difficulty Tanzania has experienced in controlling measles and polio may be directly related to the kerosene issue, insofar as a proportion of vaccines are nonviable when used and completion rates tend to be depressed. That increased risk to children ensues was vividly demonstrated by frequent reference during our visits to children who contracted measles despite a completed vaccination schedule. The resultant risk is compounded by the loss of faith in vaccination in general which follows such an event. A good deal of time is also spent trying to obtain the fuel; one district hospital secretary suggested that about 15% of his time was spent on kerosene issues.

The centrality of the kerosene issue requires a closer examination of the distribution process. In former times, up until the period of 1978/79, kerosene was in plentiful supply through the Regional Trading Corporations (RTCs), which are the regional affiliates of the State Trading Corporation. District Medical Officers would purchase

their supplies at a local RTC outlet and distribute the kerosene to District MCH Coordinators, as well as other users. MCH Coordinators in turn were responsible for distribution to the final points of use, RHCs and RDs. After 1979, the RTC supplies seem to have diminished greatly, with the result that DMOs must purchase from private distribution agents or the oil companies themselves. Many such private outlets have been closed by government action or because of lack of supply, while those with current supplies often prefer to sell to private individuals at black market prices (12-15 shillings per liter) rather than to government officers who can only offer the official controlled price (about 6 shillings per liter). As a result, the little kerosene available in the country is not easily accessible to the health system. When a DMO succeeds in acquiring kerosene through purchase from private agents, the needs of his district hospital for sterilization, refrigeration, and illumination tend to be met first, followed by the RHCs, followed by the RDs. Thus, the dispensaries and MCHAs working there are at the very end of a long and difficult chain of distribution.

When the DMO has access to a local private agent (e.g., in Same, where petrol stations on the main road from Tanga to Moshi provide kerosene), his task is easier and the likelihood that RDs will be supplied is greater. Where there is no local source of supply (e.g., in Mbulu, where the DMO must travel to Moshi to seek kerosene), the problem is very much greater.

A complicating factor stems from the policy of decentralization. Regions and Districts have substantial autonomy on many aspects of staffing and supply. Thus, MOH officials believe the kerosene supply issue should be resolved by regional authorities, and regional authorities can shift the responsibility to district level. District level officials, of course, have the least power, the fewer resources, and are most unlikely to reach a satisfactory resolution of the problem.

In a few wealthy areas, where the utility of immunization is well recognized, villages and wards have used their own funds to purchase kerosene to fuel refrigerators in local public health facilities. The question of local community financing of some portions of the health service is one to which we return later, since this option may, in fact, constitute a more viable supply method than the government purchase/distribution system, and because the re-emerging role of District local authorities in revenue generation and service provision may eventually result in full local financing of dispensary-level health services.

### **3. Printed Health Records:**

MCH services rely upon a number of record-keeping activities to monitor maternal health and child growth, to assess immunization rates, to keep track of attendance rates, and to generate other data useful in appraising the performance of the system and in planning the course of future activities. All these records depend on forms being available to MCHAs in RHCs and RDs, but the high cost and short supply of paper in the country has made for sporadic shortages everywhere and complete absence of supplies elsewhere.

The "Road to Health" charts, for instance, which are used to monitor the growth of individual children and which should be retained by mothers to serve an educational function, are everywhere in short supply. When these cards are unavailable, MCHAs use plain paper from exercise books to record data on birthdate, residence, and growth over time, but the interpretive chart which allows mothers to understand the import of child weighing is absent. In one RD, the MCHA herself had no interpretive chart, so it is difficult to see what purpose was served by continued child weighing.

Absence of the proper forms and registration books also results in much confusion about where a child may be in the various series of immunizations he should undergo; it results in miscounting of first visits and re-attendance among both mothers and children; and it destroys the capacity of the MOH to effectively monitor the system. An AMREF Inspector of one RD in Hanang District, for instance, commented that:

There is no register since 6 months ago and no patients are being recorded. Strangely enough, a monthly disease return is sent to the DMO regularly. How the figures are computed is unknown.

The forms required for the "00000" reporting system are still found in a few RHCs and RDs, but many do not have them and some of those that do are utilizing the forms incorrectly. To some extent, the general lack of recording and reporting forms can be traced to the inability of the Government Printing Office to meet the demand, since private contracts to produce government forms are no longer, or not often, let. Also, the MOH formerly had two printing presses of its own, donated by UNICEF and utilized to produce specialized MCH and primary health care forms, but one of the presses has broken and spare parts cannot be purchased. Whatever the cause, the results are the same - an erosion of the capacity of trained MCHAs to perform their duties, and a weakening of the health impact of the MCH Program.

#### 4. Medicines and Equipment:

Like the areas of transport, kerosene, and printed health records, there seem to be major problems in the procurement and distribution of equipment and medicines, especially the former. Specific problems were noted with regard to the kerosene refrigerators, many of which are growing old and rusty, or have broken legs which makes them difficult to level properly. Many instances of expired or absent vaccines (especially BCG) have also been noted, but this seems to be related more to the lack of kerosene and transport than to inadequate medicinal supplies per se. Special immunization campaigns (e.g., against cholera or measles) can deplete the supply system quickly.

MCHA uniforms of the proper color are rarely found, but this is not a critical point apart from the contribution uniforms can make to staff morale. Another issue relates to the supply of scales, both for adults and children. Most of the adult scales provided were of the spring type ("bathroom scales"), which tend to be inaccurate when used on uneven surfaces; moreover, the particular brand provided seems to have been poorly constructed, since nearly all MCHAs complained that the scales were broken and could not be fixed. The Salter hanging scales for child-weighing have apparently been much more reliable, but not all facilities have been provided with them. In facilities with adult scales only, the mother must be weighed with and without the baby, which introduces multiple opportunities for error as multiple readings must be done and subtraction must be accurately performed. In one RD, where an MCHA was utilizing the procedure, it was observed that she (a) read the beam balance to the nearest kilo only; (b) wrote down the figure wrong; (c) made an arithmetical error in subtraction; and (d) did not remove the child's clothes before weighing.

In no place visited did district authorities suggest that lack of equipment or medicines prevented full utilization of available MCHAs; rather, other problems related to posting patterns and, possibly, community support have been more significant in this regard. Thus, medicines and equipment cannot now be considered a critical issue,

although as the first batch of refrigerators reaches the end of their useful lives, Tanzania might experience some difficulty replacing them.

## **B. CONCLUSIONS AND RECOMMENDATIONS:**

Most of the logistical and supply problems noted are far beyond the capacity of the MOH, Regions, or Districts to correct. They demand far-reaching changes in Tanzanian government policy and institutional structures, which may not be brought about easily or soon. However, because the Tanzanian government is currently considering a wide range of such policy and institutional changes in the areas of agriculture, cooperatives, and local government, we feel it is appropriate to point out how these contemplated shifts may be utilized to improve the functioning of the MOH program, and we also feel it appropriate to point to some further policy and institutional changes aimed more specifically at the health sector and the MOH Rural Health Program.

The Regional MCHA Coordinator must ensure direct supervision and supply of a wide network of RHCs and RDs, while the training school Principals rarely need to travel outside of district headquarters. Greater coordination between MCHA principals and MCHA coordinators would, therefore, work to improve the performance of the MCH Program in two areas (supervision and re-supply) when it is critically deficient. It is noteworthy that in the one district visited where the MCHA coordinator had a vehicle of her own the RHC and RD inspected had experienced no kerosene or other supply problems. To the extent that field supervision improves clinic performance, the field training experiences of MCHA trainers would also be enhanced by this policy.

**Recommendation:** In those districts in which MCHA training schools are located, the vehicles currently allocated to MCHA training schools should be fully shared with Regional MCHA Coordinators.

The work of the MCHAs and their supervisors is made immeasurably more difficult by the general lack of public transport and private vehicles on the road. Since transport is in such short supply, it is important to make the best use possible of that which is available.

**Recommendation:** RHC and RD staff requiring transport for specific purposes such as patient referral and re-supply of kerosene and medicines should be allowed to post a flag or suitable symbol at the facility or upon a nearby road that would indicate such assistance is required. Government vehicles, at least, and possibly private vehicles as well, should be required to stop at such easily recognized symbols and provide the assistance required if at all possible. It is noted that this measure was recommended in the previous USAID evaluation in 1976.

The general lack of transport is caused ultimately by the depressed condition of the Tanzanian economy. Improvement is dependent upon successful implementation of the government's Structural Adjustment Programme (SAP) (June, 1982). Hence, the evaluation team believes that the MCH should demonstrate its support for the planned set of national policy and institutional changes. This might take the form of preparing a separate, complementary analysis of policies and institutions in the health sector, together with recommended changes for greater efficiency. Another approach should be to analyze the impact the SAP may have on the health delivery system (both positive and negative impacts, if any). By preparing such analyses and bringing them forward for discussion in inter-ministerial meetings, the MOH can ensure that the health sector receives full benefit from the current willingness of the government to re-examine and improve the efficiency of national-level policies and institutions. In addition, we believe

that successful implementation of the SAP will result over time in a more effective health system as essential commodities become more freely available.

**Recommendation:** The MOH should familiarize itself with implications of the SAP for the health sector and lend its support to the programme whenever appropriate.

At least part of the kerosene supply problem stems from the fact that government has discouraged private distribution agents who might otherwise try to make supplies available at district level or below. Instead of having no licensed agents at district level, or perhaps just one, district authorities should consider whether several licenses might not be issued. This would encourage price competition among the agents and perhaps keep black market prices at a minimum. This would work to the advantage of those RHC and RD staff, as well as villages, who are now purchasing kerosene out of their own funds for use in sterilization, lighting, and refrigeration.

**Recommendation:** Consideration should be given to the possible advantages of issuing more licenses for distribution of kerosene within each district.

Another part of the kerosene supply problem results from the fact that DMOs can only pay the official controlled price, which is much lower than the market price. The MOH should therefore consider whether DMOs might not be given discretion to acquire kerosene locally. This might best be done by giving DMOs an imprest fund for kerosene purchases. Admittedly, this would generate additional recurrent expenses, but the evaluation team believes that the additional kerosene cost would be offset by the resultant saving of the wasted medicines, MCHAs workers' skills, and even children's lives, which now take place because supplies cannot easily be purchased at the controlled price. In addition to granting DMOs this fiscal authority, the MOH should also press for a more realistic controlled price for kerosene, one which more completely reflects its true value in Tanzania today.

**Recommendation:** Alternatives to the present system for procuring kerosene locally should be considered, in order to improve the assurance of kerosene supplies to service delivery sites.

Lack of stationery for recording and reporting of MCH data is weakening the system substantially.

**Recommendation:** The MOH should give greater priority to repairing and utilizing the printing presses at its disposal; specific requests should be made to donors to provide large stocks of paper and ink to produce the forms; and the MOH should re-examine its own recurrent expense priorities to see whether provision of essential record keeping and reporting forms is being given the high priority it requires.

A relatively small but, nevertheless, troublesome quantity of vaccines seems to be non-viable before being utilized. This results in a waste of costly vaccines and ineffective immunization. The loss of potency is related to inability to maintain the cold chain in those peripheral service delivery sites whose refrigerators depend on kerosene. In some instances failure to recognize the importance of maintaining the cold chain or to utilize alternative resources to maintain it were noted. The evaluation team was unable to investigate this issue to the degree required, but feels it is of great significance.

**Recommendation:** The MOH should plan and execute a study of the logistics of vaccine supply and consumption, with a view toward identifying bottlenecks and possibilities for low-cost improvement. (Note that the USAID Project was planning to fund such a study, but this apparently has not taken place. USAID should, therefore, explore the possibilities of providing the necessary support, so that this important end-of-project status indicator can be made available).

Lack of appropriate adult and child scales is forcing a substantial number of MCHAs to work with substandard equipment, thereby weakening their job performance.

**Recommendation:** The MOH should (a) inventory the number of adult scales needed; (b) inventory the number of child scales needed; and (c) seek donors to supply the additional scales required. This should be fairly easy for donors to respond to, since the need is obvious and the expenditure required is for equipment, not recurrent costs per se. The adult scales should be of the beam balance type, and the child scales should be of the salter hanging spring type.

Although rather few refrigerators seem to be currently in need of repair, they are beginning to reach the end of their useful life. Replacing them will be a major, but necessary, expense.

**Recommendation:** The MOH should begin now to explore ways in which new refrigerators may be acquired and to identify those which have been in service longest and which will, therefore, have to be replaced soonest.

## **B. COMMUNITY SUPPORT:**

As rural health workers on the periphery of the health delivery system, the MCHAs are in daily and intimate contact with the general population and with local leaders (e.g., ward secretaries and village chairmen). If the relationships between MCHAs and local people are characterized by mutual respect, trust, and support, the work of the MCHAs will be eased and the health impact of their activities can be expected to increase. To the extent that MCHAs find it difficult to work cooperatively within the community, the utility of their services will decline. Hence, we believe it is important to examine the question of community relations in some detail. Important topics treated here include sources of material support, experiences with traditional birth attendants (TBAs), relationships with local leaders, and home visiting.

### **I. Material Support:**

The Tanzanian Government is increasingly coming to believe that some proportion of the costs of health and other service delivery systems should be provided directly by local communities, as expressed, for instance, in the Local Government (District Authorities) Act of 1982, which provides for District Councils to take a role in development and maintenance of a wide range of educational and health facilities. With this trend in mind, we were especially interested to observe the scale of material support provided by local communities under current arrangements.

Local community material support is most common with respect to the labor needed to construct new health facilities, such as RHCs and RDs. The general practice seems to be that government provides a variable share of the capital costs (to acquire windows, doors, locks, iron sheets, etc.) and technical supervision, while the villages are expected to provide labor and some locally available materials, such as blocks for walls and lumber for roof framing. Staff housing seems usually not to be provided;

rather, staff attached to RHCs and RDs are expected to rent space on their own. Rural lodgings are often difficult to locate, expensive, and perhaps not very comfortable, and this is part of the reason why rural health staff (including MCHAs) are so attracted to duty postings in larger settlements.

Another area where community support is apparently not generally forthcoming relates to water supply. In the drier areas, of which there are many, obtaining an adequate supply of water for dispensary use in washing, sterilizing, cleaning, providing drinking water for in-patients, and so forth, can be burdensome. The staff must somehow provide water not only for their own personal use, but also for the facility. In only one place visited was there a suggestion that the local community assisted on this score. Even here, local people brought water to be used only by their own sick relative. Although this service was not performed on behalf of the dispensary, it, nevertheless, eased the burden of the workers there.

A third possibility for community support relates to supply of kerosene. We were interested to note in Mbulu District, where kerosene shortages have been acute, that one or two wards were providing kerosene to local health facilities to keep the refrigerators functioning and to ensure that medical equipment could be regularly sterilized. Fortunately, it was possible to speak with the RMA involved, as well as one of the village secretaries involved, to gain some understanding of how this unusual, but very worthwhile, example of community support came to be. When the shortage first emerged, the RMA went to a public meeting of the local ward. Both men and women were in attendance, and he delivered an address on the importance of immunization and the difficulty he was encountering in obtaining kerosene. Perhaps partly because the RMA was a local person and could speak in the local language, he convinced the meeting of the urgency of the situation. The second step was to arrange financing and acquisition of the kerosene with the Ward Finance and Planning Committee. It was agreed that some local villages entirely dependent upon the RD in question would provide relatively large sums of money, another user village with access to other facilities would pay less, and ward villages whose people did not use this particular RD would pay nothing. The money was taken from village treasuries as lump sums; it was not assessed on a per-household or user basis. Village treasuries receive proceeds from communal crop sales, fines, and other sources that might be applied from time to time, and can hold considerable reserves in the case of prosperous agricultural villages. Ordinarily, the money would be used to finance village-based commercial undertakings or improvements on the communal farm, but it can be made available for extraordinary expenditure when necessary.

From the perspective of the villages, their agreement to purchase and supply kerosene did not constitute an ongoing recurrent commitment. Rather, they see this as a one-time expenditure, necessitated by the temporary incapacity of the government to provide the supplies for which it is responsible. The total sum collected (1,350 shillings) will provide kerosene for about three or four months, given a rate of consumption of about 30 liters of kerosene/month and given a local black market price of about 12 shillings per liter, double the controlled price. The village leaders do not believe they could supply kerosene to the RD indefinitely, because of other pressing village needs. Nevertheless, this experience indicates that at least the wealthier areas could make a substantial contribution to recurrent costs of the health system when absolutely necessary.

Other instances of material support observed on the evaluation included provision of farmland to health staff for their personal use. This is a nearly universal practice, although there is variation among communities with regard to whether the land provided

is a portion of the communal farm or comes from outside as an individual plot of ground. In either case, the facility staff alone are responsible for all production tasks.

Finally, some communities provided support by filling old latrine pits and digging new ones. This is the kind of simple, but laborious, service which communities can easily provide and which is of tremendous service to the local health staff.

In sum, we find that the material support forthcoming from communities is largely limited to the traditional self-help contribution (labor), although in some cases communities have gone a bit further to help out with recurrent supplies (water and kerosene). Although the labor supplied is of great assistance to the MOH and to the Tanzanian government generally, it seems clear that many, if not most, communities could do much more, and may, in fact, be required to as implementation of the local Government Act proceeds.

## **2. Traditional Birth Attendants:**

In Tanzania, as in many other parts of the world, there are many local women who specialize to some extent in assisting mothers at birth. Among some ethnic groups, virtually any fairly senior woman with childbearing experience can perform this role, while in other places, only a few women consistently do so. The MCHA Training Program encourages MCHAs to identify and cooperate with TBAs in the areas where they are posted. The purpose is to ensure that TBAs do not feel threatened by the modern services provided in RHCs and RDs; to educate them regarding perinatal care and sanitation; and to increase the likelihood that potentially risky deliveries are identified beforehand and referred for more comprehensive treatment. However, a number of factors reduce the quality of interaction between MCHAs and TBAs, so much so that, in some cases, MCHAs do not even know the names of local TBAs after several years in residence. Below we will discuss some of these factors.

First, TBAs can receive substantial remuneration for the services they provide. In one place visited by the evaluation team, for instance, midwives are generally paid from 5 to 20 shillings (depending on the wealth of the household concerned) and participate in a festive meal for which a chicken or goat is slaughtered. In another somewhat wealthier location, midwives receive clothes, soap, other goods, 30 to 40 shillings in cash, and some services, again depending upon the capacity of the household. This may constitute a significant income in rural areas, and so it is not surprising that many TBAs see the MCHA program as a threat to their positions and are reluctant to cooperate.

Second, TBAs know that women have been encouraged to have their births at health facilities, and fear that they may be punished for assisting women to give births in their homes. Thus, they tend to keep their identities hidden.

Third, many of the MCHAs are single, most are young, and rather few have many, if any, children. Local women are understandably reluctant to commit themselves to the care of young, inexperienced women, many of whom have not yet themselves given birth. Although they have been told of the value of modern training and medical practice, it is still difficult for them to ignore the mutual support and depth of practical experience which can be found among the women of their village, particularly among the local midwives.

This problem is particularly acute because older, more experienced MCHAs, with children and greater training, tend to be stationed in urban areas and minor settlements,

where local women are more educated and most likely to accept modern assistance; and at the same time the young, single, inexperienced MCHAs are posted to the most isolated RDs, where local women tend to be least educated and most unlikely to respond to modern opportunities.

Fourth, many women try to get the most benefit possible by combining elements of both traditional and modern systems. They attend clinic regularly for prenatal care; if assured by the MCHA that the pregnancy is progressing normally and the birth is likely to be uncomplicated, they then are likely to have the birth at home under the care of a TBA. Insofar as this constitutes a kind of self-screening mechanism through which risky cases can be identified for special treatment, the outcome is satisfactory, although sudden complications will remain a problem.

A final complicating factor has to do with MCHA postings. For the most part, these women are posted to locations that are not their homes, meaning that they do not understand local traditions, do not speak the local language, and as a result have difficulty in establishing useful contacts among local people. It is significant that in the two locations visited where the MCHAs had been posted near to their homes, the MCHAs voiced no reservations about their relationships with TBAs and, in fact, seemed to have established superb rapport with them, leading to an exchange of information about pregnant mothers and birthing procedures. Unfortunately, the fact that MCHAs tend to come disproportionately from the more educationally advanced areas of the country makes it impossible to send each one back to her own home if the needs of the more remote areas are to be met as well.

In sum, there are a number of institutional and cultural factors that currently prevent full cooperation among MCHAs and TBAs. One positive note, however, is that we found nowhere any evidence of antagonism between MCHAs, TBAs, and local women. MCHAs do not generally treat local peasants with disdain or attempt to demonstrate any social superiority. Finally, the emerging program to train village health workers (VHWs) in basic MCH approaches should go a long way toward compensating for the inability of some MCHAs to liaise with TBAs, since every effort is being made to recruit TBAs into the VHW program.

### **3. Relationships with Local Leaders:**

If MCHAs are able to develop good working relationships with local leaders (ward secretaries, village chairmen and secretaries, ten-cell leaders, and some others), there is the potential to develop broad community support for the program and its goals. At the same time, inability to mobilize or coordinate with the politico-administrative infrastructure can weaken the capacity of the MCHA Program to meet stated objectives. In our evaluation, we witnessed a broad range of types of interaction between MCHA staff and local leaders; our observations are summarized below.

The most frequent type of cooperation appeared to take place in the context of public meetings, in which some member of the local medical staff might be introduced by a ward secretary and then speak for a few minutes on the importance of child immunizations or similar topics. This type of interaction and support is relatively easy to arrange, and, as we have seen in the case of kerosene shortage in Mbulu, it can result in concrete and substantial advances. However, too often such meetings can become counterproductive, when the speakers come from outside the local ethnic group, deliver their messages in Kiswahili rather than the local language, and when, perhaps, their mode of addressing the local people becomes a bit exhortatory and authoritarian. In

these circumstances, public meetings can generate little public understanding of or support for MCH goals.

Some MCHAs have developed personal relationships with local leaders, so that they can draw upon their understanding of and authority within the local community without the need for special public events, or, at least, in addition to them. In several locations, for example, MCHAs worked with ward and village secretaries and ten-cell leaders to followup on mothers whose children were consistently malnourished, or to help identify local TBAs and initiate discussions and exchange of information with them. Interactions of this sort, which are focused upon resolution of a particular problem or task that needs to be done, are likely to be successful and improve community understanding of the MCHA's role. Public meetings, on the other hand, too often make a "we-them" distinction between villagers and outside officials, and sometimes this makes communication of important messages difficult.

#### **4. Conclusions and Recommendations:**

Our recommendations focus on the three aspects of community relations discussed here: material support, TBAs, and local leaders.

The Tanzanian government is unable to provide complete material support to the MCH Program, neither for capital construction nor for recurrent costs. In the case of capital construction, both government and local communities expect a significant contribution to come from the local people who will benefit from planned facilities. But for recurrent costs, government and local communities expect that the full burden will be borne by central, regional, or district authorities. Our findings demonstrate that this is simply not a viable procedure.

**Recommendation:** The MOH, in conjunction with other appropriate agencies of the Tanzanian government, should explore to the fullest extent the possibilities for local financing of some portions of the recurrent costs of the system at RHC and RD level. Since the new district councils, to be instituted in July, will have extensive revenue generation and allocation authority, the MOH may wish to prepare a position paper outlining how this new organization may best support the costs and also the objectives of the MCH Program.

The MOH already recognizes the need to integrate TBAs into the modern health care system, and, in fact, Tanzania has done much more along these lines than many other African countries.

**Recommendation:** Current outreach activities of MCHAs should be supported and given increased attention in the training curriculum, and current efforts to recruit TBAs into the VHW program should continue to receive a high priority.

**Recommendation:** MCHAs should be instructed in both formal and informal approaches to community outreach, and they should be encouraged to use informal approaches more often than is currently the case. This might be done most effectively by collecting case studies of successful MCHA outreach (such as the team witnessed in Same district), and incorporating them into the teaching curriculum.

## **VI. END OF PROJECT STATUS #5:**

**THE TANGOV'S MOH WILL HAVE COMPLETED STUDIES WHICH WILL PROVIDE A FIRMER DATA BASE FOR FURTHER DEVELOPMENT AND IMPROVEMENT OF THE MCH AND CHILD SPACING PROGRAMS.**

### **A. FINDINGS:**

The MCH Nutrition Unit of the Division of Preventive Medicine of the Ministry of Health conducted a national survey of the MCH Care Programme in 1981. The preliminary report of this survey was published in August 1982. The survey described as a "Public Health Audit" in its preface, was prepared and conducted by an expert/planning committee, which selected ten districts to evaluate, five each from groups stratified as "worst off" or "better off" according to baseline data from the 1978 survey describing (1) availability of vaccines, and (2) number of MCHAs in dispensaries. The methodology consisted of a series of questionnaires dealing with:

1. Service coverage and utilization
2. Immunization coverage
3. MCH Training Programme
4. Trends in morbidity and mortality rates
5. Organization and management of MCH Care Services
6. Constraints to MCH Care Services.

The baseline for the evaluation consisted of data obtained in a 1978-79 inventory of the health sector which provided data for comparison from the 10 districts to be evaluated. The questionnaires were administered to MOH officials and MCH care providers at each level of care as well as trainers, trainees, patients, and village leaders. The results, which are referred to in several sections of this evaluation report, consisted of a fairly comprehensive and critical analysis of the MCH care programme, and included suggestions for needed changes in various aspects of the programme.

In the opinion of the evaluation team, the 1981 MOH evaluation was a creditable and well executed task. The final report has not yet been disseminated, so it is too early to assess its impact. In the interim, the evaluation team in the course of its field visits encountered two regional surveys of MCH services conducted by the RMO of Dodoma region and by AMREF in Arusha region. In each instance the concern expressed by the RMO about program deficiencies revealed in these studies and the actions generated by the findings convinced the evaluation team that the capacity exists, at least at some regional and local levels, for local problem-oriented studies which provide a needed data base for remedial action.

The apparent deterioration in the record keeping and reporting mechanisms since about 1980-81 is a matter of great concern to the evaluation team. Although undoubtedly aggravated by the shortages (transport, paper, printing press, etc.) referred to elsewhere in this report (See A-3 in EOPS #4) and the general deterioration of the economy since the Uganda War, it appears to be accompanied by a lessened appreciation of the importance of data management and resolve to correct it. Although we encountered some attempts to compensate for the absence of prescribed forms, our attempts to elicit reliable data deemed critical to the evaluation, both financial and programmatic, were often frustrated. The inability of the Ministry of Health to furnish a copy of its 1981 Annual MCH Report and gaps in the records of various components of the current MCHA deployment are symptomatic of this problem. Although an evaluation/research section has been set up in the MCH unit in response to the deficiencies

identified in the 1981 evaluation, it has not yet been implemented. An annual or semi-annual MCH newsletter to be disseminated to the regions with information compiled and analyzed by the evaluation/research section was to commence with a November 1982 issue, but is not yet forthcoming.

## **B. CONCLUSION:**

The determined and meticulous attention provided in the early phase of this project to the development of a practical and low cost record-keeping system for MCH/CS services stands to be wasted unless action is taken soon to rehabilitate it. The continued flow of information in both directions between the center and the most peripheral service delivery site is critical if the program is to maintain its ability to adapt to changing circumstances.

**Recommendation:** The MCH unit should give immediate attention and high priority to the rehabilitation of its management information system. Some degree of external support in the form of technical assistance and funding in the short term is needed in order to insure that the contribution of the MCH Training Program to the MCH programme in general continues.

## VII. GOAL:

The ultimate goal of this project is to assist the government of Tanzania to bring basic health services within the reach of its largely rural population. It is expressed in the original project paper in the following goal statement:

"This program will assist the government of Tanzania to improve and expand a country-wide health delivery system as a component of rural development so as to increase the health, well being, and the quality of life of the rural population."

One of the major components in the shift from largely urban, high-technology, and physician and hospital dependent medical care toward simpler rural health care has been the emphasis on preventive maternal and child health services. Since 1973-74, the MCH Program of the Ministry of Health has become a cornerstone of the rural health delivery system. Of the three basic cadres to be based at Rural Health Centers and Rural Dispensaries, the MCH Aide is a multipurpose auxiliary whose basic training prepares her to provide comprehensive MCH services, including antenatal care, family planning, immunizations, nutrition services, health education, and simple deliveries.

The construction of training facilities, the training and deployment of MCH aides, and the provision of equipment and commodities for rural MCH/CS services are the demonstrable achievements of this project. The evaluation team regards these achievements as evidence that the overall project goal has been attained.

At the same time, the contribution that the MCHA Training Project has made toward Tanzania's rural development appears seriously threatened by current economic constraints, and by certain programmatic problems that are addressed in detail throughout this report. It is the opinion of the evaluation team that while basic changes in the project's concept and direction are not required, continued strong government support and attention to the problems identified in the conclusions and recommendations of the evaluation are essential to the further expansion and improvement of the rural MCH programme.

## VIII. BENEFICIARIES:

The immediate and direct beneficiaries of the project are the 2,509 MCHAs who have been trained in the 18 training centers and the 74 recipients of participant training over the life of the project. The acquisition of new knowledge and skills, the opportunity for gainful employment and career advancement thus achieved is of itself a significant achievement.

The indirect beneficiaries of the project are the rural families whose health and well being have been enhanced by the expansion and improvement of MCH services to which the project contributes. (See EOPS #3 for discussion and recommendations). The multiplier effect of a raised consciousness of preventive interventions in the MCH cycle, of the integration of preventive with curative services, and of the involvement of MCHAs as health educators (and more recently as participating trainers in the emerging VHW Program) is incalculable. The degree to which the sum total of rural MCH services relieves the burden of costly curative care, decreased productivity and long term disability arriving from preventable perinatal, neonatal, and early childhood mortality and morbidity would require special cost-benefit evaluation. Such evaluation is sorely needed in order to demonstrate clearly to health planners and policy-makers in Tanzania as elsewhere, the cost effectiveness of this type of investment in prevention. To the extent that such projects as this relieve an already heavy burden on the country's limited resources for curative and rehabilitative services, Tanzania's whole population is the ultimate beneficiary.

The evaluation team feels strongly that follow-up impact studies would be particularly useful because of the importance of Tanzania's health planning strategy as a model for other LDCs with similar problems of limited resources and a large underserved rural population. Tanzania's early departure from the Western model of largely urban-based and curative oriented medical services represents a bold experiment in the direction of WHO's goal of health for all by the year 2,000. As such, it deserves the most careful and objective scrutiny.

## **IX. UNPLANNED EFFECTS:**

The major (and still not completely resolved) unplanned effect of the project arises from the impact of MCHA training on the employability and marriageability of the young women selected for training. Clearly, the intent of the project is to select inhabitants of rural villages who are expected to accept rural posting (in RDs or RHCs) subsequent to their training experience. Certain selection factors, including the original plan to train women already employed as nursing assistants in hospitals, less stringent requirements of prior education, and some examples of local nepotism led to problems in compliance with the rural posting requirement in the early phases of the project. The resultant tightening of admission criteria in 1978 and 79, along with stronger enforcement of the rural posting requirement and the adoption of the new two-year MCHA curriculum have undoubtedly improved the quality of MCH training and performance, but have not entirely ameliorated the problem of movement of some trained MCHAs to urban hospital employment. It appears that some of this attrition in the rural ranks of trained health workers is inevitable, since the selection of better educated (and, thus, upwardly mobile) village women and the acquisition of specialized skills results in some of them marrying men with urban based employment. While certain suggestions and recommendations are made in the body of this report to ameliorate this problem, the evaluation team feels it is an inevitable result of the modernization process in which MCHAs are participants, and that to the extent that those who marry and move to towns are generally employed in MCH related jobs in District or Regional Hospitals, their training is not wasted.

## X. LESSONS LEARNED:

By far, the outstanding lesson learned in this project, in the opinion of the evaluation team, lies in its validation of the basic assumption underlying Tanzania's rural health planning strategy. The shift in emphasis from urban-based, curative-oriented medical care to rural-based, integrated preventive/curative services delivered by specially trained cadres of paramedical workers has clearly contributed to the achievement of equity in health care to which the Tanzanian government is committed. The extent to which the rural MCH Program in general, and the MCHA Training Program in particular departs from the Western model of medical care is a lesson to other LDCs and donors alike in planning health services that are attuned to the limited resources and demographic characteristics of the country.

The five year life of the project envisioned in the original project paper did not take into account the numerous exigencies of construction, procurement, and execution that are inherent in an undertaking of this magnitude in any developing country. Nor could the variety of economic setbacks to which Tanzania has been subjected since the project was formulated in 1973 be foreseen. Accordingly, the delays in bringing the project to fruition and the accompanying effects of inflation and rising costs resulted in several project revisions and escalation of dollar inputs. Future planning of similar projects of this magnitude should take into account the myriad constraints and delays which inhibited its achievement in the planned time frame.

A major lesson in inter-sectoral interdependence is illustrated by the logistic and supply problems which loom as a major obstacle to the overall success of this project. The most visible evidence, namely the impact of shortages of petrol and kerosene, on the vital integrity of the cold chain on which successful immunizations depend, is but the tip of a logistic iceberg which extends throughout the rural health delivery system. The underpinnings of community support, cooperation of the political infrastructure and the vitality of the rest of the economy upon which the health delivery system depends, illustrate its interdependence with other sectors and the importance of multisectoral planning for integrated rural development.

In regard to the use of the rural MCH program as an entry point for the introduction and promotion of child spacing, significant lessons can be learned from the experience of this project. The lack of hard data regarding contraceptive prevalence or continuation rates notwithstanding, it is clear that the acceptance of family planning in Rural Dispensaries and Rural Health Centers remains exceedingly low. Despite shortages of other medications and supplies, the evaluation team found no evidence of shortage of contraceptive commodities, and in most instances MCHAs are adequately trained and competent in promoting the health benefits of child spacing. The constraint lies chiefly in the low level of motivation of couples (in most cases attributed to reluctance by the husband) to accept the concept of family planning. In the opinion of the evaluation team this does not negate the value of MCHA training in child spacing or the inclusion of family planning methods in the package of rural MCH services. Indeed, the diffusion of child spacing, albeit slow, has begun, and will continue, particularly with the renewed vocal support of the political leadership of the country and the enlistment of the Wazazi (parents organization) in the effort to educate the public to its importance. The ultimate lesson of the project, however, is that the availability and promotion of family planning does not alone result in rapid acceptance and diffusion in the absence of the constellation of social and economic factors "beyond family planning" which must accompany the provision of contraceptive services.

## **XI. MAJOR RECOMMENDATIONS FOR MOH OR OTHER DONOR ACTION:**

1. The MCHA Training Project is basically sound and worthy of continuation. It should be sustained and supported by the Ministry of Health with assistance from the donor community where necessary. Local self-help efforts should be encouraged to cover recurrent costs wherever possible. Project training output should be monitored and adjusted periodically to the needs of the rural MCH Care Programme in order to maintain financially sustainable levels of each essential category of paraprofessional staff, and to avoid training more MCHAs than can be reasonably employed. (External Factors. page 10)
2. Although USAID is currently committed to starting no new projects, efforts should be made to invoke centrally funded resources, PVOs, and residual funds in the pipeline wherever possible to assist the project through the present economic crisis. (External Factors. page 10)
3. In order to assure quality training, MCHA schools should each have a full complement of faculty. Ideally, fifteen additional tutors are needed to fill the current shortage. If it is not economically feasible to recruit additional tutors at this time, we recommend consolidating existing faculties into a smaller number of schools rather than continuing schools which are not fully staffed. (EOPS #1. page 28)
4. A list of drugs which MCHAs are responsible to dispense should be abstracted from the curriculum, along with a summary of the knowledge about each drug for which they are held responsible - e.g., action, dosage schedules, storage, contraindications, possible untoward reactions. (EOPS #1. page 28)
5. Didactic material on child spacing should be taught during the first year of the 2-year curriculum, and near the beginning of the 9-month curriculum. (EOPS #1. page 29)
6. The curriculum should be reviewed periodically to bring it into conformity with new developments in the theory and practice of MCH. (EOPS #1. page 29)
7. References on anatomy and physiology, basic nursing, and contraception should be added to the MCHA Training Centre libraries. (EOPS #1. page 29)
8. A clear outline should be provided of the objectives of the field experience, including a quantified enumeration of the activities which the students are expected to perform. (EOPS #1. page 29)
9. A manual for MCHAs should be written in Kiswahili. Every MCHA should have a copy of the manual. It should be in a type of notebook which allows for pages to be removed or added as parts of the manual are revised, etc. (EOPS #1. page 29)
10. The MOH should give official recognition to the necessity for MCHA postings to respond to variations in regional population size and in regional infant mortality rates. This would simply endorse the informal, but highly commendable, posting pattern which has evolved during the history of the MCHA Training Programme. (EOPS #2. page 37)

11. The MOH should consider revision of MCHA salary schedules to provide modest differentials for services in rural areas. (EOPS #2. page 37)
12. The MOH should consider revising MCHA promotion schedules to provide for delayed promotion for those not working in RDs. (EOPS #2. page 37)
13. The MOH should consider periodic rotation of hospital-based MCHAs for temporary service in rural locations. (EOPS #2. page 37)
14. In the development of the Village Health Worker Programme, every effort should be made to incorporate MCH content in VHW training courses and the establishment of complementary working relationships between MCHAs and ViHWs. (EOPS #2. page 38)
15. The lack of reliable service statistics and reports of clinic activity requires prompt attention. The record keeping system originally set up by the MCH Programme provides adequate information for measurement of acceptor rates, but is not being implemented at present. Modification of child spacing records to provide for calculation of continuation rates as well as acceptor rates is recommended. Technical assistance may be required to implement this recommendation; and assistance from appropriate donors should be enlisted. (EOPS #3. page 43)
16. A group of Tanzanian physicians and others with special knowledge and interest in the question of the timing of postpartum contraception in lactating women should be convened, perhaps with consultation from WHO, IPPF and/or USAID's Office of Nutrition to describe more clearly the patterns of lactational amenorrhea among Tanzania women and to make recommendations regarding the most appropriate timing and manner of initiating contraception for breastfeeding women. Such recommendations should then be incorporated into the MCHA curriculum, and, through continuing education mechanisms, should be communicated to the existing MCHA cadre. (EOPS #3. page 44)
17. In those districts in which MCHA training schools are located, the vehicles currently allocated to MCHA training schools should be fully shared with Regional MCHA Coordinators. (EOPS #4. page 49)
18. The MOH should familiarize itself with implications of the SAP for the health sector and lend its support to the programme whenever appropriate. (EOPS #4. page 50)
19. Consideration should be given to the possible advantages of issuing more licenses for distribution of kerosene within each district. (EOPS #4. page 50)
20. Alternatives to the present system for procuring kerosene locally should be considered, in order to improve the assurance of kerosene supplies to service delivery sites. (EOPS #4. page 50)
21. The MOH should give greater priority to repairing and utilizing the printing presses at its disposal; specific requests should be made to donors to provide large stocks of paper and ink to produce the forms; and the MOH should re-examine its own recurrent expense priorities to see whether provision of essential record keeping and reporting forms is being given the high priority it requires. (EOPS #4. page 50)

22. The MCH unit should give immediate attention and high priority to the rehabilitation of its management information system. Some degree of external support in the form of technical assistance and funding in the short term is needed in order to insure that the contribution of the MCH Training Programme to the MCH Programme in general continues. (EOPS #5. page 57)

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## I. GLOSSARY OF ABBREVIATIONS USED IN REPORT:

AMREF:	African Medical Research Foundation
CCM:	Chama Cha Mapinduzi (People's Revolutionary Party)
CEDHA:	Center for Educational Development in Health, Arusha
DDD:	District Development Director
DMCHC:	District Maternal and Child Health Coordinator
DMO:	District Medical Officer
DSM:	Dar es Salaam
EOPS:	End of Project Status
ILO:	International Labour Organization
MCHA:	Maternal and Child Health Aide
MCH:	Maternal and Child Health
MOH:	Ministry of Health
PROP:	USAID's Project Paper
PVO:	Private Voluntary Organization
RD:	Rural Dispensary
REDSO/EA:	Regional Economic Development Support Office for East Africa
RHC:	Rural Health Center
RMCHC:	Regional Maternal & Child Health Coordinator
RMO:	Regional Medical Officer
RTC:	Regional Trading Corporation
SAP:	Structural Adjustment Programme
Tan Gov or GOT:	Government of Tanzania
UMATI:	Family Planning Association of Tanzania
WAZAZI:	Tanzania National Parents Organization

## II. SUMMARY OF OFFICIALS & INSTITUTIONS VISITED BY THE EVALUATION TEAM:

### A. Dar Es Salaam:

#### MOH:

Honorable Dr. A. Chidun, Minister of Health.

Dr. A. Mgeni, Director, Division of Preventive Services.

Dr. Tengio Urrio, Senior Medical Officer in Charge,  
MCH and Nutrition Unit, Division of Preventive Services.

Mrs. Tunda Gugu, Nursing Officer, MCH Training and  
Training Division.

Mrs. Margaret Mtwale, Nursing Officer, MCH Training Divi-  
sion.

Mrs. Massila, Nursing Officer, MCH-Nutrition Unit,  
Division of Preventive Services.

Miss E.E. Zablun, Principal Nursing Officer, Manpower and  
Training Division.

Dr. K.R. Mchatta, Medical Officer, Training (Paramedical),  
Manpower and Training Division.

Mr. Masawe, Accountant, Manpower and Training Division.

#### UMATI:

Mrs. Christina Nsekela, Executive Secretary.

Dr. Rhodes Mwaikambo, Medical Director.

#### University of Dar Es Salaam, Faculty of Medicine:

Professor Malise Kaisi, Obstetrics and Gynecology.

Professor Martin Mandara, Community Medicine.

#### UNFPA:

Mrs. Wilma Goppel, Deputy Representative for Tanzania, Malawi and  
Seychelles.

### B. Dodoma Region:

#### Dodoma Regional Hospital:

RMO, Dr. Joachim Tesha

R-MCH Co., Mrs. Sobayi

Matron, Regional Hospital, Mrs. Kalanje.

Hospital Secretary, Luca Francis Mpayola.

Haneti Dispensary:

RMA, (who?)

MCHA, Mrs. Sharizadi Sogora.

Kondoa MCHA Training School and District Hospital:

Principal, Miss Leah Mpogole.

Warden, Maria Paul

DMCHC, Miss Evarista Mtui.

MO, Dr. Dionis

Hospital Secretary, Lawrence Lujeba.

Pahi Rural Dispensary:

MCHA, Mrs. Mghase.

Busi Rural Health Clinic:

Medical Assistan in Charge, Miss Mwakifuna.

Mondo Rural Dispensary:

RMA, Mr. Basinda.

C. Arusha Region:

Mbulu MCHA Training School and District Hospital:

DMO, Dr. Ole Lengine.

Principal, Mary Boniface

Tutor, Loema Tluway.

Warden, Deborah Merus.

DMCHC, Catherine Arseni.

Regional Primary Health Care Coordinator, Mrs. Theresia Mubiru.

District Hospital Secretary, Mr. Mwabuto.

Daudi Dispensary:

RMA, Lucian Issay.

MCHA, Bertha Magasi.

Village Midwife, Regina Cosmas.

Gronyeda Dispensary:

RMA, Andrea Paulo.

MCHA, Mary Lucian

MCHA, Mary Boamu.

Endabash Rural Health Clinic:

Medical Assistant in Charge, Mashombo Mkamba.

MCHA, Celina John.

Arusha:

RMD, Dr. Moshi.

RMCHC, Mrs. Mgonja.

Center for Educational Development in Health Arusha:

(CEDHA), Principal, Dr. Ezra Teri

Dr. Peter Petit.

D. Kilimanjaro Region:

Moshi:

Kilimanjaro Zonal Office, KCMC

Zonal MCH Coordinator, Miss Joel.

Same:

District Development Director, Mr. Gondwe.

Acting DMO, Dr. Mgonja.

MCHA Training School:

Principal, Mrs. Rehema Mashana.

Tutor, Miss Selina Mcharo.

Tutor, Miss Maria Goretti William.

Warden, Mrs. Yulia Mnzava.

MCHA Coordinator, Mrs. Janet Palangyo.

Same District Hospital:

DHO, G. Nyaki.

Nursing Officer, Mr. L. Mwejuma.

Hedaru Dispensary:

RMA

MCHAs (2)

Gonja Dispensary:

RMA

MCHA

Gonja Lutheran Hospital:

Administrator, Mr. William Mughamsa

Medical Staff:

Dr. Magomba

Dr. Mdeme

Dr. M. Nieminen

E. Korogwe District:

Korogwe Public Health Nursing School:

Principal, Mrs. E. Nnko

DMCHC, Mrs. Moshi.

### III. JOB DESCRIPTION, DUTIES, AND RESPONSIBILITIES OF MCH AIDE;

1. Provide comprehensive daily maternal and Child Health Services in health centers and dispensaries. This includes:
  - Antenatal service
  - Postnatal service
  - Nutrition evaluation and education
  - Child welfare services
  - Immunizations
  - Child spacing
  - Recognition and treatment of minor health problems of children
  - Malaria chemosuppression
  - Health education on personal and family hygiene and child rearing
2. Health education (and demonstration) to be conducted in the community, clinics, schools, markets, homes, women's groups, church groups, political meetings, hospitals. Give demonstrations whenever possible.
3. Conduct normal deliveries in health centres, dispensary, and home.
4. Identify community health problems and give appropriate preventive instruction to individuals, families and groups, e.g., communicable disease control and non-communicable disease caused by poor environmental sanitation, water supply.
5. Emphasis on preventive approach in activities in clinics and community.
6. Use the child health card and antenatal cards to recognize "at risk" mother and child and refer as necessary.
7. Accurate use of daily attendance form, and monthly statistical form, with emphasis on proper record keeping.
8. Gives primary care, and emergency treatment for complications and refers for medical attention.
9. Establish working relationships with local traditional midwives and other health workers.
10. Provide and maintain a clean, well-cared-for environment in the clinic and organize the activities for efficient flow of patients and effective patient care.
11. Conduct child spacing education and implementation of the service.
12. Visit regularly selected families and special cases in their homes.
13. Coordinate working in relation with the Grade B Nurse.

#### Work relationship:

1. Medical Assistant or Rural Medical Aid.
2. District MCH Coordinator.

#### **IV. NURSING/MIDWIFERY CADRES OF TANZANIA:**

##### **Grade A Nurses:** (Two Routes)

1. Qualify as a Grade B nurse, work for three years, complete a 18-month Public Health course (including teaching/learning theory and practice teaching) at Mubimbili, Graduates are Grade A Public Health Nurses (PHNs). Males qualify as psychiatric nurses, Grade A.
2. Complete secondary schooling, complete four-year nursing curriculum (includes public health); during the fourth year of this curriculum, students specialize in either psychiatric nursing or midwifery; those who do midwifery graduate as Grade A Nurse-Midwives.

##### **Grade B Nurses:**

Complete primary schooling (seven years), complete a three-year general nursing curriculum followed by one-year of midwifery (all except male nurses take midwifery); graduates are Grade B Nurse-Midwives. Males qualify as Grade B nurses.

##### **Village Midwives:**

Training of this cadre ended in 1975. The MOH does not plan to train any new village midwives and intends to retrain all existing village midwives to be MCHAs. To date, 777 village midwives have been "upgraded" to MCHAs. Approximately 500 village midwives remain in the pool and still need to be retrained. In order to qualify as a village midwife, they had to complete primary school (eight years when most of them did it) and then work as a nursing assistant. Those who were trained as village midwives were selected from the pool of nursing assistants. Village midwife training was hospital based. There was no standard curriculum; it varied from hospital to hospital. Some had one year of training, some had two years of training.

##### **Nursing Assistants:**

Complete seven years primary schooling then join the MOH service, working in a hospital; after one month of on-the-job orientation, they have one year of training, then return to work as nursing assistants.

## V. REFERENCES

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3. Basic Needs in Danger: A Basic Needs Oriented Development Strategy for Tanzania. International Labor Office, Addis Ababa, 1982.
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6. Maternal and Child Health Service in Tanzania. Richard H. Hart, M.D., M.P.H. MCH Consultant, Ministry of Health, Dar es Salaam, 1976.

## APPENDIX VI.

### LIST OF RECOMMENDATIONS:

#### (BY CHAPTER)

#### CHAPTER III. EXTERNAL FACTORS:

1. The MCHA Training Project is basically sound and worthy of continuation. It should be sustained and supported by the Ministry of Health with assistance from the donor community where necessary. Local self-help efforts should be encouraged to cover recurrent costs wherever possible. Project training output should be monitored and adjusted periodically to the needs of the rural MCH Care Programme in order to maintain financially sustainable levels of each essential category of paraprofessional staff, and to avoid training more MCHA's than can be reasonably employed.
2. Although USAID is currently committed to starting no new projects, efforts should be made to invoke centrally funded resources, PVOs, and residual funds in the pipeline wherever possible to assist the project through the present economic crisis.

#### CHAPTER VI. PURPOSE: EOPS #1:

1. Re: Recruitment, Selection of Students:
  - a. Strict adherence should be maintained to the requirement of completion of Grade 7 for admission to MCHA training.
  - b. Items should be added to the entrance exam to measure basic arithmetic skills.
  - c. Instead of selecting students from each region on the basis of the rank order of their entrance examination results, preference should be given to married applicants who have passed the examination and who are living with their husbands in MCH-underserved areas of their districts.
2. Re: Tutors, Training of the Trainers:
  - a. In order to assure quality training, MCHA schools should each have a full complement of faculty. Ideally, fifteen additional tutors are needed to fill the current shortage. If it is not economically feasible to recruit additional tutors at this time, we recommend consolidating existing faculties into a smaller number of schools rather than continuing schools which are not fully staffed.
  - b. After this initial effort to increase the number of faculty up to the planned levels, every effort should be made to replace tutors who leave the program with new teachers prepared as Grade A PHNs.

- c. When necessary, unmarried tutors should be reassigned to a different school in order to avoid having only one faculty member at any school.
- d. To the extent that PHN-prepared nurses are not available, the project should continue to emphasize MCH experience in rural areas as a criteria for selection of tutors.
- e. Some salary increase should be provided to the tutors (now paid at the same rate as similarly prepared nurses who work in hospitals or clinics).
- f. One session at each annual MCHA continuing education seminar should be devoted to small group discussions between graduate MCHAs and MCHA tutors, with the stated purpose of providing feedback to the tutors regarding strengths and weaknesses of the MCHAs' preparation relative to the needs they perceive once they are in the field.
- g. The project should continue with plans to address those specific knowledge deficiencies of tutors which were identified by the 1981 MOH program evaluation.

3. Re: The Curriculum:

- a. A precis of the curriculum should be prepared in Kiswahili.
- b. The project should go forward with concrete plans to add basic arithmetic and English training to the curriculum.
- c. A list of drugs which MCHAs are responsible to dispense should be abstracted from the curriculum, along with a summary of the knowledge about each drug for which they are held responsible - e.g., action, dosage schedules, storage, contraindications, possible untoward reactions.
- d. Didactic material on child spacing should be taught during the first year of the 2-year curriculum, and near the beginning of the 9-month curriculum.
- e. The written curriculum should be revised to:
  - (1) avoid giving students the impression that continued use of all child spacing methods results in reduced future fecundability;
  - (2) improve the section on complications associated with the use of IUDs;
  - (3) in addition to discussion of contraceptive risks, include discussion of the incidental maternal health benefits associated with the use of specific child spacing methods - e.g., reduction of anemia and tubal pregnancies associated with hormonal contraception.



2. The MOH should consider revision of MCHA salary schedules to provide modest differentials for services in rural areas.
3. The MOH should consider revising MCHA promotion schedules to provide for delayed promotion for those not working in RDs.
4. The MOH should consider periodic rotation of hospital-based MCHAs for temporary service in rural locations.
5. In the development of the Village Health Worker Programme, every effort should be made to incorporate MCH content in VHW training courses and the establishment of complementary working relationships between MCHAs and VHWs.

#### CHAPTER VI. PURPOSE: EOPS #3:

1. Insofar as many women who receive antenatal care in MCH clinics ultimately deliver at home, special attention should be given to the content of antenatal care, in general, and risk assessment, in particular. Operations research should be conducted, and the results disseminated in seminars and continuing education exercises to assure that the potential for appropriate health interventions in antenatal visits is fully realized.
2. The lack of reliable service statistics and reports of clinic activity requires prompt attention. The record keeping system originally set up by the MCH Programme provides adequate information for measurement of acceptor rates, but is not being implemented at present. Modification of child spacing records to provide for calculation on continuation rates as well as acceptor rates is recommended. Technical assistance may be required to implement this recommendation; and assistance from appropriate donors should be enlisted.
3. A contraceptive prevalence survey is strongly recommended, as a means to guide policy development, educational and motivational efforts and service program planning.
4. The importance of child spacing as a health measure should receive greater emphasis, both in the training of MCHA faculty as well as the MCHAs themselves, and in the seminars provided for DMOs and MCH coordinators.
5. A group of Tanzania physicians and others with special knowledge and interest in the question of the timing of postpartum contraception in lactating women should be convened, perhaps with consultation from WHO, IPPF and/or USAID's Office of Nutrition to describe more clearly the patterns of lactational amenorrhea among Tanzanian women and to make recommendations regarding the most appropriate timing and manner of initiating contraception for breastfeeding women. Such recommendations should then be incorporated into the MCHA curriculum, and, through continuing education mechanisms, should be communicated to the existing MCHA cadre.

## CHAPTER VI. PURPOSE: EOPS #4:

1. In those districts in which MCHA Training Schools are located, the vehicles currently allocated to MCHA Training Schools should be fully shared with Regional MCHA Coordinators.
2. RHC and RD staff requiring transport for specific purposes such as patient referral and re-supply of kerosene and medicines should be allowed to post a flag or suitable symbol at the facility or upon a nearby road that would indicate such assistance is required. Government vehicles, at least, and possibly private vehicles as well, should be required to stop at such easily recognized symbols and provide the assistance required if at all possible. It is noted that this measure was recommended in the previous USAID evaluation in 1976.
3. The MOH should familiarize itself with implications of the SAP for the health sector and lend its support to the programme whenever appropriate.
4. Consideration should be given to the possible advantages of issuing more licenses for distribution of kerosene within each district.
5. Alternatives to the present system for procuring kerosene locally should be considered, in order to improve the assurance of kerosene supplies to service delivery sites.
6. The MOH should give greater priority to repairing and utilizing the printing presses at its disposal; specific requests should be made to donors to provide large stocks of paper and ink to produce the forms; and the MOH should re-examine its own recurrent expense priorities to see whether provision of essential record-keeping and reporting forms is being given the high priority it requires.
7. The MOH should plan and execute a study of the logistics of vaccine supply and consumption, and a view toward identifying bottlenecks and possibilities for low-cost improvement. (Note that that USAID Project was planning to fund such a study, but this apparently has not taken place. USAID should, therefore, explore the possibilities of providing the necessary support, so that this important end-of-project status indicator can be made available.)
8. The MOH should (a) inventory the number of adult scales needed; (b) inventory the number of child scales needed; and (c) seek donors to supply the additional scales required. This should be fairly easy for donors to respond to, since the need is obvious and the expenditure required is for equipment, not recurrent costs per se. The adult scales should be of the beam balance type, and the child scales should be of the salter hanging spring type.
9. The MOH should begin now to explore ways in which new refrigerators may be acquired and to identify those which have been in service longest and which will, therefore, have to be replaced soonest.
10. The MOH, in conjunction with other appropriate agencies of the Tanzanian government, should explore to the fullest extent the possibilities for local

financing of some portions of the recurrent costs of the system at RHC and RD level. Since the new district councils, to be instituted in July, will have extensive revenue generation and allocation authority, the MOH may wish to prepare a position paper outlining how this new organization may best support the costs and also the objectives of the MCH Programme.

11. Current outreach activities of MCHAs should be supported and given increased attention in the training curriculum, and current efforts to recruit TBAs into the VHW Programme should continue to receive a high priority.
12. MCHAs should be instructed in both formal and informal approaches to community outreach, and they should be encouraged to use informal approaches more often than is currently the case. This might be done most effectively by collecting case studies of successful MCHA outreach (such as the team witnessed in Same district), and incorporating them into the teaching curriculum.

#### CHAPTER VI. PURPOSE: EOPS #5:

1. The MCH Unit should give immediate attention and high priority to the rehabilitation of its management information system. Some degree of external support in the form of technical assistance and funding in the short term is needed in order to insure that the contribution of the MCH Training Programme to the MCH Programme in general continues.