EVALUATION

IMPLEMENTATION OF PRIMARY HEALTH CARE

IN SELECTED PROVINCES

IN THE SUDAN

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It was with great sorrow that the Evaluation Team learned of the family tragedy that necessitated the departure of Dr. Mary Ann Micka from Sudan and from her role as an energizer, originator and leader in the work of the evaluation effort. The team was deprived of Dr. Micka's broad knowledge and experience concerning the Primary Health Care Program in Sudan at a critical juncture. May we take this opportunity to convey to her the Evaluation Team's condolences.

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PREFACE

The Evaluation Team was asked to provide the Ministry of Health (MOH) Sudan, UNICEF, USAID, and WHO with information on progress being made to provide health care to the population of Sudan, especially in the rural areas, by means of the Primary Health Care (PHC) approach. The evaluation attempts to assess the extent of progress made or improvements that have been effected particularly during the period 1976/77 to March, 1982.

Field visits were made to health facilities and related institutions in four provinces: North Kordofan and Kassala Provinces in North Sudan, and Bahr el Ghazel and Upper Nile Provinces in the South. Twelve indicators were used to identify the most important achievements. The evaluation team formulated sets of evaluation questions which were used by team members during their field visits. The field teams made observations and collected data on: health personnel and training, managerial performance, logistics and supplies, health information systems, recurrent costs of the PHC Program, coverage, accessibility and availability of PHC services, and community participation.

Data collected during the field visits of the four field teams were brought together in discussions by the full evaluation team into a set of "findings". These findings, plus interviews and discussions with health officials from the MOH and other key officials at central level and study of pertinent documents and records at all levels, enabled the team to formulate a group of recommendations.

The key recommendations are presented in Section I. Summary and Recommendations. The findings upon which the recommendations are based are detailed in the body of the report. Additional information is recorded in the reports of the four field teams which appear in Appendix E.

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LIST OF ABBREVIATIONS

A/C of H	Assistant Commissioner of Health
AMREF	African Medical and Research Foundation
APHA	American Public Health Association
ASO	Assistant Sanitary Officer
BEGP	Bahr el Ghazal Province
CHW	Community Health Worker
CHWTS	Community Health Worker Training Schools
CMS	Central Medical Stores
EPI	Expanded Program of Immunization
ET	Evaluation Team
GOS	Government of Sudan
HIS	Health Information System
HV	Health Visitor
LDC	Less Developed Country
LWS	Lutheran World Services
MA	Medical Assistant
MCH	Maternal and Child Health
MO	Medical Officer
MOFEP	Ministry of Finance and Economic Planning
MOH	Ministry of Health
MSCI	Medical Service Consultants, Inc.
NCHW	Nomadic Community Health Worker

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NGO	Non-Governmental Organization
OV	Onchocerciasis Vector
PHC	Primary Health Care
PHCC	Primary Health Care Complex
PHCP	Primary Health Care Program
PHCU	Primary Health Care Unit
PHO	Public Health Officer (Inspector)
RC	Recurrent Costs
RH	Rural Health
RHC	Rural Health Center
RHSP	Rural Health Support Project
RMOHSW	Regional Ministry of Health and Social Welfare
SMA	Senior Medical Assistant
SO	Sanitary Overseer
SSU	Sudanese Socialist Union
TBA	Traditional Birth Attendant
UNICEF	United Nations Children's Fund
UNP	Upper Nile Province
USAID	United States Agency for International Development
VMW	Village Midwife
WHO	World Health Organization

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I. SUMMARY AND RECOMMENDATIONS

Summary

The Evaluation, undertaken by an evaluation team sponsored by the Ministry of Health (MOH) Sudan, UNICEF, USAID, and WHO addressed the question of progress being made in the implementation of Sudan's Primary Health Care Program (PHCP) in four provinces selected for detailed study.

PHCP is described as a community-based health service that reaches beyond the health center and dispensary to rural and nomadic populations with health promotive/preventive activities and curative services at the community level. It relies upon community participation and self-help. The design called for one community health worker (CHW) based in a Primary Health Care Unit (PHCU) for each 4,000 population.

Implementation of PHCP is proceding along the general lines propounded in the national health plan in 1975. PHCP was planned in an exemplary manner, although the action plan is not specific in regard to the phased implementation of its components. Accomplishments were scheduled for completion in 1984 but new plans with a smaller CHW/population ratio (1/1,000) are projected for 1990.

Although considerable success has been achieved, with 2,800 PHCUs having been established during the past 5 years, implementation has been impeded by considerable financial and technical constraints. The PHCP receives strong support within the MOH, has had close to $50,000,000 of international assistance committed up to 1980/81, and is a program well-accepted and actively supported by the rural and nomadic populations it reaches. An estimated 75 percent of the targeted rural population is already being reached based on the 1/4,000 ratio or 19 percent according to the revised ration of 1 CHW/1,000 population.

The evaluation was carried out by a 10-member multidisciplinary team working with MOH program implementors and project personnel. The study focused upon the work and activities of front-line health workers serving rural and nomadic populations in four selected provinces and upon progress being made in strengthening their supportive infrastructure. Analysis of recurrent cost factor implications of the USAID-supported PHC projects in the North and in the South of the Sudan were included.

Field teams visited the provinces of Bahr el Ghazal (BEGP), Kassala, North Kordofan and Upper Nile (UNP) to observe PHC activities and collect data through guided interviews. Data

were then assembled and analyzed by functional groups made up of team members who assessed the significance of the field findings, related them to the national PHCP and formulated sets of recommendations. The evaluation concerns elements only of the PHCP, addresses qualitative as well as quantitative accomplishments and employs the critical instant techniques of evaluation.

Although MOH places high priority upon the PHCP and donor agency contributions have been significant, sociopolitical, economic and technical constraints have had an impact upon the program. These include the decision to decentralize the governmental apparatus to regional level; stringent financial limitations especially for foreign currency exchange; weaknesses within the managerial-supervisory component of the MOH supporting infrastructure, including brain-drain to neighboring countries; maldistribution of medical and health personnel; problems of transport, communication and commodities, with drugs at PHCU level in particularly short supply.

In addition to MOH inputs, bilateral, multilateral and non-governmental commitments to primary health care (PHC) in Sudan have approached $50 million, including vehicles, construction of facilities, drugs and other commodities, technical assistance and training. Donor support in northern Sudan tends to follow MOH guidelines for program implementation; in the South there is a trend toward donors' assuming responsibility for health services delivery in a given geographic area.

MOH achievement targets are not broken down by year, but PHCUs are being established as new CHW trainees are graduated. Some 2,800 CHWs are already employed in community-based PHCUs. The evaluation report addresses selected qualitative aspects of PHC worker activities in terms of preventive-promotive health activities compared to curative (low to absent), supporting structures in manpower development, supervision (weak), logistics, health information system components and recurrent cost factors. Construction of new facilities at community level by villagers is proceeding well; construction of donor-assisted dispensary facilities is behind schedule. Logistics support for the PHCP is weak; drug supplies are low with virtually no anti-malarials available at any level of MOH. New lists of essential drugs for the PHCP have been developed recently and accepted by MOH.

The purpose and design of the PHCP as developed by MOH in 1975 remains valid--to provide maximal coverage of rural and nomadic populations with PHC by 1984. The term "coverage" originally based on 1 CHW/4,000 population, is being revised by MOH to 1/1,000. The evaluation team underscores problems in developing a realistic definition. As the problem has evolved over time, some elements have outstripped others in implementation;

a restructure of the MOH's efforts directed to achieving a more favorable balance between preventive/promotive activities (now largely neglected) and curative (being emphasized) would seem to be in order. The original design was appropriate but lacked strength in the MCH component. The USAID-sponsored Rural Health Support Project (RHSP), to run for five years, will tackle this issue.

The population to be reached by the PHCP is estimated at 16,625 thousand rural, semisettled and nomadic people. Coverage of urban and periurban populations, served by the MOH hospitals, dispensaries and health centers, is not included in these figures. Reductions in mortality, morbidity or infant mortality rates have not been demonstrated, nor should changes be expected in the near future.

Unplanned effects include: (1) an asymmetrical growth of two components of the PHCP with emphasis being given to curative medicine as contrasted with the balanced community-based health services that was originally contemplated and which gave equal weight to the health promotive/preventive component. (2) The original design called for an umbrella-type administrative structure under which PHC would encompass such other peripheral activities as MCH, EPI, malaria, TB control; instead, the PHCP has assumed the characteristics of a "vertical health program" at regional, district and local levels. (3) Originally conceived as an individual selected and paid by the village, the CHW now receives a salary from the district council or the regional government, is technically supervised by the formal health system, and receives his drugs and supplies from outside the village. It is possible that community members are beginning to view the CHW as a health provider representing government rather than as an indigenous member of the community who promotes healthful conditions.

The Evaluation Team (ET) in its report, identifies a series of recommendations which might be incorporated in future plans to develop and expand Sudan's PHCP and which also might serve as a checklist for consideration by PHCP implementers in other less developed countries (LDCs).

Recommendations

The findings of the evaluation team upon which these recommendations are based are detailed in the body of the report (see Section V, Status of Implementation) and in the reports of the four field teams (see Appendix E).

Recommendations are grouped under the following headings:

A. Health Personnel and Training
B. Management
C. Logistics and Supply
D. Health Information System
E. Recommendations for Reducing Costs of the PHCP
F. Recommendations for Increasing Revenues of the PHCP
G. Coverage, Accessibility, Availability of PHC and Community Particpation

A. Health Personnel and Training

1. Currently there is a shortage of all PHC providers. Manpower training needs assessment should be undertaken on a regional and provincial basis to identify number and category of shortfalls based on actual health needs, population characteristics, and training resources.

2. Regional health officials, in collaboration with the MOH Department of Statistics should obtain demographic data for the district and village levels in preparation for the formulation of a health manpower development plan.

3. Departments for health manpower development should be established at regional/provincial levels.

4. All PHC workers, including medical assistants (MA), CHWs, village midwives (VMWs), sanitary overseers (SOs) and assistant SOs, should become more involved in preventive and promotive health activities. In addition, they should assume a leadership role in organizing community activities directed at improving local health conditions. These health workers must be trained specifically for these activities.

5. Central MOH authorities should establish a means for and guidelines for a review and revision of task oriented job descriptions for all categories of PHC personnel. Regional authorities should utilize such guidelines in developing job descriptions relevant to their local situations. These job descriptions should be used by trainers to assist in curriculum revisions and by supervisors as a managerial tool.

6. Training programs for all categories of primary health workers should be modified, in accordance with the new job descriptions, incorporating the following items and tutors should be retrained accordingly:

a) emphasis on prevention of disease and promotion of health, e.g., child care, child spacing, sanitation rather than on curative services.

b) emphasis on task-oriented problem solving training activities, e.g., conducting health surveys, improving sanitation, motivating the community about health problems, rather than on theory and disease processes.

c) emphasis on community-based training within the villages rather than on curative training now being done in dispensaries and hospitals.

d) emphasis on the techniques of transmitting health information to the illiterate population.

7. Training centers should place emphasis on the mobilization of trainees themselves for making improvements in the training center facilities and their environs (including nearby villages). Trainees could, for example, become more self-supportive and gain useful experience through the establishment of vegetable gardens, raising poultry and/or livestock, and undertaking maintenance and repairs of the training center itself.

8. All maternal and child health (MCH) workers, after a revision of their training programs, should assume responsibility for child care and child spacing, in addition to their work with mothers in maternity care. Implementation plans should be developed for the regional and provincial levels at least.

9. The role of the traditional birth attendant (TBA) in the community as a service provider needs to be reviewed and upgraded. An evaluation of the TBA training in Southern Kordofan and the South sould be conducted and training revised appropriately. Adequate supplies are needed to improve the services rendered to the community by the TBA.

10. All CHWs, MAs, supervisors and tutors should receive training in the maternal and child health implications of child-spacing and in techniques to impart this information to the members of the community.

11. Criteria and mechanisms should be developed for selecting CHW candidates who are capable and have strong leadership characteristics. Educational requirements should be weighed in a flexible and pragmatic manner to encourage recruitment of such candidates.

12. Working within the context of prevailing cultural norms and traditions, every effort should be made to increase the recruitment and training of women as CHWs.

13. Tutors for CHWs should be drawn for the ranks of experienced public health officers (PHO) and health visitors (HV) in

order to provide a multidisciplinary teaching team rather than selection of experienced MAs only. For areas of the curriculum where special skills are required, e.g., health information and statistics, the use of statistical technicians as part-time tutors should be encouraged. One approach to the problem of excess tutors which would then result is to involve tutors half time in supervision.

14. Teaching materials and manuals in Arabic for use in the North and the South should be developed for MAs, VMWs, PHO, SO, HV and assistant HV if they do not now exist.

15. Training of all tutors in systematic course design, teaching methodology etc. should be conducted, possibly through the Education Development Center.

16. Refresher courses for all categories of health workers, including medical officers (MOs) should be reviewed and revised to include practical training in community-based health promotive activities. A systematic planning schedule for such refresher courses should be developed at the district level with MOH providing appropriate resources. Refresher courses should be evaluated for their impact on knowledge, attitudes, and practice.

17. Participant training for senior health officials should be task-oriented and adjusted to the job description of the officials. For many, a one-month course relevant to the conditions of the Sudan would be adequate to cover organization, management, planning, allocation of resources and utilization of health information for management decisions.

B. Management

1. MOH should play a more active role in setting criteria for a standardized organizational structure and in providing regional officials with guidelines for planning and implementing the PHC system. The criteria and guidelines should be developed with the purpose of achieving national goals and should be governed by the functions necessary to address the major health problems.

2. To avoid duplication and to maximize resources, central coordination of PHC donor agencies' contributions, present and proposed, should be clearly established within the MOH based upon an upward flow of information about program implementation and program needs at regional level. The present system appears to be fragmented among International Health, Health Planning and Rural Health. Standardization of drugs among the various donors should be included in this mechanism.

3. Establish effective two-way communication between the regions and the Central MOH in the planning of PHC delivery systems. The establishment of regional planning departments would facilitate such communication.

4. The planning activities of regional and district councils should be supported by technically competent advisors, such as community physicians, and by the training of district and regional personnel.

5. Budgets for PHC should be established at all administrative levels. The PHC budgets should support community health development activities re: water, environmental sanitation, nutrition, maternal and child care, etc.

6. Training in management for regional and district personnel is needed to promote and to establish more effective and efficient feedback and control mechanisms within districts and between the regional and district councils and health personnel.

7. The structure of the health services below the Deputy Director/Assistant Commissioner level should be reviewed and revised to enable the implementation of PHC and the integration of PHC activities and to minimize the vertical organizational pattern which is prominent. This would, inter alia, improve supervision and logistical support of frontline workers.

8. Strengthen field supervision of CHWs and PHCUs by training supervisors and by improving transport arrangements to PHCUs, supplemented where necessary by periodic supervisory meetings of CHWs at a more central point when they come to collect salaries and drug supplies. Tutors should become involved in supervision to establish a feedback mechanism for improving training of CHWs. The concept of supportive supervision and the techniques of supervision should be introduced in the intial training of all health workers.

9. Where the PHC "complex" (PHCC) model is being implemented, the activities should be reviewed to ascertain lessons of experience that could lead to more effective implementation elsewhere. Where the PHCC model is not being implemented, a study should be conducted to determine why it has not been implemented.

10. A leader of the health team at the village level should be selected by each village council. This individual would then be responsible for coordinating the activities of health personnel and should provide technical guidance on health matters to the village council.

11. The PHC system should integrate the activities of bilharzia, leprosy, malaria, onchocerciasis and sleeping sickness at the village level.

12. There is a need for an assessment of the career mobility open to CHWs and health statistical personnel with specific attention given to the opportunities for further training and career advancement.

13. A system for the assignment of health workers should be developed based upon information collected for the manpower needs assessment and the manpower development plan.

14. A director of PHC services (all 8 components) should be appointed at regional and provincial levels. Deputies/assistants for Health Manpower Development and MCH/Child Spacing should also be named.

C. Logistics and Supplies

1. Standardization of drug kit contents for a 3 month supply should be undertaken for all units. To cater for local conditions, however, it may be necessary to vary the contents and have more than one type of "kit".

2. Local pharmaceutical manufacturing should be encouraged to produce the drugs for the "kits" and to undertake the packing.

3. The lists of equipment and instruments for PHCUs and dispensaries should be reviewed and standardized for all units of the PHC system.

4. A reserve supply of consumable items which form a part of the standard kits, e.g., syringes, needles, sutures, catheters, etc., should be held in stock at regional and district level stores.

5. Existing buildings for medical stores should be upgraded, cleaned and properly arranged. Shelving should be provided.

6. The building program for new stores should take account of the total needs for the region and allow for future expansion.

7. Training of storekeepers should be in line with the national system for medical storekeeping but with consideration for the language difference in the North and South. A training program should be undertaken to upgrade the performance of storekeepers, especially in inventory control, record keeping, and ordering. Evaluation of the storekeepers' courses offered at the

Management Development Center and the Central Medical Stores (CMS) should be undertaken as a first step.

8. PHC vehicles:

a. Existing facilities for the repair of vehicles should be made more effective to maintain the operational capability of all government vehicles.

b. Greater control of the use of PHC vehicles by the keeping of meaningful log book records should be started and inspection by donor agencies should be encouraged.

c. Additional appropriate and alternative means of transport is needed for supervision and commodity delivery. Encouragement should be given to the use of animals, bicycles, water transport and other cost-effective forms of transport.

d. The appointment of regional and provincial supervisors for transportation/communication systems would facilitate (b) and (c) above.

9. The possibility of greater utilization of river transport should be investigated, particularly for the movement of drugs and supplies to the South.

D. Health Information System

1. The Health Information System relating to PHC should be based on standard forms and procedures throughout Sudan and should be developed to provide a practical and regular reporting system.

a. In the event that the present system, which is just being implemented proves unsatisfactory, it should be reassessed; a shortened and simplified monthly reporting form should be considered to include information on the following items only:

1) Number of persons in attendance (children, adult males, adult females).

2) Number of new cases (by diagnosis).

3) Number of births (born alive, born dead).

4) Number of deaths (under 1 year, 1-4 years, others).

2. Supervision should be enhanced by defining precise managerial functions at each level; providing instructions on the flow of activities and a timetable of the processing stages with clear guidance on when and how to take action if delays occur.

3. Consideration should be given to the need for continuing technical and financial assistance to the Department of Health Statistics, MOH to assist in the training and organizing of district and regional offices of statistics.

4. A needs assessment should be conducted to determine the appropriateness of electronic data processing facilities at the MOH, but not at the regional level at this time. There is a need to facilitate the processing of data and its publication, as well as feedback to the field.

5. All units operating within the system should be provided with adequate supplies and equipment including registers, work-sheets, report forms, carbon paper and files. Statistical units at hospitals, district and regional offices should be supplied with adequate storage facilities for their records and adding machines or calculators.

6. The role of the CHWs and MAs in the issuance of birth and death certificates should be reviewed by the MOH and the Ministry of Finance and Economic Planning (MOFEP) Department of Statistics as the present system causes confusion which adversely affects Birth and Death Registration.

7. There should be a review of the training and re-training needs at all levels of the health information system, e.g., the frontline recorders (MAs and CHWs) re: precise instructions for completing forms and use of the data to identify health problems in their areas; statistical personnel re: completion of new forms; health managers re: importance of the system and its managerial needs.

8. Senior statistical clerks should be trained to teach the CHWs, MAs and nurses about the Health Information System and its importance to the PHCP.

E. Reducing Costs of PHC

1. In view of the Government of Sudan's difficulty in meeting the recurrent cost of the PHCP, donors should attempt to minimize the recurrent cost burden which their projects might impose, e.g., the construction specifications for dispensaries, training schools and other PHC facilities should minimize re-current costs of building maintenance and repair (particularly

the foreign exchange component).

2. For supervisory purposes, the PHC system should use a single type of vehicle, robust and with high mileage per gallon. Standardization of the make used will permit economies in the area of spare parts. Donors should provide only the standardized vehicle, even when this is not manufactured by the donor itself.

3. A new system of incentives should be considered for the drivers of PHC vehicles, instituting rewards or sanctions which will encourage careful use and maintenance of the vehicles.

4. For the transportation of heavy loads (e.g., drug distribution), the PHCP should consider using private contractors rather than maintaining a fleet of government vehicles.

5. To reduce losses of drugs in the distribution system, drugs should be acquired and distributed in the form of prepackaged kits.

6. The system of tariffs and exchange controls should be rationalized, at least as it regards the treatment of certain imported raw materials whose present artificially high tariff inhibits the development of a local pharmaceuticals industry.

7. Familiarity with traditional health practices, such as the use of herbs as medicinal agents, should be introduced into the CHW training to augment the limited drug resources.

8. In view of the limited amount of foreign exchange available for drugs, it is important that the funds be spent on those items with the greatest effectiveness (in terms of contributing to the health of the majority) in relation to cost.

F. Increaseing Revenues of PHC

1. Recipient contributions in dispensaries and PHCUs, perhaps tied to the dispensing of drugs, should be encouraged. The funds in question should be utilized for PHC activities, with the community taking the lead role in regulating and managing the use of the funds. Service fees are preferred over specific charges for drugs. No charge should be made for children under five years of age.

2. The establishment of charitable endowments in support of PHCUs and dispensaries should be officially encouraged.

3. A study of the relative cost-effectiveness of the PHC system and hospital based treatment system as it presently exists should be undertaken to determine whether a reallocation of

resources in favor of PHC would raise the productivity of the health care system as a whole.

G. Coverage, Availability, Accessibility and Community Participation

1. During the next six year plan, priority should be given to improving the quality of services provided and to enlarging the scope of PHC services to all eight components provided routinely at the village level.

2. Targets set for further extension of the coverage of rural populations by PHC should be closely matched with resource availability, as projected by regional health authorities and the Central MOH and with local population densities.

3. The formal and informal institutions at village and district level should be utilized as fully as possible in extending knowledge of, and soliciting community support for, the PHC approach. Orientation of members of Regional Executive Councils and District Councils should be undertaken by regional health officials to familiarize them with the PHC approach. At the local level, village councils should receive similar orientation and training by CHWs.

4. The establishment of workshops should be considered for the training of personnel from district, regional/central levels in health planning, management and supervision in relation to the PHC approach. It should then be possible to assist local authorities in identifying their health problems, priority needs, local resources and requirements in order to develop a realistic health plan and to promote a more effective and efficient feedback and control mechanism.

5. Every effort should be made to stimulate increased community participation, particularly in the form of PHCU construction and maintenance, community instituted health promotive, disease preventive activities and administrative support for the CHW, i.e., use of recipient contributions/local taxes to purchase supplies and pharmaceuticals for use at the local level.

II. SUDANESE SOCIO-POLITICAL SITUATION AT TIME OF EVALUATION

There are a number of factors which impinge upon and affect the performance of the PHCP, yet are beyond the control of the MOH. In effect, they are "givens" which the evaluation recognized must be taken into account in explaining the operation of the program now and over the next three to five years. While the salience of the individual factors varies both over time and for particular aspects of the program, collectively they constitute the environment within which the PHCP operates.

1. Geography of Sudan

Sudan is the largest country in Africa; it is roughly equal in size to all of Western Europe, or the United States between the Rocky and the Appalachian mountains. Sudan's 18 million residents are widely scattered over its vast territory. Most of the population is not served by adequate transport. North-central Sudan is linked by a rail line from Port Sudan through Khartoum, El Obeid, Wau and Nyala. But the rail system suffers from inadequate rolling stock, poorly maintained roadbeds, insufficient maintenance and spare parts and the line is cut by periodic washouts during the wet season. The White Nile which dissects the country south-to-north historically was the backbone of transportation between Khartoum and Juba. However, its efficiency has been reduced severely because of inadequate attention to channel maintenance plus lack of vessels and insufficient dockside storage facilities. Thus the bulk of transportation is carried by the country's road network. But owing to the lack of all-weather roads, much of the country, especially in the South and West is cut off during the six to eight months of the wet season. Overall, transportation is slow, costly and unrealiable.

2. Socio-Cultural Diversity

Roughly two-thirds of the Sudan's population is Arab/Islamic and one third (largely within the Southern Region) is African/Christian. Yet these two basic populations contain an amazing diversity. Within the South, there are scores of tribes each with its own language and often unique culture. The Nilotic communities of the upper south, of which the Dinka is the largest, are seminomadic pastoralists. While residing in fixed villages, most of the men and teenagers leave their farmsteads during the dry season to accompany their cattle into wetlands. During the wet season, they return to their farms. From May through November the rains close the roads and isolate most of the population. In the lower south, the population is largely composed of sedentary farming communities. Except for those along the Juba-Yambio or Juba-Bor roads, these farming communities too are cut off from the outside world during the wet season.

The northern population is roughly twelve percent nomadic. These people move from place to place seeking water and grazing for their camels, goats and sheep. The nomads are among the most traditional in the customs and beliefs, in part because few are able to attend school. The sedentary neighbors, especially those of larger villages and towns, are somewhat less traditional. Nevertheless, traditional Islamic practices, such as gender segregation, remain firmly rooted throughout the North.

Overall, the Sudan is home to some 500 tribes or distinct communal groups who speak at least 50 different languages. Many are extremely isolated both culturally and physically. In few places on the earth does one encounter the degree of social and cultural particularism found in the Sudan.

3. Refugees

The Sudan currently offers assylum to almost 500,000 refugees from neighboring countries. Of this total, 300-350,000 are from Ethiopia, 80-100,000 from Uganda, and 10-15,000 from Chad. With the exception of the Chadians who are expected to return to their homes shortly, the refugees appear likely to remain in Sudan for the foreseeable future. In responding to the needs of these refugees, the Government of Sudan (GOS) has received assistance from the United Nations High Commissioner for Refugees, bilateral contributions and a host of private and voluntary organizations. Even with this generous outpouring of assistance, however, meeting the health needs of this large refugee population (second in size in Africa, Somalia's is larger) has created serious difficulties.

Primary among these problems is the added strain placed on the existing health care system. For instance, some 200,000 refugees have entered the Kassala area in the past three years. While PHCUs are established in official settlements, local hospitals have not been expanded to meet the influx. Moreover, the upwards of 250,000 refugees are not located in official settlements, but have moved into Port Sudan, Kassala, Gedaref, Khartoum and other cities, towns and villages. In the South, most Ugandan refugees are being resettled to official sites. Yet in both the east and south, the refugees create a sharply increased demand for medicines, primary and other health care providers, facilities and other resources which severely tax the existing system.

Attempts to meet the health needs of refugees by private and voluntary organizations have not always been effectively coordinated within the existing regional and local delivery systems. PHCUs are sometimes built before CHWs are available to staff them; drugs and other supplies may be ear-marked for

refugees when neighboring communities lack them; highly specialized curative programs are undertaken in areas with relatively small client populations when they would be more cost-effective if established in a central location. Overall, little donor attention has been given to urban and spontaneously settled refugees.

4. Decentralization and Regionalization

The GOS took a bold initiative in 1981 when it created five new regional governments and devolved to them responsibility for local development and the provision of public social services. While this step was widely praised for bringing decision-making closer to the grass roots, it also caused considerable concern that the demands of establishing and implementing programs, such as the PHCP, might outstrip available human and financial resources. The enactment of the Local Government Reorganization Act of 1981 followed upon regionalization and allocated major planning and implementing responsibilities once held by provincial governments to district and local councils. Decentralization of the Southern Regional Government's responsibilities will be made taking into consideration the pluralism and particular historical factors prevailing throughout the region. Thus, provincial governments will likely continue to play somewhat more of a role in the Southern Region than will be the case in the north.

While the issues of sorting out personnel and establishing new administrative hierarchies connecting local, district and regional authorities are being addressed, there is a growing recognition of the need to revise and perhaps reorganize the channels of communications and responsibility between the central government and the regions. Regionalization and decentralization dictate that the roles and responsibilities of the national MOH, MOFEP and other central bodies should be changed. It is likely that organizations and procedures throughout the health care system will be evolving and changing for some time to come.

5. Current Financial Crisis

The Sudan is currently facing a grave economic crises which has profound implications for the PHCP. The country is running a trade deficit in excess of one billion dollars; export earnings cover less than one-third of imports. Debt service alone is greater than export earnings. The current budget deficit is over 40 percent of the total budget. Inflation is running around 40 percent per year. These macroeconomic indicators find reflection in a general shortage of spare parts and imported goods, especially petroleum which is now claiming about one-quarter of Sudan's import budget. A concomitant of the economic crisis is the emigration of skilled Sudanese to better paying jobs in neighboring oil-rich countries. While the GOS, supported by

international donors, has taken steps to slow and eventually reverse the current downward economic spiral, prevailing shortages of cash, manpower and other resources will continue at least through the present decade.

6. Reliance on International Donors

Several international donors including WHO, UNICEF and USAID are playing a major supportive role in the PHCP. They are providing badly needed commodities, supplies and technical assistance. Yet the continuation of donor assistance is always linked to many factors beyond the control of the recipient and the requirements of orderly project implementation. Given the likely long-term nature of the current economic crisis, donor assistance can continue to play an important role in the PHCP. At the same time, however, care must be taken to develop programs that can be continued when current donor activities are completed. And special attention should be given to preventing the growth of a dependency on international donors which would cause the program to be crippled should donor resources be withdrawn.

III. BACKGROUND: THE PRIMARY HEALTH CARE PROGRAM IN THE SUDAN

The national health program for the Sudan, formulated in 1974, was incorporated as part of the Government's socio-economic plan for the period June 1977-June 1984. Planners were requested to work within the priorities for health set out in the Phased Programme of Action of the ruling party, the Sudanese Socialist Union (SSU), in which primary emphasis is given to the development of social and preventive medical services. The program was published in 1975 under the title "National Health Programme 1977/78-1982/83" which identified Primary Health Care (PHC) as one of the eight health programmes to be given priority among Sudan's health-related and health problems. In 1976, detailed plans were published in the booklets: "Primary Health Care Programme Southern Region Sudan" (known as the 'Green Book'), and "Primary Health Care Programme Eastern, Northern, Central and Western Regions of the Sudan" ('Brown' or 'Orange' book). In these documents special emphasis was laid on caring for the country's rural population and nomadic groups.

PHC was seen as "a community-based health service that reaches beyond the health centre and the dispensary; is specifically designed to carry responsibility for the whole rural and nomadic populations; lays greater stress on health prevention and promotion than on curative services; includes rural development activities; relies on community participation and self-help in the development of a rural health care system at the periphery; and is subject to community control through local institutions at the village level..." [1]

The programme design calls for PHCUs located in rural and nomadic populations, each unit serving 4,000 people and staffed by a CHW selected by the community. Five PHCUs are supervised by a MA based at a dispensary which caters also to a population of 4,000. The dispensary and its five PHCUs constitute a Primary Health Care Complex (PHCC). (See Figure I.)

A pre-implementation phase was initiated in 1976/77 during which training facilities, trainers and financial and technical support were mobilized. By July 1978 implementation was begun in the Southern Region and in parts of the Northern Provinces. Each province established a central PHC office. At the MOH level, a Department of Rural Health (RH)--later Department of RH and PHC--was organized as a vertical program.

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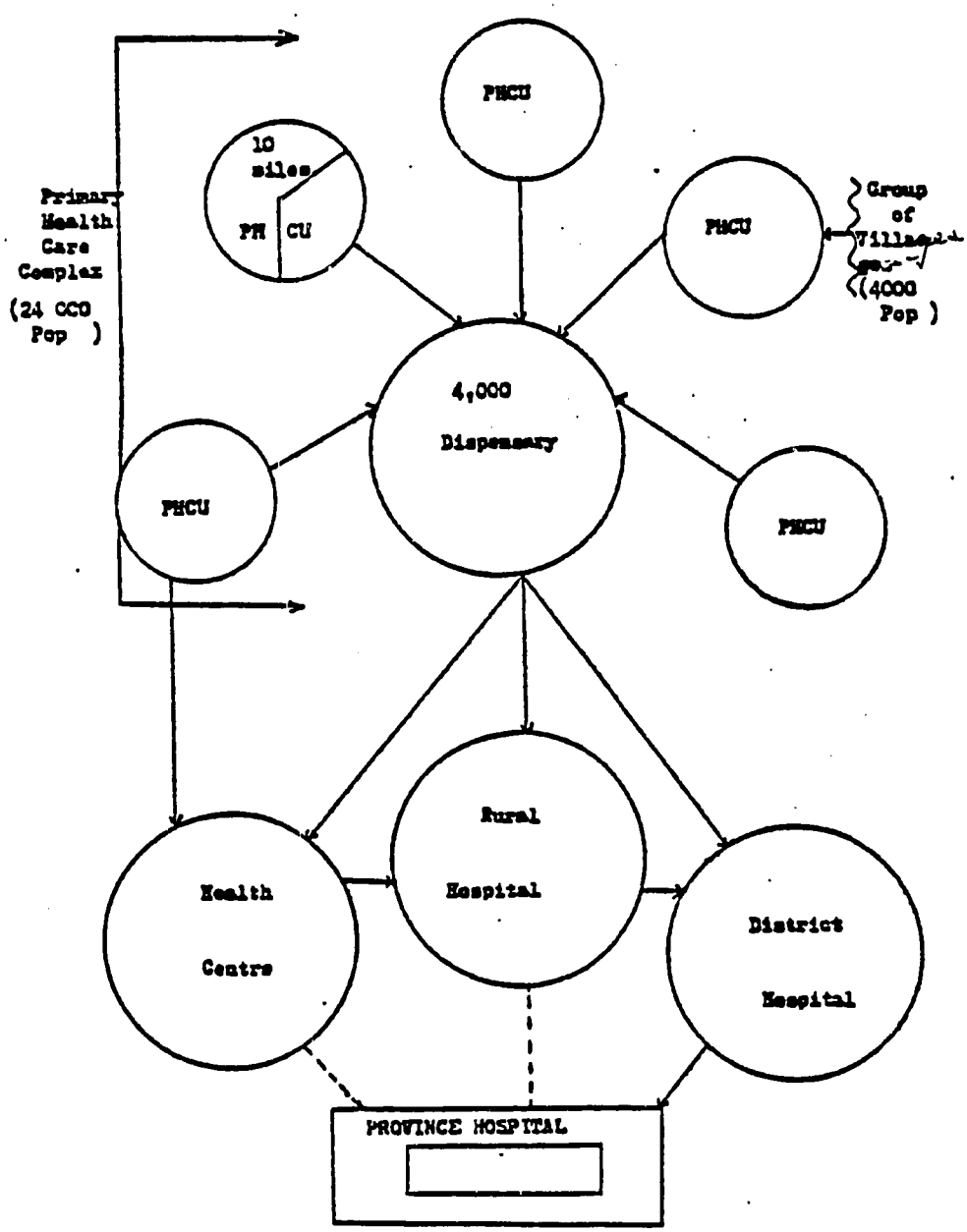
[1] The PHCP in Sudan, A.A. Idriss et al; WHO Chronicle, 30: 370-374 (1976).

Fig. I PRIMARY HEALTH CARE COMPLEX



Key: PHC - Primary Health Care
——→ - Normal Referral
- - -→ - Emergency Referral

Source: MHP Document page 65

NB. This figure has been further perfected as far as referral from PHCU to Health Centre is concerned.

During 1978-79 the provinces began preparing their own budgets for PHCP and submitting them directly to the Ministry of Finance at the central level; the role of the MOH vis-a-vis the PHCP has subsequently trended more to one of guidance, support and negotiations with outside donor agencies and less direct responsibility and control.

Having been organized and implemented from the outset as a "programme" focused on rural populations, organizati nally comparable to such other vertical health programmes such as environmental sanitation, expanded program of immunization (EPI), malaria control, tuberculosis, leprosy, and MCH, the PHCP is, at the present time, undergoing a conceptual review and analysis. The new goal is to create a "Primary Health Care Approach" of broader content and conceptualization than the present PHCP. The steps to be taken that will integrate all facets of the rural health care delivery system into a total "approach" is currently a major concern of MOH health planners.

Specific objectives to be attained in providing health services through the PHC approach are the following:

1) To continue to expand the PHCU network to cover unserved rural populations

2) To establish Rural Health Complexes to provide support, supervision and referral services for the peripheral units.

3) To provide MCH services.

4) To improve rural sanitation.

5) To provide safe water supplies.

6) To establish an efficient logistics and supply system-especially for provision of essential drugs.

7) To establish an appropriate data collection system for information on health status, management, evaluation and planning.

8) To improve health manpower training.

9) To maximize...community participation.

Constraints to the fullest possible development of the PHC program approach include:

- difficulties of communication and transport in a country

of vast size

- limited and maldistributed technical and supervisory manpower

- stringent financial limitations

Demographic Statistics

The last population census in Sudan was conducted in 1973. Since the accuracy of that census has been questioned, there is now a confusing array of estimates based on different assumptions regarding growth rate and "adjustments" to the census data.

One of the most careful and detailed set of projections from the census data has been made by the Population Division of the UN Secretariat, New York, in collaboration with the Department of Statistics, Khartoum, and the Regional Institute for Population Studies in Ghana. They produced three variants which projected the population until the year 2000, but in the short run there is relatively little difference between the variants. How close these projections are to the actual level of the population depends on the validity of the assumptions made. Their realism will not be known until after the next census, which is scheduled for November 1982.

In the meantime however, the medium projection seems to us to provide the best estimates available and it has the advantage of providing consistent information on a wide range of demographic parameters. Unfortunately it does not give sufficient detail for all our needs and estimates, particularly for provincial figures, for which estimates have to be made on the basis of other sources.

The resulting estimates of demographic data are given below in Table I and, because of the confusing range of alternative figures which are variously quoted, we have given in somewhat more detail than would normally be necessary, the sources and methods used to arrive at these figures.

The body of this report has used the figures shown in Table I, but where team reports have used other figures given to them during their visits to the provinces, these have not been altered.

TABLE I

Population Data, 1982 Estimates (2,3)

Sudan, total population	19,792 thousand
Proportion of total population rural	75%
Proportion of total population nomadic	9%
Proportion of rural population nomadic	12 1/2%
Crude birth rate	46.3
Crude death rate	17.7
Population growth	2.9% p.a.
Expectation of life (at birth)	47 years
Infant mortality rate	120
Provincial population totals	
Kassala	1,586 thousand
N. Kordofan	1,445 thousand
S. Kordofan	1,099 thousand
Bahr el Ghazal	1,201 thousand
Upper Nile	883 thousand

2. Sources

(1) The Department of Statistics produced population projections for the six-year plan showing urban/rural/nomadic totals by the old provinces. Where these figures have been used they have been taken from the 1981 Statistical Abstract.

(2) In 1979/80 the Population Division of the UN produced preliminary projections, based on the 1973 census data but adjusted for under-enumeration and as far as possible for migration in the 1970's.

(3) Revised projections were produced by the Population Division of the UN following a visit to Sudan in 1980. These figures are used by the Deprtment of Statistics in their "Second Population Census, 1973; Analytical Report" (Chapter VI) (not yet released).

(4) The above projections by the Population Division give a range of demographic characteristics, derived from their models; but not the infant mortality rate which was provided at special request in September, 1981.

(5) The January 1981 Mission Report of the ECA Cartographic Advisor gives a breakdown of projected population by modern province. These figures were prepared by the Department of Statistics but on the basis of the preliminary projections (2); however, the differences from the revised projections (3) were small.

3. Data Used

As far as possible the medium variant of the projections from source (3) have been used; however, infant mortality has been taken from (4), the Provincial analysis is based on the proportions given in (5) applied to the Regional Data from (3) and the proportions of nomads is from (1). Where rates have been quoted, or used in the models, for five-year periods, interpolations were made to give estimates for mid-1982.

The principal differences between these figures and those given by the MOH in the "Country Statement on Health for All by the Year 2000" are the former's higher rate of growth, greater urban proportion, and lower infant mortality rate. There is however a much greater difference between the figures used here and those given in the "Green Book"; e.g., the total population of the Southern Region for 1982 is now estimated at 4,351 thousand, compared with 3,265 thousand in the "Green Book".

IV. EVALUATIVE METHODOLOGY

The process of formulating the Scope of Work - a process involving representatives of MOH, UNICEF, USAID, and WHO over a period of time - highlighted the need to assess the state of implementation of the PHCP by a series of field visits. In the process of melding the special interests and priorities of these agencies into a common set of objectives, it was decided that the primary focus of the endeavor should be placed on the activities of the front-line health workers in primary health care working in 5 provinces (subsequently reduced to 4 because of complications of communications and transport).

Alternate strategies could have been employed:

a) The MOH could have investigated the PHC activities in Northern Sudan or in the South, or both, in a systematic way to meet the data requirements for evaluation of past efforts and future planning.

b) USAID, in cooperation with the MOH, could have concentrated upon the more limited objectives of an end-of-project evaluation of the two USAID-supported PHC projects, 650-0011 and 650-0019.

c) UNICEF and WHO, singly or together, could have opted, independently, to study the results of their inputs to the PHC activities of the MOH in the Sudan.

A working group of 10 members (3 MOH, 2 WHO, 3 USAID and/or AID contractor personnel, and 2 UNICEF) met on 14-18 March, 1982, prior to the arrival of other members of the ET, to review and revise the scope of work and, inter alia, to address the question of evaluative methodology. One decision related to the time-period of the Sudanese PHCP's implementation efforts to be studied. The evaluation attempts to assess the extent of progress made during the period 1976/77 to March, 1982. Another decision identified a set of 13 "indicators" that could be used to identify the most important achievements (see Appendix A).

The objectives of the evaluation were used as a focus and the indicators as a frame of reference. Then it was possible to formulate questions to which answers could be provided by data collected during field visits to the selected provinces and by interviews with officials at the Central level.

The unusual size and composition of the evaluation team (23 members, of whom 5 were MOH, 1 WHO, 2 UNICEF, 2 USAID, 11 AID-supported contractors and 2 APHA contract evaluators) and their fields of specialization and expertise (see Appendix 3) offered

a choice as to how best to utilize their skills. Specialists could concentrate on a limited section of the PHCP, each in his own field, or, alternatively, data-collection in the field could be done by mixed teams, with the data so collected aggregated and analyzed as a group exercise. The latter method was selected since it enabled a broader input from all participants. The working group further expanded upon "critical instant technique" as the evaluative methodology of choice.

The period of time involved in the evaluation exercise was determined by the MOH request that the main effort be limited to a three week time frame because of the time pressure upon MOH members' participation. Thus, the period of one week was available for field visits and data collection, relatively short in view of the vast size of Sudan and the difficulties of travel and communications.

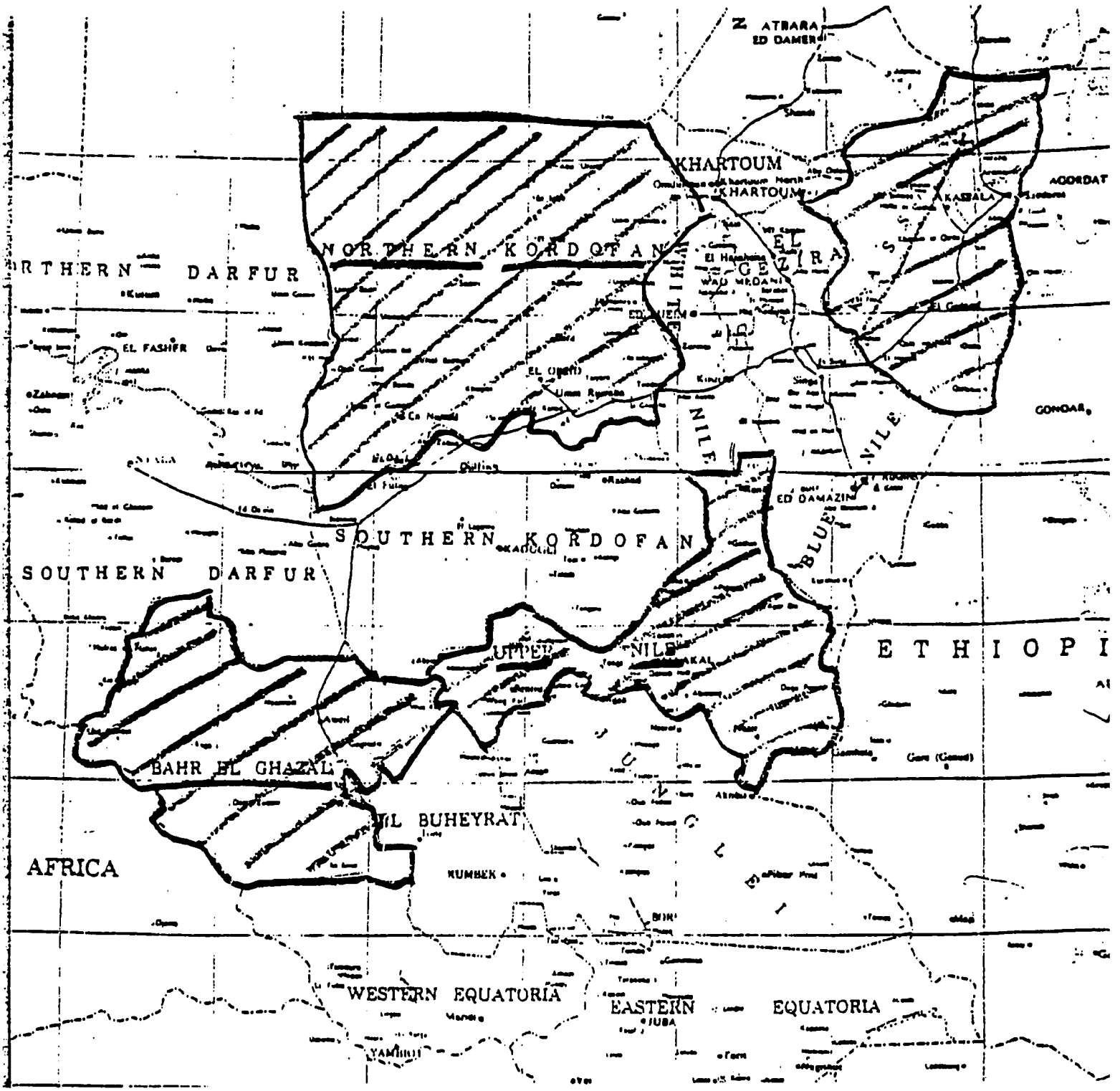
Five provinces were initially selected on the basis of USAID emphasis and MOH interests. Because of complications in travel and communication, the scheduled field visit to South Kordofan was subsequently dropped. Thus, field visits took place in Bahr el Ghazal, Kassala, North Kordofan and Upper Nile (see Figure 2).

Full ET (16 members) plus 5 MOH officials, spent three days in organizing its activities, developing interview guides and working out field and reporting responsibilities in Khartoum prior to making field visits (Appendix B). Four field teams of 4 members each spent 6-10 days each in 4 provinces interviewing regional health officials and visiting PHC facilities and supporting institutions. Upon completion of their field work, the members of the ET convened again in plenary sessions and as functional groups to formulate a general statement to the findings.

Throughout the entire evaluative process, the ET was fortunate to have experienced and knowledegable officials from the MOH as members of field teams, plenary sessions and functional groups. Their input during the entire process was of the greatest value.

Figure 2

PROVINCES VISITED BY EVALUATION TEAM
MARCH-APRIL 1982



V. STATUS OF IMPLEMENTATION

V. STATUS OF IMPLEMENTATION

The status of implementation of the PHCP in the four selected provinces under review is described in the field team reports (see Appendix E). In this section, the field findings are consolidated into an overview that highlights the findings common to the four provinces. The presentation is organized under the headings:

A. Health Personnel and Training

B. Management

C. Logistics and Supply

D. Health Information System

E. Recurrent Cost of PHCP

1) in the North

2) Southern Region

F. Coverage, Accessibility, Availability of PHC and Community Participation

A. Health Personnel and Training

1. Categories of Personnel:

The categories of health personnel who are officialy recognized as being involved, actively, in the delivery of PHC are as follows:

Medical Assistant (MA)
Community Health Worker (CHW and nomad CHW)
Village Midwife (VMW)
Sanitary Overseer (SO)
Assistant SO (ASO)
Nurses working in dispensaries
Mosquito men
Bilharzia men

Managerial and supervisory health workers with responsibility for overseeing the work of the above categories are as follows:

At Central level:

Director General of Rural Health and PHC
Deputy Director General RH and PHC
Director, PHC
Assistant Directors PHC (2)
Operations Officer

At Regional Level:

Regional Minister for Public Services
Director General for Health and Social Welfare

At District Level:

Deputy Directors for Health
Senior Medical Assistants (SMA)
Public Health Officers (Inspectors) (PHO)
Nursing and Midwifery Inspector
Health Visitors (HV)

Non-health personnel involved in PHC activities:

Members of the Regional Executive Councils
Members of the District Council
Members of the Village and Frague Councils

Personnel who are not officially recognized, yet who are involved in the delivery of health services:

Traditional Birth Attendants (TBAs)
Herbalists

2. Adequacy of numbers of health personnel:

The numbers of PHCUs opened since 1976/77 may be taken to be the number of CHWs graduated from training during the period, since all graduates are established in a PHCU in their own communities upon graduation.

Table II shows the present position with respect to available health manpower involved in the PHCP. Requirements by 1990 are estimated as 9,113 PHCUs; 2,778 Dispensaries; and 244 Rural Health Centers (RHCs).

TABLE II

SUMMARY TARGETS IN TERMS OF FACILITIES AND HEALTH MANPOWER REQUIREMENTS BY 1990

A. Health care facilities (based on Rural Health Complex Model)

Type	Total Required	Existing	Needed
-Primary Health Care Unit (PHCU) Village level-settled population	9,113	2,922	6,191
-Dispensary - large villages	2,778	887	1,991
-Rural Health Center (Hospital town level)	244	71	173

B. Health manpower (technical only)

Category			
B.1 Primary Health Care Unit (PHCU)			
-Community Health Worker (CHW) 1/PHCU - settled	9,113	2,922	6,191
-CHWs for nomads, 1/1000 pop.	2,112	575	1,537
-CHWs one/dispensary	2,778	887	1,991
B.2 Dispensary			
-Medical Assistants (MA)	4,098	1,242	2,856
-Health Visitors (HV)	732	213	519
-Assist. Health Visitors (AHV)	2,778	120	2,658
-Sanitary Overseer (SO)	1,220	398	822
-Village Midwives (VMW)	9,113	4,678	4,435
B.3 Rural Health Center			
-Physicians (M.D.)	488	157	331
-Public Health Officers (PHO)	488	143	345

Source: Adapted from WHO/HRG-CRU. 5 "Country Resource Utilization Review."

TABLE III

PRIMARY HEALTH CARE WORKERS AND TRAINING INSTITUTIONS

Category	No. in Service	Training Institute	Duration of Training	Entry Requirements	No. graduated per year	No. graduated in last 5 yrs.	Projected No. of graduates in coming 6 yrs.
1. CHWs	2,841	36 Schools	9 mos.	Primary Education	820	2,841	3,400
2. Sanitary Overseers	293	2 Schools	1 yr.	Primary Education	50 + 19 Juba	127	400
3. A/SO	1,144	Inservice Training	3 mos.	--	--	--	--
4. Health Visitors	660	Two	2 yrs.	Nurse Midwives + 2 yrs. service	30 20 50 per year	250	300
5. A/Health Visitors	93	Two	1 yr.	Village Midwifery Certificate	18	93	200
6. Village Midwives	2,059	18 Schools	1 yr.	--	345	1,725	2,200
7. General MAs	1,236	6 Schools	2 yrs.	Primary Education Certificate	100	500	700
8. Officers and Inspectors (Public Health)	209	Institute of Public Hygiene	3 yrs.	S.S.S.C.	30	88	180

Source: Data adapted from WHO-EM/PHC/15.

3. Job Descriptions of Categories of Health Personnel:

Job descriptions for the basic categories of health workers are found in the planning documents for the PHCP (the "Green Book" and the "Brown Book"); however, it was observed that:

- job descriptions do not fit the reality of the field situation in many cases
- they are not used as a guide for supervisory personnel
- their utilization as planning documents in establishing training curricula needs review and updating
- they do not reflect the very real differences of the health needs of the several provinces and regions.

4. Tasks performed by PHC workers:

CHWs and NCHWs are presently involved in providing simple curative services to the rural populations for whom they are responsible. Such services include diagnosing medical conditions, prescribing and administering medications and making referrals of patients to the next higher echelon of health delivery. Promotive and preventive services relating to the improvement of environmental sanitation, MCH, child-spacing, immunizations and health education are conspicuous by their absence. CHWs do not appear actively to be organizing community members for self-help health-promotive activities.

VMWs are involved in the "M" of MCH work but not the "C"; they help in maternity care but not in child health care or child-spacing programs.

5. Training Programs:

From the observations made by members of the field teams, discussions with experts knowledgeable about health training programs and by study of documents, the following is suggested:

a) The selection of candidates for training as health workers in the different categories is based upon criteria established by the MOH and involving age, educational level achieved and community support for the nominee. The selection process, itself, appears to be reasonable and functions adequately, with the main exception of the unrealistically high academic requirements for NCHWs. Field teams reported that this problem is already recognized by

provincial authorities who already are being more flexible in the application of this criterion in the selection process.

b) The curricula in training institutions emphasizes theory and didactic work over field practice and experience in working out community health problems under guided supervision at village level. Practical work is essentially limited to work in dispensaries and hospitals, deals with problems of curative medicine and is guided by clinically-oriented MAs as instructors. During the period of training, the CHW encounters little in the way of demonstrations and experiences in community-based promotive and preventive practices.

c) The duration of CHW and NCHW training is of the order of 12 months in the North and 9 months in the Southern Region.

d) Tutors involved in training CHWs are MAs selected for their prior experience in rendering a curative service in a rural setting. The training that MAs were given in preparation for them to take over their new teaching roles did involve discussions about PHC and the PHC approach.. But these efforts, in the opinion of the ET, were not adequate to the needs of the situation and were almost enitrely lacking in community-based field experiences involving community participation and involvement in improved health practices.

Part-time instructors are brought in from fields that are not limited to the curative aspects, such as MCH experts and ASOs, but their inputs are not yet sufficient to counterbalance the emphasis given to the curative aspects. Experienced HVs and VMWs do not participate as instructors during CHW's training although their actual involvement in MCH, homevisiting, etc. is greater than that of the MAs.

Tutors are not involved in supervisory activities following the graduation of CHW trainees. Not only does this deprive graduates of continuing educational opportunities, but it means that tutors miss the chance to utilize a potential feedback loop through which real-life village situations can be fed back to the tutorial staff.

e) The teaching-learning process emphasizes theory and

the didactic approach rather than "hands-on" practical work in health promotion and disease prevention within the community itself.

f) Teaching materials and audio-visual aids appear adequate although no tools or equipment for village sanitation activities were in evidence. A teaching manual, in Arabic, is available for use in the Northern Regions. A draft manual was reported to be ready for publication in the English language for use in the Southern Region but copies were not seen by the evaluation teams.

g) All CHW training institutions in three provinces visited were open and operating at the time of the evaluation team's visit. In the South, the CHW Training School at Dolieb Hill, UNP, has been closed since 1980 because funds for the food account for CHW students have not yet been received.

h) The training of VMWs appears to be adequate in content and duration in the institutions visited. Little emphasis appears to be given to topics of child care and child spacing.

The selection of potential VMW trainees is made by the community. Upon completion of their training, the community oversees the administrative and non-technical aspects of their work.

Recruitment and selection of candidates for MA training is satisfactory. Duration of MA training is adequate. Curriculum content stresses curative medicine and laboratory work appropriate to their future roles as dispensary and hospital workers. However, since the role of the MA in the PHCP should also involve teaching and supervision of CHWs in the PHCUs, MA training appears deficient in community-based aspects of disease prevention and health promotion. Teaching materials and manuals in the Arabic language are lacking.

Four of six training institutions for MAs are located in the northern regions of Sudan; some trainees from the South attend a school in North Kordofan. Additional training centers might be considered. No schools or training facilities for SOs, PHOs or HVs were located in the four provinces to which the field teams made visits. All training programs are based upon the Western concept of medicine with little or no references to the patterns of local traditional medicine widely

practiced in the Sudan.

6. Continuing Educational Activities:

   a) Overseas educational opportunities for senior officials of 2-3 months duration to an academic year are provided in subjects such as health planning.

   b) Training courses for other levels of health workers are held in Khartoum, covering subjects such as management, MCH/Child Spacing and vehicle maintenance.

   c) Local training at Provincial level is offered to:

      1) MAs, VMWs, HVs and physicians, orienting them to PHC concepts and practices.

      2) CHWs in the form of refresher courses about health problems with emphasis on medical conditions, argicultural techniques, literacy training and veterinary medicine.

   At the provincial/regional level, refresher and orientation courses appear to be organized and conducted more as a result of interest and funding of donor agencies in the health field, than as part of a systematic, long-term training plan developed at provincial level.

7. Career Structure:

   CHWs, and to a lesser extent, MAs and VMWs, have no formal career structure with opportunities for upward advancement. This deficiency in personnel management practices is emerging as a problem of concern to provincial health authorities.

B. Management

1. The existing structure of health service is still in the formative stages of decentralization. The evolving new structures differ from one province to another. This situation is reflected in the managerial processes creating the following constraints:

   a) Organograms differ from one province to another.

   b) Existing lines of authority and decision making are not clear.

c) Organizational objectives and goals at all levels are non-existent or not clearly defined.

d) The mode of operation is crisis-oriented rather than rational decision making based on short- and long-term planning.

e) Similar jobs and functions are performed by personnel with different job titles with a definite overlap in function.

2. The "complex" structure whereby one dispensary supervises 4-5 PHCUs is not working as planned, nor is the concept of each PHCU serving 4,000 population. Supervision and support for the CHW and PHCU is usually from the regional level and in places from the district level. In none of the provinces visited was the "complex system" observed to be operational nor were medical assistants involved in supervision of CHWs. However, in some of the provinces in the South, it is reported that MAs provide supervision to CHWs through functioning PHC complexes.

   Supervision and support for the CHWs is facing difficulties.

3. PHC approach as distinguished from the PHC program is not functioning yet. The vertical structure among all health programs persists. This vertical structure is reflected in the management system and in the delivery of serivces causing a duplication of activities, which increases expenses and decreases efficiency and effectiveness.

   Integration of EPI and malaria in PHC activities was not found to be a real issue in fixed situations since neither is available at the PHCU in the provinces visited. The ET was informed, however, that the Department of EPI has already taken steps, with some assistance from UNICEF, to integrate the two activities in the Nile, Gezira and White Nile provinces.

4. Health planning and decisions on health services allocations is transferred to the politically elected councils at the district and provincial levels. Councils are not sufficiently oriented to the concept of PHC.

   Members of the medical community do not oppose the PHC. Most physicians were not sufficiently orineted about the PHC approach.

Ministerial professional health personnel have to deal with community organizations more now than before decentralization and especially in the PHC delivery.

5. Most important is the fact that the decentralization process is at its most formative stage. There is general confusion about positions that have a place in the organizational chart, but people to fill them had not arrived yet. Under such conditions, it seems understandable that the managerial process is rather hard to identify. Notwithstanding, all the teams observed that the resource shortages are exacerbated by inadequate managerial capability.

6. Priority and Resource Allocation:

   a) Despite verbal enthusiasm encountered by all the teams about the PHC program, the priority given to this program through the allocation of resources can be said to be relatively low. From the budget at the provincial level it was difficult to determine how much is allocated to PHC as the budget is allocated by line items of "overtime," "drugs," "supplies."

   b) Manpower allocation was judged to be adequate, although its quality showed deficiencies.

      The Malakal team assessed that the priority attached to PHC was relatively low as evidence by the fact that the CHW school had been closed for two years because of lack of funds to buy food.

   c) All the teams observed that the supply of both transport and fuel for PHC purposes had been very limited. Information systems on which to base the allocation of resources to guide the management of the PHC program was non-existent in all the areas visited.

   d) The structure of the health service as it currently exists inhibits an integrated PHC system. The lack of priority alloted to the PHC program found in some areas, the overall low level of managerial capability and the severe scarcity of resources, all interact to reudce the effective resource allocation to the CHW.

7. Managerial responsiblities are carried out by MOs with insufficient managerial training. The result is that

those limited resources of equipment, drugs and whatever vehicles are available at the provincial and district level are not always allocated to reflect the importance of PHC.

Duplication of efforts from donor agencies was reported.

The information system that does exist is not being utilized to guide managerial decisions.

In the Southern Region, leprosy control, kalaazar, sleeping sickness, and onchocerciasis vector (OV) control programs should be integrated into the PHC program.

At the district level (if the district is sufficiently large) a planning unit of the regular council would be supervised by a community physician who acts as advisor.

More effective and efficient feedback and control mechanisms need to be established between the different councils and health personnel. Training in planning and management for personnel at the district and regional levels are needed.

Future Managerial Proposals: MOH/Province

The MOH recognizes that its organizational structure as it currently exists does not respond to the days' needs and socio-economic context.

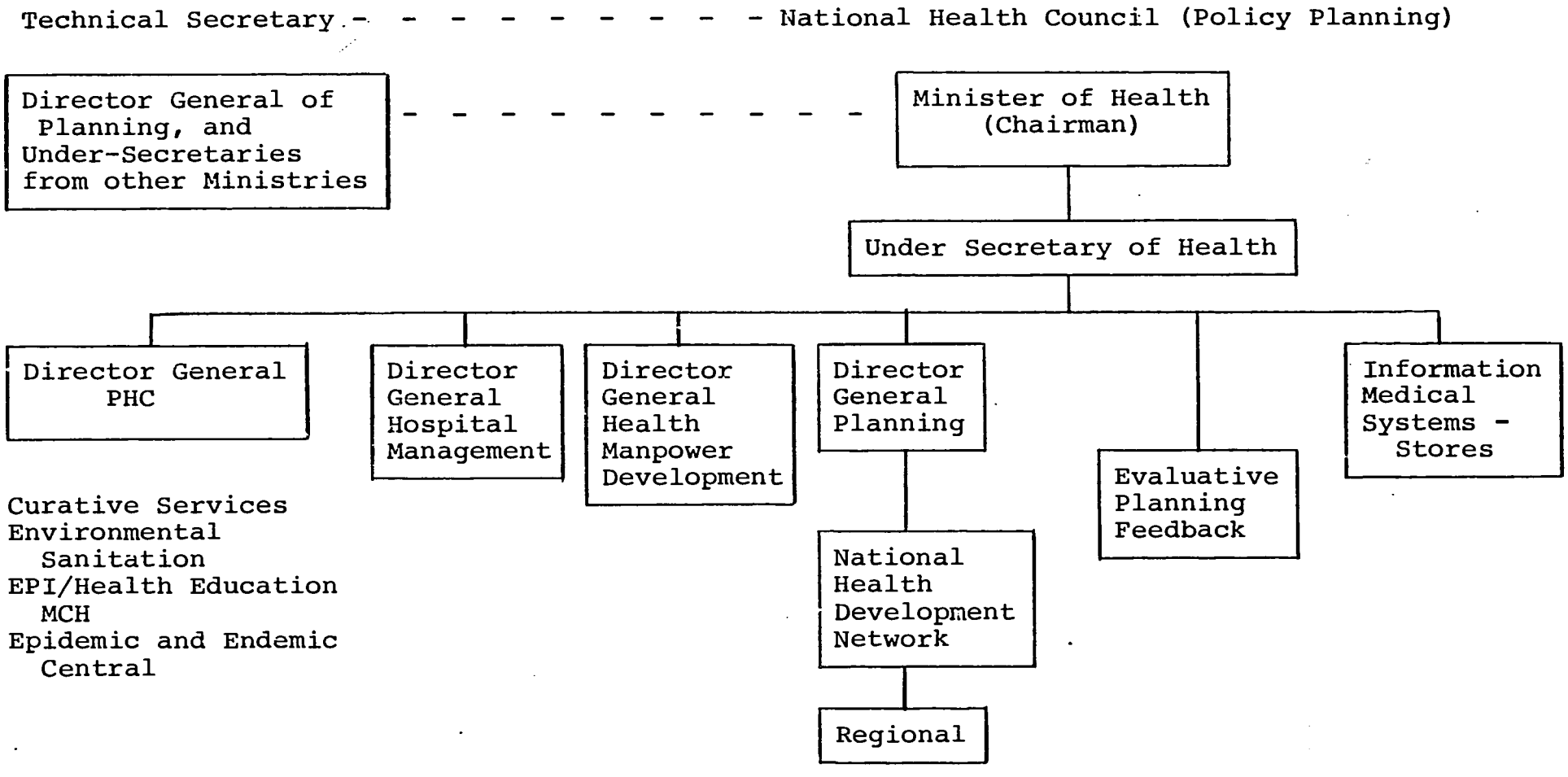
The managerial role of the MOH has become increasingly vague and unclear following the recent decentralization. There is no doubt that the MOH can have a very important role in coordination of overall plans in health care, in coordination of activities with other Ministries, in setting up regional objectives and goals and in providing feedback for activities at the regional levels.

During the period of this evaluation the MOH and its Directors met to formulate a more realistic and feasible re-organization at the Central Ministry. Table III shows this proposal. The coordinating organism is envisioned as being the National Health Development Network. It would be ideal if regional health delivery personnel as well as planners from fields affecting health and health delivery are represented here.

The relationship between Central, Regional and District is envisioned as being a solidification (with some adaptation) of the model currently implemented in the Eastern province. (See Appendix E.1.)

TABLE IV

PROPOSED ORGANIZATIONAL CHART FOR NATIONAL HEALTH DEVELOPMENT NETWORK



C. Logistics and Supplies

The PHCP calls for standard issues of equipment and instruments when PHCUs are first opened, and a regular supply of drugs thereafter. These standard lists and costs were published as appendices in the "Green Book" and the "Brown Book". Drugs for dispensaries were scheduled in a quantity sufficient for a 6 month period and for a PHCU, 2 months. For the Southern Region, the drug "kits" were to be purchased direct from suppliers, as made-up units, and for the North, the kits were to be assembled at the provincial level, from bulk supplies of the individual items. In both cases the CMS in Khartoum was to be the purchasing agency. Following this principle, UNICEF supplies sent in to support the PHCP have been made up as complete units and issued accordingly.

In the South, with the exception of a few areas in which non-government organizations (NGO) are working, all the requirements for sets of equipment and instruments for new PHCUs or dispensaries have come from UNICEF. In the north, UNICEF has met the needs of all new PHCUs and many of the dispensaries. MOH has made up any shortfall of equipment and instruments for new dispensaries. Some dispensaries and PHCUs, in areas of the North and South, have been, and still are, supported by funds provided by the Dutch Government.

In addition, UNICEF supplies one "kit" of drugs each year for all PHCUs in both the North and South. Each kit is to last three months. The quantity of "kits" supplied is based on the numbers of existing units and those projected to open in the coming year. For dispensaries one "kit" of drugs supplied by UNICEF is expected to last six months. The annual quantity of UNICEF-provided drug kits for the North and South depends on the availability of funds from UNICEF. In 1981 UNICEF supplied 62 kits for Northern dispensaries and 80 kits for Southern dispensaries.

Except for UNICEF supplies, there is no regular supply of drugs to either dispensaries or PHCUs. No attempt has been made by the CMS to obtain made-up kits for the South, or to relate issues of drugs for the Northern regions to the need to make up stardard "kits" for issue. There is, however, an allocation of funds at the provincial level to enable drugs to be purchased from the CMS for all units that are not defined as hospitals. Health units are supplied from provincial stores as are dispensaries attached to schools, police, prisons, and forestry stations. However, the quantity and cost of drugs required for all the PHCUs over, say, the period of one year, has apparently not been calculated by MOH.

CHWs and MAs all make an attempt to prepare their drug

orders relative to the need and hope that they will get something from the stores. What is actually issued to them from the provincial supply relates to what is available and this, in turn, is dependent on what has been sent from the CMS in Khartoum. Orders submitted to the CMS by provincial storekeepers are prepared on the basis of present stocks and past issues, but what is supplied will depend on what the CMS has in hand and, because of substitution, might well include items that should only go to hospitals. There will almost certainly be a shortage of the essential drugs.

In a report prepared by Mr. T. Szuba of WHO (April-May 1981) there was a schedule of essential drugs, with a breakdown of the suggested availability of the individual items for use in the five different levels of health care, one of which was PHC. There is no evidence that this has ever been followed.

The period required for the delivery of supplies from the CMS to the provincial stores will vary greatly, from a matter of weeks to several months. It is certain that goods for the South will take a very long time to reach their final destination. Much of the delay may be due to the slowness of the CMS. Equally important is that transhipment at Kosti can contribute to delays. Orders for the north go faster, largely because they are often hand carried by the storekeeper, and he then personally processes them through the CMS issue procedures. The Southern Region and three provinces from the north have permanent representatives in the CMS to assist in expediting orders. Issues from provincial stores are usually direct to the person requesting supplies and there is no evidence of delay if stocks are available. In the South, situated in Juba, is a separate PHCP store which handles UNICEF supplies for the programme. These arrive overland having come in through Mombasa.

UNICEF supplies are intended for units and dispensaries in all of the six provinces in the South and there are often delays in getting them out from Juba to stores in Wau, Malakel and Rumbek. The delays are caused by a number of factors, including vehicles not available or broken down, no fuel, roads closed, no funds to pay for river transport, etc. A recent delay for goods intended for Malakel was in excess of 13 months.

Goods, including drugs, that arrive from UNICEF, or from the CMS suppliers, are in good condition on arrival. But the CMS storage conditions are poor and there is often a failure to take account of the expiry dates and the need to operate the "first in, first out" principle. At the provincial level, the quality of the stores varies from poor to atrocious, with the one at Malakel frequently being flooded. All stores are dirty, littered with rubbish and contain a lot of out-dated stocks

which take up space.

There is no facility at provincial levels for maintaining equipment. Anything in need of repair would have to be sent to the CMS in Khartoum. There is no operational system of exchange or loan.

Standardization of equipment is not followed resulting in a variety of suppliers or donors sending goods from different manufacturers, rendering it impossible to keep a supply of spare parts for every make. For the PHCP there are some items that would never require repair, only replacement. Some items, issued as part of the original instrument or equipment sets, are in the category of "consumables", e.g., syringes, needles, sutures, catheters, thermometers, etc. There are no provisions for their automatic replacement and almost no stocks are held at provincial levels.

Vehicles

There are transport problems in every sector of the GOS and the PHCP is no exception. Because of the general shortage of vehicles, particularly the few that are roadworthy, there is evidence of those supplied for the PHCP being used for work unrelated to PHCP and for private use. Fuel is a constant problem, as are spare parts for vehicles. Adequate servicing is non-existent.

Without transport, supplies are often difficult to move and supervision generally is inadequate throughout the programme. However, particularly in the South, the supply of a fleet of lorries would do little to increase the flow of goods out of Juba. Other constraints, such as the fuel shortage, lack of spares and maintenance, road conditions, etc., would so affect the situation that the daily utilization factor would be low.

The whole question of transport is deserving of a special study. Transport by road is easily arranged with road haulage contractors. This should be studied, as it would appear to be much cheaper than having to make a capital outlay for a new vehicle. In any case, the actual number of journeys made in a year will be very few.

In the north the situation may be different. But unless the usage justifies the capital outlay, hiring or contracting as an alternative should be considered. Smaller type vehicles are no doubt essential to the supervisory visits that should be made from province headquarters to the units, but fuel shortages are a constraint. The control of vehicles of all types is sadly lacking and undoubtedly they are being misused. This might not

be so serious if it were not for the fact that misuse of a vehicle also means using the fuel that might otherwise be available for official inspections.

All vehicles must be more strictly controlled and log books must be kept for regular checking. To make this effective, an instruction from the highest level is required and if necessary, agencies that have donated vehicles for special purposes should be prepared to withdraw them on the evidence of misuse.

Much more use could be made of river transport. The route from Juba to Malakal is an example where the Nile Steamer runs on a regular schedule. The GOS owned shipping company will only accept cash from various ministries before taking their cargo. However, cash is rarely available and never on short notice.

Drug Supply

The main problem that is highlighted in all areas is the lack of a regular and balanced supply of drugs to the PHCUs. Supplies are spasmodic and, not infrequently, include items not authorized for use at PHCU levels. It is observed that, except when UNICEF make up "kits" of drugs are supplied, the CHW never has the items necessary to carry out adequately the curative side of this work, yet it is probably from this aspect that much of his credibility with the community is gained.

The original concept of supplying standard "kits" at regular intervals, was good and every effort should be made to implement this process. These standard issues can be varied in both content and quantity, relative to the availability of funds. It is thought to be more important to give out a regular supply of a known quantity, rather than risk a "feast or famine" situation, with variations in availability from unit to unit, depending largely on the proximity to the store or the influence with the storekeeper. Reference to the Wanandi/Probst Report of February-March 1981, makes it clear that there exists locally, ample capacity for the manufacture of tablets and ampoules to supply all of the needs of the PHCP.

The present standard list of drugs to be supplied by UNICEF for use in the north is eight drugs, some of which are provided in different forms (e.g., tablets and syrups) making a total of 12 distinct items. If this is accepted as a sufficient basic issue, then almost certainly all could be manufactured locally. No study has been made of the question of making up drug "kits" but it is likely that the local drug manufacturers would undertake this. In the meantime, UNICEF would be prepared to supply additional kits under reimbursable procurement arrangements. Enquiries could also be made of non-profit making foundations

that are supplying drugs to developing countries. They exist in the U.K., Holland and West Germany. The one in Holland will pack drugs in "kits".

Apart from giving a regular and balanced supply of drugs, the "kits" are easy to handle and reduce stockkeeping to a very basic function. Additonally, if it is known that a unit was given a "kit" to cover a 3 month period, an inspection of the treatment register can reasonably indicate if they have been correctly used and if the amounts given out, in relation to stocks on hand, are in line. If the "kit" issue consists only of very basic items, likely to be required in all areas, they should be identical both for the North and the South.

At the provincial stores level, it will still be necessary to keep items outside of the standard lists, particularly in areas where there are problems which call for particular drugs. For these additional items, a simple ordering procedure can be set up requiring the approval of an MA. Any input of drugs from external sources should be requested as standard "kits". Calculating the known requirement of "kits" to meet regular issues for all units will be a simple matter, as will the costs. Subtracting the input of UNICEF and any other external source of supply, will indicate exactly what shortfall has to be met by MOH and will give a budget forecast for recurrent costs and for planned future expansion.

Equipment

So long as UNICEF continues to supply the standard kits of instruments and equipment for the opening of new units there is no problem of funding. The contents of the kits were revised this year with reductions in both content and quantity. Savings that were made were used, in the South, to procure expendable items. In the North, at the request of MOH, savings are being used for the purchase of additional kits.

Medical Stores Buildings

The first requirement in all medical stores is to take out the rubbish and dispose of outdated stocks. This should be followed by a cleaning process and a general arrangement of the stocks. Shelving is an essential item in any store and assistance should be sought to obtain funds for this purpose.

Any proposal to build new stores should take account of the total need for the area, and particularly if space is required for holding stocks in transit to other provinces. Kosti is an example of this. All new stores should be sites where there is no risk of flooding.

The size of any new store, specifications for the building, internal layout, equipment required, etc., will depend on a number of factors and will have to relate to the present requirement, forecast of future needs and funds available. It is likely to be better to build one or two adequate stores, rather than a number of small units which are insufficient to meet the need for space, from the start.

Training of Stores Staff

The training of medical stores staff who are employed as storekeepers at the provincial level cannot be taken in isolation. The promotional opportunities in government service are common to all in the same cadre and transfers do frequently take place. Training courses usually lead on to the issue of a certificate and this becomes a requirement in the promotion race. Without such certificates, a training course would not be acceptable.

The CMS does train storekeepers with a course lasting 18 months. But as has been pointed out in recent reports, this achieves little beyond passing on the existing poor methods.

In the PHC store in Juba, reorganization of the system is taking place and, by short periods of in-service training, provincial storekeepers in the Southern Region will be instructed and then expected to organize their own stores. This answers a local need, but for the country as a whole, there is room for a study of storekeeper training so that the standard may be raised at all levels.

D. Health Information System

The Health Information System (HIS) of the PHCP is a system developed to collect and report data that can be used by CHWs, MAs and other health personnel in the reporting, planning, evaluation and distribution of health services to the population to which they are responsible. The HIS also collects data that are to be used to monitor disease patterns and set priorities for inputs and services.

All units are expected to collect and report information on the following:

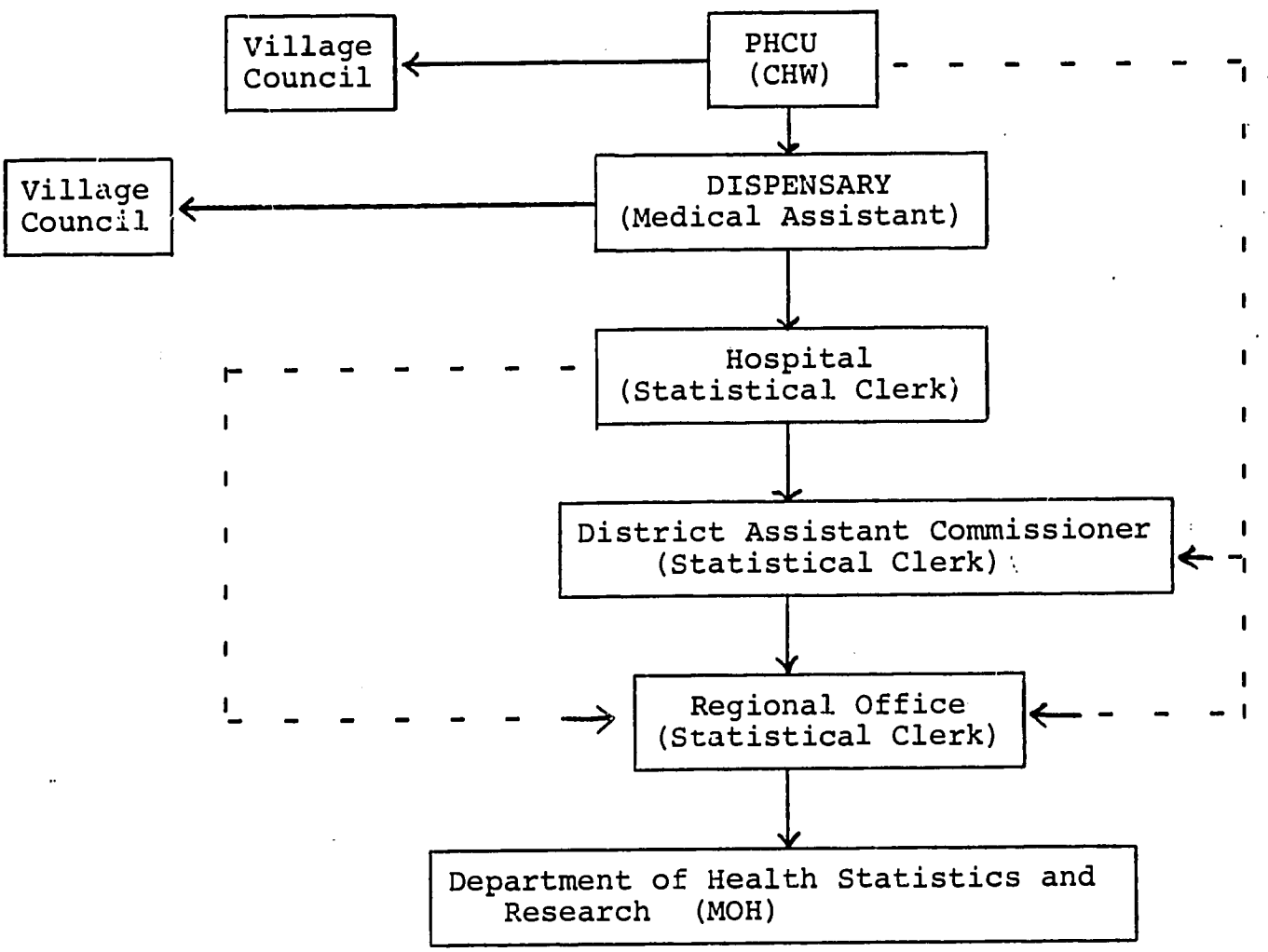
1. Curative (outpatient) services
2. Preventative and promotive activities
3. Vital Statistics in the community

Units are expected to collect and record the information in registers and to make summarized monthly reports to their village

leaders and supervisors or other designated persons.

The suggested flow of the data reports is given in the following diagram, Figure 3, although, modifications are permitted based on the local situation.

FIGURE 3. Flow of HIS Reports



- - - - -- Represents alternative for data flow

The original forms to be used in the collection and reporting of information were developed by the MOH in cooperation with WHO. Because of the cost involved in printing the forms and the need for a unified system throughout the Sudan it was felt that further testing was needed before institutionalizing the system.

With the assistance of a USAID-provided technician, the forms were retested and a workshop was held in which to present the results and give recommendations for a countrywide system. Users from all departments in the MOH along with representatives from the Southern Region participated in the workshop. A unified system was agreed upon and USAID and the MOH agreed to print a 2-year supply of the forms in both English and Arabic. This will supply all units throughout the Sudan. Copies of the registers and reporting forms are included in Appendix F.

The system in existence at the time of the evaluation is the one that was originally devised and is documented in the CHW manual. An implementation plan has been developed for the system that resulted from the test and workshop. This plan calls for the forms to be printed, distributed and all health workers trained by early 1983.

Details of the HIS findings in the four provinces visited by the ET will be found in the respective field team reports. Tables V, VI, and VII show the types of units visited during the field trips and personnel interviewed. These tables also present a summary of its findings.

TABLE V. HEALTH INFORMATION SYSTEM

Number of Units Visited, Type and Number of Persons Interviewed by Province.

	Units Visited		Number and Type of Person Interviewed			
	PHCUs	Dispensaries	Hospital Clerks	Dist. Clerks	Prov. Clerks	Managers
Upper Nile	2	2	1	1	0	0
Kassala	7	2	1	3	1	3*
Kordofan	3	2	1	0	1	2
Bahr El Ghazal	4	2	1	0	2	0
Total	16	8	4	4	4	5

Two District Health Commissioners and 1 Provincial Health Commissioner

TABLE VI. HEALTH INFORMATION SYSTEM

Number of Units with Data Registers by Type of Register and Unit, by Province.

Province and Type of Unit	Type of Data Register			
	Outpatient	Preventative and Promotive	Birth	Death
Upper Nile	4	0	1	0
PHCUs	2	---	1	---
Disp.	2	---	---	---
Kassala	9	0	5	1
PHCUs	7	0	3	0
Disp.	2	0	2	1
Kordofan	5	0	3	1
PHCUs	3	0	1	0
Disp.	2	0	2	1
Bahr El Ghazel	6	0	6	5
PHCUs	4	0	4	3
Disp.	2	0	2	2
Total	24	0	15	7
PHCUs	16	0	9	3
Disp.	8	0	6	4

TABLE VII. HEALTH INFORMATION SYSTEM

Number of Units Completing and Sending Monthly Reports by Province

	Completing	Sending
Upper Nile	2	2
Kassala	9	9
Kordofan	5	5
Bahr El Ghazal	5	4
Total	21	20

E. Recurrent Costs of the Primary Health Care Programme (PHCP) in the North

In 1976, the annual recurrent costs of a fully implemented Primary Health Care Programme (PHCP) in the North were projected to be as follows: (in 1976 prices) [1]:

Salaries	$ 1.942 million
Renovation of facilities	0.038
Drugs and supplies	3.026
Equipment and instruments	0.180
Information System	0.255
Transport	0.157
	5.598

These expenditures, it was estimated, would finance the operation of a network of units (dispensaries and Primary Health Care Units) sufficient to provide one unit for every 4,000 rural inhabitants and every 1,500 nomads.

Regarding the ability of the GOS to finance recurrent costs of the PHCP, this sum of $5.6 million should be compared with the government's total current (Chapters I and II) expenditures on health. In 1976/77, the current expenditures of the (Central) MOH and current expenditures on health in the twelve provinces of the North were budgeted at a total of about $25 million (still in 1976 prices [2]. Thus our costs of running the full-scale PHCP, not scheduled for attainment until 1984, would be only about 22 percent of the 1976/77 level of total current expenditures on health in the North. The general impression is of a programme which is relatively cheap when one considers the number of people served.

In the limited time available for the present evaluation of the PHCP, it has not been possible to measure accurately the costs of the program as actually implemented [3]. It is very unlikely

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[1] Democratic Republic of the Sudan, Primary Health Care Programme: Eastern, Northern, Central and Western Regions of the Sudan, 1977/78 - 1983/84 (Khartoum, 1976), p. 123 ("The Brown Book").

[2] Ibid., p. 33.

[3] One reason why programme costs are difficult to measure is that the government's budgets and other financial reports are organized on a line-item basis (showing expenditures on particular types of input) rather than according to functional categories (e.g. PHCP, rural hospitals, urban hospitals, disease control...). In the interests of rational budgeting, a reorganization of financial information along functional lines should be considered.

however, that the actual recurrent costs of the PHCP in 1982 amount to much more than 22 percent of total current health expenditures in the North. In 1982, as in 1976, health expenditures continue to be dominated by the costs of running the public hospitals.

Despite the relative modesty of PHCP costs, it is clear that there are some types of expenditures which are particularly difficult to finance in the existing economic situation in Sudan. These are expenditures in the form of foreign exchange. Imported commodities are difficult and expensive to obtain, in view of the country's balance-of-payments situation. In the case of the PHCP, the ET was repeatedly told that shortages of two imported commodities in particular, drugs and petrol, seriously hampered the operation of the program. It is therefore important to consider procedures which will economize on these two inputs but which will not involve significant reductions in the programme's effectiveness. Some suggestions along these lines are offered below.

Economizing on Drugs:

1. One recommendation urged elsewhere in this report is that the activities of PHCUs and dispensaries should be more preventive and less curative, relatively speaking. It should be noted that this change of emphasis can also be supported from the standpoint of saving on foreign exchange, since curative activities tend to depend significantly on imported drugs, whereas a wide range of preventive activities use little or no imported supplies (latrine construction, health education, pest control...).

2. The training of MAs and CHWs should include use of traditional herbal remedies which have proven to be safe and effective, and supplies of these remedies should be made available to dispensaries and PHCUs.

3. The orders for imported drugs which are placed by the CMS (and hence the array of drugs eventually reaching the peripheral units) should be regularly reviewed in the light of changing prices. It is important that the limited amount of foreign exchange available for drugs be spent on the items with the greatest effectiveness (in terms of contributing to health) in relation to their cost. In view of the malarial conditions frequently reported to the ET, particular attention should be given to the case for spending more of the available foreign exchange on chloroquine.

Economizing on Petrol:

1. A main justification for the operation of vehicles by the PHCP has been the need for supervisors to travel to the peripheral units, where the CHWs in particular are otherwise working in isolation. A possible saving on petrol costs in this case would be to carry out part of the supervisory function not in the peripheral units themselves but in the headquarters to which the CHWs already travel regularly (usually by public transportation). It appears that in many places, CHWS visit their district or regional center every month or two, in order to collect salaries and drug supplies. These visits could be coordinated so as to permit district supervisors to hold group sessions with CHWs which would provide a means of control and communication.

2. On the acquisition of new vehicles, major attention should be given to fuel consumption. In some cases, motorcycles may be found adequate, particularly for supervisory purposes. Bilateral donors should not insist on supplying their own nationally manufactured vehicles in cases where vehicles manufactured elsewhere, sufficiently robust for Sudanese conditions, use significantly less petrol.

Recurrent Costs (RC) of the PHCP to the Southern Region

A report prepared by the Regional MOH and Social Welfare (RMOHSW) and African Medical and Research Foundation (AMREF) in 1980, estimated the recurrent costs of the PHCP, inclusive of expatriot assistance, as follows [4]:

	Unit RC (LS)	Total RC (LS)
92 modern PHCUs	2,444	224,848
165 Tukul PHCUs	1,479	244,035
36 New Dispensaries	5,415	194,940
29 Renovated Dispensaries	5,415	157,035
4 Renovated CHWTS	32,140	8,560

[4] Janovsky, K., "Cost and Financing of Primary Health Care, Southern Sudan Primary Health Care Programme," AMREF, 1980.

	Unit RC (LS)	Total RC (LS)
6 Provincial Offices	7,636	45,816
1 Regional Office	45,151	45,151
TOTAL		920,385

This figure is lower than the LS 1,349,800 figures projected in the "Green Book" plan for 1979/80. This is principally because construction did not keep pace with that plan and because the quantity of drugs to be given to dispensaries and PHCUs has been drastically decreased.

In 1979/80, the approved central (Chapter I - Salaries) and regional (Chapter II - Services) budgets for the PHCP in the South totalled LS 1,185,497, an amount more than adequate to cover the recurrent costs estimated by the RMOHSW/AMREF report. However, only LS 780,340 (66 percent of the total approved) was actually released. Thus, if the AMREF estimate is correct, the GOS had a shortfall of LS 140,045 (or 15 percent of the total estimated) which it could not cover.

Several other costs which were underestimated (e.g. transport) in this RMOHSW/AMREF report or not included in the estimated recurrent cost figure above (e.g. NGO assistance for transport or drugs) would increase the shortfall of government revenues with respect to the PHCP. The observations that UNICEF and NGOs provide all of the drugs for the PHCP in the Southern Region and that AMREF currently services all of the RMOHSW/PHCP vehicles (but not provincial vehicles) financed in the AID project are indications of the shortages of government revenues to support the PHCP in the South.

In the light of the shortfall of government revenues relative to estimated and actual expenditures, several points with respect to reducing costs, increasing efficiency of the resources utilized and increasing revenues for PHCP merit further consideration and study. All of the points raised earlier with respect to economizing on the costs of the PHCP in the North, are relevant for the South.

Additional Comments on Reducing Costs

1. Economizing on Drugs

   a) Better storage of drug supplies at all levels of the PHCP should be encouraged. Importation of drugs in packaging suitable for Sudan's harsh environment is recommended.

b) Improvement of the inventory system would be expected to move older stocks out of the store first (reducing drug loss) as well as improving the timeliness of purchasing additional supplies.

c) Improving the productivity and standards of the Sudanese pharmaceutical companies, particularly with respect to essential drugs for the Sudan.

2. Economizing on Petrol

The routes of vehicles on supervisory visits should be reviewed to determine if rearrangement of schedules allow for fewer miles to be travelled. Further, measures to curtial the use of vehicles for private purpose should be instituted.

3. Economizing on Building Maintenance

Throughout the Sudan, villages are demonstrating their interest in improving their health by building PHCUs out of local materials. The building of PHCUs by NGOs or with bilateral assistance should be discouraged. Further, foreign assistance for construction in the South should be targeted to renovating existing structures, using Sudanese materials when possible. For example, instead of building new training facilities specifically for PHCP personnel, the facilities might consist of renovated district or provincial hospital or school facilities, many of which have not been repaired since the 17 year war.

Appropriateness of the PHCP Efficiency in the Health Sector

Officials in the GOS and RMOHSW/PHCP should meet to discuss and prioritize the health problems of the population in the South and by what means (preventive or curative) these can be addressed to maximize the availability of services without duplication. The programs which are felt to have jurisdiction over these activities should be reviewed and a determination should be made of the extra-sectoral groups that also have programs which impact on health (e.g. agriculture and education).

Increase Revenues for the PHCP

There are three sources of revenue to consider: (1) the various levels of the GOS, (2) the individual citizens of Sudan, and (3) multilateral and bilateral, and NGOs.

1. Government

It is outside the scope of this evaluation to determine if the central or other levels of government are currently maximizing the collection of revenues which are or could be available to them. This is a particularly difficult question to consider since the government is undergoing a major re-organization as a consequence of the Decentralization Act of 1981. One point worth considering as this decentralization takes place, is how adjustments will be made for the fact that some areas will be better able to generate revenues and foreign exchange than other areas.

2. Individuals

Experimentation with voluntary contribution boxes at rural health facilities does not seem to have succeeded. As an alternative, individuals might be required to contribute in cash or in kind for the support of PHCUs and dispensaries. This may not be possible since all PHCP drugs in the South are donated by UNICEF or NGOs. However, in the South, if the objective were to fully recoup the cost of drugs utilized, exclusive of transport, the following analysis might be useful to determine a price for the drugs. (It is intended to be illustrative only and some better information on utilization, as well as transportation or other costs to be covered should be collected and utilized).

- Value of UNICEF PHCU drugs (3 mo) = $ 250.58
  x 4 = $1,002.32/yr or LS 353/yr

  15 - 20 visits to PHCU/day x
  15 - 20 working days/mo x
  12 months/yr =$27,000-4,800 visits to PHCU/yr

  Average estimated cost of drugs per PHCU visit = LS 0.250-0.500/visit

- Value of UNICEF dispensary drugs (6 mo) = $ 801.57
  x 2 = $1,603.14/yr or LS 2,164.24/yr

  80 - 100 visits to PHCU/day x
  15 - 20 working days/mo x
  12 mo/yr =14,400-24,000 visits to PHCU/yr

  Average estimated cost of drugs per dispensary visit =LS 0.100 - 0.150/visit

Although the average cost of drugs at dispensaries and PHCUs ranges from LS 0.100 to 0.500 these figures must be considered in light of the fact that the World Bank estimate of per capita income in the South in 1980 is $150 or LS 200 per year. A better determination of the burden which "fees" would place on households could be obtained by adding a question about the cost of care received to the existing questionnaire for the follow-up studies of the Social Monitoring Survey in the South.

Table VIII. INTERNATIONAL ASSISTANCE (TO PHC) COMMITTED UP TO 1980-81

SOURCE	AMOUNT in US $$	DETAILS	REMARKS	BALANCE UNUSED
WHO	1,550,000	- 13 Toyota minibuses for CHW schools - refrigerators and stationary - printing of 5,000 copies CHWs training manual and technical assistance	78/79 Assistance Received	----
UNICEF	750,000 Special assistance 600,000 Regular budget 500,000	- supplies and technical assistance annual budget - programme for 1977/78 to cover: - 6 trucks for transport of drugs - equipment for 34 dispensaries and 230 PHCUs - equipment for immunization - reorientation courses - 12 land rovers for supervision - equipment and instruments for 700 PHCUs - instruments and equipment for training	78/79 Received Ordered 1980	----
INDIA	10,000	- drugs	Received 1978	----
IRAN	100,000	- drugs	Received 1978	----
QATAR	115,000	- vehicles and spare parts	Received 1979	----
ACORD	105,000	- 50% of building costs of Nomad CHWs school - technical assistance training - purchase of one vehicle	Received 1978/1980	----
IDRC	53,000	- research in community participation	Received 1978	----

TABLE VIII. (continued)

SOURCE	AMOUNT in US $$	DETAILS	REMARKS	BALANCE UNUSED
PAKISTAN	10,000	- drugs	Received 1978	----
HOLLAND	2,000,000 (7,000,000 ED. FL.)	- construction of health facilities - equipment and instruments for PHCUs and dispensaries; water supply facilities for PHC	Received 1980-1982	600,000
USAID Northern Primary Health Care	5,863,000	- technical assistance - construction of PHCUs and dispensaries - trucks and equipment - drug supplies	Assistance started and continued 1979-1982	3,000,000
USAID Rural Health Support	30,000,000	- as above mainly to Western and Southern Sudan	Authorized for Spending over 5 years. Not started (1981-1985)	30,000,000
AFRICAN DEVELOPMENT BANK (Loan)	7,000,000	- construction of 25 dispensaries and 125 PHCUs - instruments and equipment for above	Agreement signed	7,000,000
WFP	612,000	- food stuffs	Assistance started 79	----
RED SEA TEAM F.R. GERMANY	115,000	- building PHC complex and equipment, and technical assistance (personnel)	Assistance started 79	50,000
CATHOLIC RELIEF SERV.	32,000	- orientation courses	Received 1979	----

TOTAL = US$ 49,479,000

TOTAL (approximately) 40,650,000

F. Coverage, Accessibility, Availability of PHCP and Community Participation

1. Coverage:

One indicator that could be used to identify progress made or improvements that have been effected in the PHCP of Sudan is "coverage", or the percentage of the population served by PHCP in 1982 as compared with the population served in 1976/77. The field results that address this question are of such "fragility" that firm conclusions of numbers of people served, either in 1977 or 1982, are impossible to determine. Discussions with regional health officials underscore the need for more solid information about the size of the rural population served by PHCUs and dispensaries and the population density within a distance that the CHW or MA can reasonably reach in his daily rounds. None of the regional offices had maps showing population location or population density. Data were available as to facilities currently in place -- for example, North Kordofan, with a population in rural and semi-settled areas estimated at 1,114,960 (88 percent of the total population) has 20 health centers, 70 dispensaries, 139 dressing stations and 225 PHCUs. Upper Nile Province has 33 CHWs in PHCUs, 25 dressing stations, and 24 dispensaries serving an estimated rural population of 513,000. Bahr el Ghazal Province's rural population (67.5 percent of the total) has 54 PHCUs. Only one regional office had a map which showed the location of its health facilities.

Regional officials, pressed for estimates of the population served by each PHCU, must fall back upon the planning figure, established in 1976, of 4,000 people per CHW, to arrive at estimates of coverage. The weakness of this approach is revealed when CHWs are asked about the numbers of people living in the area of their responsibility: one NCHW was caring for 200 people in a semi-settled area, or 500 when his tribe was on the move. Other CHWs cited estimates in the 6,000-8,000 range. Numerical coverage must also be distinguished from effective coverage, which would be less as a result of shortages of medications, time spent away from their units to collect salaries and supplies, inadequacies of supervision and lack of transport to reach outlying communities.

Attempts to develop "informed judgements" about numerical coverage were made, using the figure of 4,000 arbitrarily as the multiplier factor. The results ranged from 13 percent of rural or semi-settled groups reached by CHWs (and 32 percent reached by PHCUs, dispensaries and dressing stations), in Upper Nile Province, to 25 percent in North Kordofan, and 41 percent in Bahr el Ghazal.

Revised MOH estimates of rural and nomadic populations served by PHCP are presently based upon a CHW/population ratio of 1/1,000 rather than 1/4,000 as in the original plan. Applying this ratio to the 75 percent of Sudan's total population (19,792,000) that lives in rural or nomadic areas, an estimated 19 percent of the target population is presently being served (by 2,800 CHWs and NCHWs). The Health Resources Group of the ET projected a need for an additional 6,191 PHCUs by 1990, plus 1,537 NCHWs.

It may be concluded that useful estimates of the percentages of rural populations served by PHCUs is not feasible at this time. Suggestions are made, under "Recommendations", that could, if implemented, strengthen the validity of estimates of coverage.

2. Acceptability and Availability

In general, the attitudes of village leaders toward the CHWs and the services provided by the PHCUs were positive. The community recognizes and values the services; CHWs and VMWs are well accepted and respected by the villagers they serve. Indeed, on occasion, even traditional healers were found to be referring patients to health units. Finally, the field teams were impressed by reports of the communities in unserved areas who were actively organizing themselves to request regional health authorities to locate PHCUs in their areas.

Another clear evidence of the respect accorded to the CHW and his role in working in and with the community is demonstrated by the large numbers of CHW candidates who come forward to seek training and to become village level health workers.

The chief barrier to availability of service is the factor of distance. It was observed that individuals may travel more than 16 kilometers or 10 miles (in the "Green" and "Brown" book projections) to receive medical attention at the PHCU. On the other hand, while no documentary evidence could be found, field observation suggests that the "outreach" from the PHCU to the periphery, is significantly less, with lack of transport and the requirement that CHWs stay close to their base of operations to see medical cases, cited as the chief reasons. No financial barriers to availability of service were noted. Health units are open on working days (six days weekly) and CHWs are available on a 24 hour/day call basis and also on Fridays, the Moslem Sabbath.

The services provided by CHWs in the four provinces visited were largely services of a curative nature. Sick patients were received, examined and treated, if within the competence of the CHW, or referrals were made to hospital or dispensary. One field team probed for estimates of morbidity and mortality reduction

and found that, over the course of four years, one CHW may well have prevented 7 deaths (pneumonia, bronchopneumonia, cerebral malaria and diptheria, all referred to hospital). One death from a renal calculus (sic) removal was claimed. One NCHW estimated that there were 15 deaths in his population before the PHCU was operating and only 10 deaths during the comparable time period subsequent to the PHCUs functioning.

No objective statistical evidence of reduced morbidity or mortality was found.

3. Community Participation

Active community participation in support of the PHCU was noted in all four provinces. Almost universally, communities were found to have participated in the recruitment and selection of candidates for the position of CHW, and, where a VMW was assigned, in the selection of that health worker.

Health officials and tutors engaged in the task of visiting communities to discuss the PHC program in the CHW recruitment process have stimulated discussions about local health problems and needs. Upon completion of training, CHWs were found to have assumed a leadership role in health -- and other community development matters.

PHCUs were constructed under a self-help program at community level -- sometimes by the contribution of funds by each household, sometimes by providing actual labor. Funds for upkeep and maintenance of some PHCUs were provided monthly, for example for the purchase of kerosene, wood or water.

Communities were reported to be supervising and giving administrative guidance to the CHW to supplement technical supervision rendered by higher-echelon health workers (MAs, PH Inspectors). There are formal and informal mechanisms for a dialogue between community members and the CHWs providing the service. For example, each community had a Village Development Committee, Sudan Socialist Union (SSU), and a parent-teachers association. CHWs were members of these groups. In Bahr el Ghazal Province, where some PHCUs were distant from the main road, members of the community assisted in carrying the drugs and supplies to the PHCUs and, in communities where the units were still under construction, community members provided alternate facilities for CHWs to carry out their work. It was also found (in Bahr el Ghazal Province) that when a new supply of drugs was received, the village leaders were informed; the CHW opened the new supply of drugs in the presence of the chief and village leaders for their inspection.

The findings of the four field teams are summarized below:

A. PHCUs Established with Community Self-Help, by Province, as Reported by Field Teams (Appendix E)

Kassala Province	230 PHCUs (79 percent of target) established between 1977-1982
Gadaref District	All PHCUs (and 80 percent of hospitals) established by the communities themselves
New Halfa District	29 of 34 PHCUs were self-help construction projects
Kassala District	100 percent (of 100) PHCUs were entirely the responsibility of the community (vis-a-vis construction)
North Kordofan Province	225 PHCUs, all reported to be of local ("tukel") construction; villagers helped by contributing labor for construction or through financial contribution (as, f.e., LS 300) In 2 of 3 PHCUs visited by ET, PHCU furniture was entirely provided by villagers
Upper Nile Province	33 PHCUs. Villagers reportedly reluctant to help with construction, although some individual chiefs have contributed substantially. Vale of locally-constructed tukel-PHCU is LS 50-120
Bahr el Ghazel Province	54 PHCUs in province. Of the 4 PHCUs visited by ET, all were built on self-help principle.

B. Communities Giving Support/Supervision to CHW; Leadership Role of CHW in Village Health Affairs -- by Province, as Reported by Field Teams (Appendix E)

Kassala Province

10 district executive councils in province:

1) Participate in planning local health services (with District Deputy Director of Health), by selecting villages for new PHCUs, developing budget proposals.

2) Support village nominations for CHW candidates village local councils.

3) Submit requests for PHCU.

4) Nominates candidates as CHW.

5) "Are supposed to help supervise the CHW."

North Kordofan Province

All community councils are reported by provincial authorities to participate in nominating/selecting village members for training as CHWs.

In 3 (of 3) PHCUs visited by ET, there was no evidence of CHWs involved in health promotive activities and no community participation in health promotion, as sanitation, water, nutrition.

Upper Nile Province

Nominations for CHW made by village community with final selection by PHC Inspector and Principal of Training School.

Bahr el Ghazal Province

In 100 percent of villages visited, community members are involved in planning the PHC system, selecting CHW candidates for training, playing a role in CHW supervision.

CHWs are members of Village Development Committees, SSUs and/or Parent-Teachers Associations.

Villagers and chiefs present when CHW receives/opens new supply of drugs.

APPENDIX A

TERMS OF REFERENCE OF JOINT EVALUATION TEAM

AND

OUTLINE OF EVALUATION PLAN

Cooperative MOH, UNICEP, USAID, and WHO EVALUATION: Implementation of Primary Health Care in Selected Provinces of Sudan

March 1982

This plan was developed by a working group, meeting 14-18 March in Khartoum. The following participated: Dr. Mushah, Dr. A. Biely, Mr. H. Davis, Mr. B. Wisniewski, Mrs. Katherine Beckley, Mr. T. Carter, Dr. Balla, Dr. Mary A. Micka, Dr. Deria and Dr. Katz.

I. Objectives

The evaluation is being conducted to provide the Ministry of Health Sudan, UNICEF, USAID, and WHO with information on progress being made to provide health care to the population of Sudan, especially in rural areas of five provinces, by means expected to provide the basis for decision making including future planning of strategies to be used to attain the overall goal of health for all to which the government of Sudan is committed. More specifically the evaluation should permit informed judgments to be made as to:

1) the extent to which the objectives and expected outcomes of USAID supported projects 650-0011 and 650-0019 are being attained;

2) the progress being made in achieving the objectives identified in the National Health Plan, especially, improved coverage and accessibility of health services to the rural population;

3) the extent to which the PHC approach is being integrated into health system especially the degree to which the management for national health development functions to support the strategies employed;

4) the extent to which resources are employed effectively;

5) the conditions which are or have facilitating and constraining implementation of the PHC approach in Sudan.

It is to be noted that while these objectives provide the basic orientation for the evaluation its primary focus is on activities of front-line health workers in primary health care units in 5 provinces only. Thus, the information to be attained and hence the report will necessarily concern elements only of the health system or of national efforts to achieve health for all.

II. Indicators of Progress Made

The evaluation attempts to assess the extent of progress made or improvements that have been effected during a specified period, namely in the period 1976/7-1982. It is therefore appropriate to identify a number of indicators which can be used to identify the most important achievements.

The following is a list of such indicators for which information should be provided.

1) Population coverage by health services.

2) Accessibility and acceptability of health services provided.

3) Number of trained health workers providing health-care in rural areas and type of services provided.

4) Number of different health workers in training and quality of training program.

5) Activities of health personnel in promoting community action to promote health and prevent disease.

6) Morality rates especially of that part of the population at greatest risk.

7) Morbidity rate especially of certain specified diseases.

8) Community involvement in planning and implementation of health development actions.

9) Participation, support and involvement of all parts of the health system in promotiong PHC.

10) Appropriations of resource allocations to priority of PHC.

11) Appropriate infrastructure - managerial system in support of PHC.

12) Existence and utilization of information system.

13) Supply distribution system of drugs and other requirements.

Note: It may not be possible to obtain adequate information permitting the use of all indicators, especially since base-line data may not be available. However, these, and other indicators to be developed, provide a useful focus for data collection now and in the future.

III. Evaluation Questions

Using the objectives of the evaluation as a focus and the indicators as a frame of reference, it is possible to idenfity questions to which answers should be provided by data to be collected. Please note that additional evaluation questions are likely to be identified during the course of the evaluation project. The evaluation questions may be usefully classified as indicated below - but it should be noted that there is considerable overlap and information collected for one evaluation may serve also as information for others.

Accessibility, Coverage and Acceptability

1. How extensive is the coverage of the rural population in the 5 provinces by a Primary Health Care Unit?

2. What proportion of the population has 'real' access to an element of the Health Care system?

3. Is there a positive attitude to those responsible for health care and to the PHC units?

4. Are the services provided effective in - promoting health- preventing disease - cure of disease?

5. Is there any evidence that the services provided have had an impact on morbidity, mortality rates?

Health Personnel

6. How adequate is the number of health personnel actually working as frontline health workers?

7. Are the required services (job descriptions) appropriate, realistic, and, are they being met?

8. Are sufficient numbers being trained to meet identified requirements in future?

9. How effective appropriate, are the training programs in relation to job description or health care requirements?

10. Is there are effective training program for teachers of CHW workers and other categories of front-line health workers?

11. Is the process by which CHW are selected likely to maximize acceptability of individual by the community and his/her effective performance after training?

12. How appropriate is the deployment of health workers after training?

13. Is adequate supervision provided?

14. Is there a systematic attempt to provide continuing education to all health workers?

Community Participation

15. How effective has been the involvement of the community in
- planning the health care program
- administering the health care service and have appropriate mechanisms been established?

16. Have the communities taken action to improve their health status by, for example:
- participating in building of health center
- improving sanitation, water, nutrition
- promoting health education?

Managerial System for National Health Development

17. Is the PHC approach accepted as an integral part of the health care system?

18. Is the priority for PHC in rural areas translated into appropriate resource allocation?

19. Is there effective interaction between all elements of the system, e.g., an effective two-way referral system?

20. Is there adequate coordination between directorates at central level, regional-provincial, district levels?

21. Is there effective coordiation in planning and implementation of programs and projects between MOH Sudan, international agencies, and other agencies?

22. Is the managerial process conductive to rational decision making, maintenance of motivation, adequate job performance, and two-way communication?

Health Information System

23. Have the essential information requirements been determined?

24. Have appropriate mechanisms been planned and implemented to attain such information?

25. Is this information used effectively in planning, allocation of resources, training, etc.?

26. Is really accurate information being collected?

Logistics - Supplies

27. Has an appropriate mechanism been planned and put into operation to ensure that drugs and other supplies are ordered, obtained, and distributed efficiently?

IV. Data Collection

To answer the evaluation questions as much information as possible should be gathered from as many sources as time or other constraints will permit. It is important that this information is recorded and any judgment as to quality, that is a response to an evaluation question, be delayed till the information is analyzed. In other words, record observations, responses to the following questions without making premature judgment. Remember that the more information is gathered and from as many sources as possible, the more likely it is that the judgments made are valid.

For simplicity sake the type of information to be gathered is presented below in the form of questions for each category of evaluation questions. Also indicated are possible sources of the information. Once this is agreed upon it will then be necessary to develop detailed observations, interview guides or schedules.

Information Required	Source
A) Accessibility, Coverage and Acceptibility (eval. questions 1-5)	
1. How many PHC units exist, i.e., are functioning?	provincial records
2. What proportion of the population in the province is within the specified geographical distance of a PHC facility?	provincial records
3. Who utilizes the facility?	Interview H/personnel Interview members of community.
4. Who does not use the facility and why?	Interview members of community. Interview members of neighboring villages.

Information Required	Source
5. What is the attitude of the population to the PHC unit; positive, complaints, etc.?	Interview community leaders SSU, women's groups.
6. What services are provided by the PHC unit including all those concerned with promoting health, preventing disease, currative?	Records of H/personnel Observation Interview LHW and Interview Community
7. What evidence is there of impact: any change in patterns of illness any change in infant mortality any change in death during pregnancy and delivery?	Records province/local Interviews
B) Health Personnel (evaluation questions 6-14)	
1. What is the number of different categories of health personnel in the province?	Province records
2. Where are they working?	Province records/ maps
3. What training (qualifications) have they?	Province records
4. What is the ratio of personnel/ different categories to population?	Province records
5. Are there job descriptions for each category of personnel?	Province records
6. How were these job descriptions made?	Interview Central Provincial authorities
7. What tasks are performed actually by MA, VHW, CHW, NURSE, TBA?	Observation Interview health personnel community. Records
8. What resources (drugs, equipment, transport, etc.) are available to the H/worker?	Observation Interview
9. What support (supervision) is given and how often?	Interview Health worker Pro. authority
10. What is the quality of the tasks carried out, i.e., how appropriate are the actions performed?	Observation Interview/community

Information Required	Sources
11. How many MA's, WMS's, CHW's, Nurses, are being trained and where?	Records
12. How were trainees selected and by whom?	Interview Trainees H/personnel Provincial authorities
13. What is the content of training programs (curriculum)?	Document
14. How and by whom was it designed (planned), how were objectives derived?	Interview Central/provincial authorities
15. What are the actual learning experiences (teaching/learning process) provided in classrooms, field?	Observation Interview/teacher student
16. What are resources available, e.g., field practice, areas, classrooms, equipment?	Observation Interview
17. What teaching/learning materials, e.g., manuals are available and how were these developed?	Observation Interview/teacher student
18. How are students examined and in what? During course? At end of course?	Interview/teacher student, documents
19. How many teachers are there per 10 students?	Records
20. How were teachers selected, what are their qualifications and experiences?	Records Interview
21. How have teachers been trained for teaching, by whom, and where?	Records Interview/teachers prov. authorities
22. How are training programs evaluated?	Interview/teachers prov. authorities
23. How are teachers supervised?	Interview central authorities
24. What is cost of training of CHW, Nurse, VMW, MA?	Documentary analysis
25. Who decides how and where those who have completed training will work?	Interview provincial authorities

Information Required	Source
26. Is there a career structure and what possibility exists for advancement within services?	Interview provincial authorities
27. Does a continuing education (CME) program exist, how many participate?	Interview provincial auth. Documents
28. What is the content and process of these CME programs?	Documents Interviews
29. Who is responsible for planning and implementation of CME programs?	Interviews
C) Community Participation (evaluation question 15-16)	
1. What is the nature and process of community participation in: planning health care facilities establishing a PHC unit maintenance of PHC unit selection of CHW supervision of CHW	Interview Provincial authorities, community leaders, health personnel Observation Documents
2. What mechanism is being used for dialogue between community and health system?	Interview Documents
3. What development activities are being implemented and how are they supported?	Observation Interview/community
4. What is the attitude of community to health care provided?	Interview Community leaders Others
5. What are the health problems identified by community?	Interview Community leaders Others
6. Has an organization (committees) been established and how do they function? Is there a health committee?	Interview Community leaders Others

Information Required	Source
7. Is there any collaboration between those responsible in the community for other development action (education, agriculture, etc.) and health development and who is responsible for furthering such collaboration?	Interview Community leaders Others

D) Managerial System (evaluation questions 17-22)

1. To what extent is the concept of PHC understood and accepted at central level, at provincial level, in other elements of health system, e.g., hospitals?	Interview Central/prov. authorities, and health personnel, all levels
2. What is mechanism for translating policies into programs plans and their implementation at central and regional provincial levels?	Interview Documents
3. Do different directorates collaborate in planning and implementation?	Interview Documents
4. What is the mechanism for coordination between Central, regional, provincial district authorities in planning and implementation, and how does it work?	Interview Documents
5. How are resources allocated to different elements of the health system, and how is budget prepared?	Interview Documents
6. Have priorities been determined and what are they?	Interview Documents
7. Is a preferred system identified and how does it operate?	Interview Documents
8. What training (if any) have health personnel, at all levels, received in managerial processes?	Interview Documents
9. Is there any mechanism for coordinating efforts of those responsible for other developmental actions (e.g.	Interview Documents

Information Required	Sources
agriculture education), with health and how does it operate?	Interview Documents
10. What coordination mechanism exists between MOH and international, other agencies and how does it operate?	Interview national authorities international/other agencies
11. How and on what basis are external resources requested and used?	Interview National authorities International/other authorities
12. How is use of such external resources evaluated?	Interview National authorities International/other agencies
13. How are the costs to the national government of aid programs determined?	Interview National authorities
14. What communication channels exist between different levels of the health system and how does this operate?	Interview Observation Records Documents
15. What are the rewards (financial status other) for personnel responsible for management of health system, in comparison with other health personnel?	Interview Documents
E) Health Information System (evaluation questions 23-26)	
1. Have basic information requirements been determined and how was their determination made?	Interview Documents
2. Who determined requirements and is responsible for the system?	Interview
3. What information is collected actually and by whom?	Interview Observation Records Documents
4. How accurate is this information?	

Information Required	Sources
5. Have those responsible been trained?	Interview Documents
6. Is there supervision of information collection and how does this operate?	Interview Documents
7. How is the information collected and analyzed: - at district level - at provincial level - at regional level - at central level	Interview Observation
8. How is information reported and for what purposes is it used?	Interview
9. Are those collecting information provided with analysis made reports, etc. is there two-way communication?	Interview
F) Logistics and Supplies (evaluation question 27)	
1. How and by whom are requirements for essential drugs and supplies determined?	Interview Documents
2. How are priorities established?	Interview Documents
3. How are allocations determined?	Interview Documents
4. Who is responsible for and how is ordering done. Are there prescribed schedules?	Interview Documents
5. What is the delay between ordering and receipt of drug supplies?	Interview Documents
6. What is the quality of supplies at:	Observation Interview

Information Required	Sources
time of receipt in Sudan storage actual receipt at periphery?	
7. What facilities exist for storage, maintenance Have personnel been trained for this?	Observation Interview
8. How are front line health workers (PHC units) trained for ordering and receiving supplies?	Interview
9. What % of health system cost is allocated to drugs and other supplies?	Documents

G) Outcomes USAID Projects (evaluation question 28)

Note: the data collected in response to questions posed in sections A-F will permit establishment of how far projected outcomes have been achieved. In addition, however, information should be collected for:
Northern province: Outcomes 10 and 11 (Annex 2)
Southern province: Outcomes 4, 8, 9, 11 and 13 (Annex 2)

V. Data Collection Instruments

In order to complete the planning phase of the evaluation, it will be necessary to:

1) specify institutions (e.g. schools, health units, Ministry of Health office) which should be visited:

2) prepare detailed guidelines for those responsible for the collection of information. This will involve preparation of interview guides, observation schedules, including checklists and rating scales.

3) training team members in data collection. This might well involve some exercises such as role play. Most importantly, team members should agree on recording mechanism and sequence of actions.

The team might also want to determine a common policy on their role in providing feedback or communication during visits and interviews. It is worthwhile recalling that a visit by an outsider necessarily has effects, both positive and negative.

It would seem important to maximize the former and minimize the latter. This suggest also that the team should be ready to clearly communicate the objectives of the mission: namely, to indicate that they are trying to assist all concerned to improve health care.

VI. Analysis

Finally, a note on analysis. The evaluation plan envisages three phases. During phase one, the team will be concerned with data collection, i.e. collecting and recording information. In Phase Two the data collected will be collated in order to respond to the Evaluation questions. It is now that judgments will have to be made after all relevant information is carefully considered. Here also the reasons for, and constraints need to be considered. Phase three involves further refinement, a review of responses to evaluation questions leading to the application of indicator. The team should be ready then to report its findings and recommendations.

ANNEX 1 - EXPECTED ACHIEVEMENTS BY FEBRUARY, 1982

NORTHERN PRIMARY HEALTH CARE PROJECT, #650-0011

1. National data systems for PHCP has been approved by all regions concerned.
2. Vital statistics registration has increased by virtue of CHW participation.
3. Movement of medical supplies from Pt. Sudan to provinces has been increased.
4. Average length of time has decreased from the ordering of drugs at the provincial level to the delivery of drugs at the provincial level.
5. Three of the staff from Central Medical Stores (CMS) have completed observational training and have resumed jobs in CMS.
6. Two driver/mechanics per province and at MOH have completed training course in vehicle maintenance and have returned to jobs.
7. Fifteen phase I dispensaries have been constructed and provisioned.
8. Six hundred nomad CHW's have received appropriate equipment and instruments and a two month issue of drugs and supplies.
9. Contractor recommendations for future assistance have been submitted.
10. Health personnel (3,139) have completed orientation courses in 12 provinces.
11. CHW's (853) have completed continuing medical education courses.
12. Two participants have completed MPH/ equivalent degree and have returned to PHCP positions.
13. Six community health physicians have completed training course in health planning and have returned to positions in MOH.
14. Twenty seven senior medical assistants, CHW tutors and other appropriate staff have completed management courses.
15. Meeting was held for the exchange of information between MOH and non-governmental agencies on PHCP projects.
16. Quarterly newsletter has been distributed regularly.

ANNEX 2 - EXPECTED ACHIEVEMENTS BY FEBRUARY, 1982,

SOUTHERN PRIMARY HEALTH CARE PROJECT, #650-0019

1. Twenty CHW's will have been trained at Lirya and at Akot during FY 82.

2. CHW trainees during FY 82 received one week of clinical training in the dispensaries at Lirya and Akot.

3. During FY 82 five PHC units have been constructed by self-help in association with project activities.

4. Medical staff and CHW trainees have started participating in monthly PHC Complex meetings at Lirya and Akot.

5. Sanitary overseer curriculum is in the process of testing and revision.

6. Health personnel - 173 CHW's, 133 nurses, 44 sanitary overseers and 49 others - have completed refresher courses from October,1980 through January, 1982.

7. Three baseline surveys have been completed and have been accepted by RMOH. Plans have been outlined for one followup survey.

8. Training program has been established for storekeepers and assistant storekeepers.

9. Statistical training program has been established for statistical clerks, CHW's and medical assistants.

10. Thirty-four regional and provincial and clerical personnel have completed training programs.

11. CHW manuel has been printed and is in use.

12. PHCP reporting form has been accepted.

13. Plan has been developed for improving health information system.

14. Plan has been developed for improving drug and supply distribution system.

15. Plan has been developed for improving drug accountability system.

B

Schedule of Activities

Cooperative Evaluation Team
20 March - 10 April 1982

Sat., March 20, 1982		:Team assembles in Khartoum
Sun., March 21, 1982		:preparation - MOH Library
Mon., March 22		:orientation - MOH Library
Tues., March 23		:orientation - MOH Library
Wed., March 24	0630 meet MOH;0700	:Team departs to Kassala via land
	1630 meet Airport domestic terminal	:Team departs El Obeid via Air Sudan
	0615 meet airport; 0630 depart to plane	:Wau team departs to Juba via UNICEF
Thurs., March 25	0900 depart airport	:Wau team Juba to Wau via UNICEF
	0600 meet at AID office	:Malakal team departs via charter
Fri., March 26		:Holiday, North
Sat., March 27		:Field Work
Sun., March 28		:Holiday South
Mon., March 29		:Field Work
Tues., March 30		:Field Work
Wed., March 31	10:30-11:00 depart	:Wau team to Juba via UNICEF
Thurs., April 1	0700 depart	:Wau team Juba to Khartoum via UNICEF
Fri., April 2	1300 depart	:Malakal team to Kht via charter; team from El Obeid to Kht via Air Sudan
		:Kassala team returns to Kht via land
Sat., April 3	1030 Meet at MOH Library	
Sun., April 4		:Team assembles data and writes recommendations and draft report to be distributed Thursday morning.
Mon., April 5		
Tues., April 6		
Wed., April 7		
Thurs., April 8		
Fri., April 9		:Holiday
Sat., April 10		:Closing Conference

Appendix C

KEY PERSONNEL CONTACTED

Ministry of Health

H.E. Dr. Ali Mohamed Fadl, Minister of Health,

Dr. Ali Beily, Deputy Director General, Rural Health & PHCP

Dr. Abdul Rahman Kabbashi, Director General, Rural Health & PHCP

Dr. Kheiri, Director General, Health Statistics

Dr. Rahman El Rashid, Director General, Central Medical Stores

Dr. Omar El-Baghir, Director General, Planning

Dr. Mohammed El Mahdi Balla, Deputy Director, Department of Health Statistics and Research

Dr. Eisa Abu Bahr Mohamed, Malaria Division

North Kordofan

H.E. Mohammed Ahmed Hassa Giha, Minister of Public Services, Kordofan Region

Dr. Farrid, Director General for Health and Social Welfare, Kordofan Region

Dr. Taha Abdul el Hamid, Director for Curative Medicine, North Kordofan

Mr. El Hab Abbu Issa, Senior Tutor, CHW School

Dr. Ali Abdel Rathma, Director, MA School

Mrs. Monia Wadoe, Director VMW School

Upper Nile Provinces

H.E. Col. Peter Mobil Riak, Commissioner, UNP

Dr. Mathew Atem, Acting A/Commissioner

Dr. James, Medical Officer, Bentin Hospital

Mr. Pasquele Nyawelo, Provincial Medical Assistant, Malakal

Mr. Peter Awol Ajal, PHC Inspector, Malakal

Mr. Samuel Oyath, EPI Operations Officer, Malakal

Mr. Mathew Dan Guol, Principal Tutor, CHW Training School, Dolieb Hill

Bahr el Ghazal

H.E. Col. Alfred Deng Aluk, Provincial Commissioner

Commissioner of Bahr el Ghazal

Acting Executive Director

UNICEF Representative

German Leprosy Relief Association

PHC Liaison Officer

Kassala

H.E. Mohamed El Amin Hamad, Regional Minister of Public Services, Eastern Region

Dr. Amin El Haj-Abdel Rahman, Director for Health, Kassala Province

Dr. Nabel Aziz, Deputy Director for Gedarif District

Dr. Mohamed El Mamoon Abdel Galeel, Deputy Director for Health, New Halfa District

Other Personnel Contacted by Field Teams, by Category and Number

Category	North Kordofan	Upper Nile	Bahr el Ghazel	Kassala	Total
Village Leaders	12	5	11	39	67
CHWs, NCHWs	5	5	4	8	22
MAs	2	3	5	3	13
SOs, ASOs	2	1	2	3	8
VMWs	2	1	6	3	12
Dir., Rural Hosp.	1	--	--	--	1
Physicians	20	--	--	--	20
Storekeepers	4	1	1	3	9
TBAs; Traditional Healers	2	--	9	--	11
Statistical Clerks	1	2	3	3	9
HV	--	1	--	--	1
Accountant, Clerk	--	2	--	--	2
Inspectors (PH)(PHC)	--	--	2	--	2
Others	--	--	8	1	9
Tutors/Trainers	4	1	5	5	15

USAID/Khartoum

Dr. Mary Ann Micka, Chief, Health/Population Division

Mr. Gary Lienen, Public Health Advisor

Mr. Jerry Weaver, Social Sciences Analyst

Mr. Don Dembowski, Economist, Program Officer

Mr. Peter Kranstover, Economist, Project Officer

AID/Washington (17 March 1982)

Dr. James Shepperd, AID/W

David W. Dunlop, PPC/E/S

Terra Bethuue, AFR/Dr/HN

Alex Newton, AFR/DR/EAP

D. Mendelson, AFR/EA

Ron Sullivan, MSCI

Cathie Ekimoff, MSCI

Myrna Seidman, APHA

May Yacoob, Consultant

Danielle Grant, APHA

Michel Gerber, AMREF

Abbie Bloom, PPC, AID/W

John Wooton, AFR/EA

Susan Stout, DSC, Battelle

WHO (20 March 1982)

Dr. Fred Katz, Chief, Evaluation Section, WHO/Geneva

Institutions Visited by Field Teams, by Category and Number

Category	North Kordofan	Upper Nile	Bahr el Ghazal	Kas.ala	Total
Prov. Health HQ	1	1	1	1	4
PHCU	3	3	4	7	17
Dispensary	2	1	1	4	8
Training Schools	3	2	2	5	12
Medical Stores	1	1	--	3	5
Hospitals	2	--	--	1	3
Health Center	--	--	1	1	2
Primary School	--	--	--	1	1
EPI Unit	--	1	--	--	1
Dressing Stations	1	1	--	--	2
MCH Units	--	2	--	--	2

APPENDIX D

PRINCIPAL RESOURCE DOCUMENTS FOR JOINT WHO/ UNICEF/MOH/AID EVALUATION: IMPLEMENTATION OF PRIMARY HEALTH CARE IN FOUR SELECTED PROVINCES, SUDAN

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APPENDIX E (1)

REPORT OF THE FIELD TEAM TO

KASSALA PROVINCE

Submitted by:

Dr. May Yacoob, Team Leader
Dr. Helmy Barmawy
Mr. Hillard Davis
Dr. Mohammed Musbah
Mr. Bernard Wisniewski

Kassla Pro[illegible] the Eastern Region.

Places visited: Team spent three days in Gadarif district, two days in New Halfa district and three days in Kassala district. During this eight day period (one day return) the team saw the personnel and facilities as follows:

Key people met: Mr. Mohamed E. Amin Hamad Regional Minister of Public Services for Eastern Region; Dr. Amin El Haj-Abdel Rahman, Director for Health for Kassala Province; Dr. Nabel Aziz, Deputy Director for Gedarif District; Dr. Mohamed El Mamoon Abdel Galeel, Deputy Director for Health for New Walfa District.

Gadarif: Two PHCU, 1 dispensary, 1 midwife, training school, 1 CHW training center, the medical stores statistical office and the district hospital. Met with the following personnel: 2 CHW, 2 village midwives, 1 tutor midwife, & community leaders in the community at a reception and held general discussions. (Friends of the Sick and Association for Drug Raising Fund), 3 community leaders at village level, 1 female community member, stat. clerk, 1 storekeeper, 1 sanitary overseer, 1 asst. overseer.

Halfa: 1 village midwife, 1 dispensary with Sr. med. asst. 1 training center, a medical asst. and nurse, 1 PHCU where CHW was getting medications (team told) 9 village community leaders, 5 women village community members, 5 community members who use the dispensary, 2 stores, 1 dispensary, 1 for hospital, Bilharzia and malaria centers, stat. clerk.

Kassala: Two Nomad PHCU, 2 settled PHCU, 1 dispensary, 1 health center, 1 midwife training center, 1 CHW training center, 10 community members, 2 households, 1 primary school, 2 head masters of rural primary schools built by the community, Asst. Sanitary Inspector, Executive Council Officer, 2 storekeepers and stat. clerk.

Summary: The following categories of health facilities and personne;.

7 PHCU, 4 dispensaries, 8 CHW, 3 Village Midwives, 1 Nurse, 3 Sr. Medical Assts., 5 CHW tutors.

KASSALA GROUP

Community Organization and Participation

The regionalization system is based on a standard pattern of elected councils at various levels. The village community elects the members of the village local council. Government officials, including the CHW are members of that council. In the health field this council discusses the needs of the village, submits requests to establish PHCU (if they do not have any), nominates one or more candiates to select one of them to be trained as a CHW for their village. The village council also selects a woman from their community to be trained as a village midwife. Members are responsible for organizing participation to establish and maintain PHCU. They are supposed to help and supervise the CHW. Village council's activities are supervised and coordinated by the Local Executive Council. The government assigns distribution of sugar and other foodstuffs to the Village Council.

Each district is divided into a certain number of local executive councils. Gadaref has five such councils, New Halfa has two, and Kassala has three. Members of the local Executive Council are all elected. They act as one group in dealing with various discipline problems. As regards health, they participate in planning the services with the District Deputy Director of Health. This will include proposing the budget, selecting villages for new PHCU's, supporting village nominations for candidates of CHW and Midwives. Starting the next fiscal year, they will be implementing the health plan, spending the budget and paying the salaries for all health activities other than those of the hospitals.

At the provincial level there is the Province Executive Council whose members are elected by the people. This Council has different committees for different disciplines, one of which is the Health Committee. All members of the Health Committee are elected and they will invite the Regional Minister of Public Services for discussion of various issues and problems when needed.

Community Participation

It is fairly good in the whole Province of Kassala, but it has different forms in the three districts.

In Gadaref, rich and well-to-do people take care of all financial support needed in any aspect of health services. They pay for establishing and furnishing all PHCU's which they accept in the plan and also pay for maintenance of the older health facilities. They pay a considerable sum for hospitals also, e.g.

80% of hospitals in Gadaref were established and equipped through community participation, while only 20% have been constructed by the Government. This last year money for maintenance and repairs of the hospital was estimated to be LS 64,000, and the association of "Friends of the Sick" accepted to pay it all.

This association is a voluntary society whose members are well-to-do tradesmen, cultivators and top government officials. Another activity they do is participate in fund raising for purchase of drugs for all health facilities.

In New Halfa, which is mainly a new settlement area, the government took care of building the villages, houses and dispensaries for the new settlers. The older community is still living in traditional type villages and huts (Quotterial). Establishing PHCU's for this community is their own responsibility. The agricultural organization of the new settlers has partially participated in establishing only five PHCU out of 34 in the first three years of the program.

In Kassala only the community was responsible for establishing, furnishing and maintaining the PHCU's.

All hospitals rely much on fees for visiting inpatients to support and improve services in the hospital as miscellaneous expenses.

Voluntary societies are well established in Gadaref mainly by rich people, like Association of Friends of the Sick. In Kassala, there is Red Crescent Society and School Health Society. Both are mainly formed by officials and interested community members. In Halfa, the Agricultural Organization was formed by the government at the time of starting the scheme of land reclamation and resettlement of the dwellers of Old Halfa in the North.

In all Kassala province, local communities were able to identify their health problems and set priorities for them. For example, in Gadaref and Kassala the main health problems were malaria, chest infections and diarrhea, while in New Halfa district, Bilharziasis was identified as the first health problem.

Community Development

Out of the various discussions with community members and leaders at different levels in the three districts, and also as a direct observation of our group; it is evident that marked community development has taken place in the whole province. It has been stated that the backbone for such community development was the CHW and his activities. This was the opinion of community

leaders in Gadaref and Kassala and was strongly supported by the Regional Minister of Public Services for the Eastern Region.

Indicators of Community Development

- Habits of the people started to change, mainly, in dressing and food habits. They dress now more fully and they include some food items in their diet such as vegetables and tomatoes which were not known before to many villages and nomads.

- General awareness for the need for health services. Communities which have no health facility are requesting a PHCU; while villages which have a health unit are asking for its upgrading to a dispensary or health center.

- Increase in cooperative activities in various field other than health problems such as encouragement for the cultivation of vegetables and tomatoes in villages and nomadic communities. Also there were trials for livestock breeding. Two localities (out of 5) in Kassala established consumers coops, grinding mills and bakeries.

- People started to deviate from using healers as "fakir and country people" in using the PHCU and CHW.

- Establishment of Primary Schools by community participation in villages. We visited one, observed another and were informed about other communities, both stationary and nomadic.

- Increase of numbers of girl pupils in the village schools. In one school girls formed 50% of total number of pupils, while in the other it was 20%.

N.B. A peculiar characteristic of the Eastern Region as a whole is the presence of a great number of refugees from Eritria and Ethiopia, the estimated number is 300,000 persons. They have some health care facilities and services supplied by International bodies and foreign agencies. Yet they actually share the local limited health resources with the local Sudanese Community.

Health Personnel and Training: Kassala Province

No. of PHCUs in Kassala Province by Year and District

	77/78	78/79	79/80	80/81	81/82
Gedaref	—	28	—	56	76
N. Halfa	9	19	—	34	54
Kassala	35	60	—	80	100
Total	44	1-7	—	170	230

Planned No. of PHCUs 77-78: 291

Established No. of PHCUs (N.B. There were no additions in the year 79/80) 77/78: 230

% Achieved 79%

Average No. of Citizens/one PHU = 4,500 to 4,000

The Managerial Process of PHC

(I) The village communities are represented by the village council. This council is the village level decision making organization which selects the CHW to be trained and raise funds and/or organize the building of the PHCU. The selection of the CHW and the feasibility of the village is inspected by the district's deputy director for health and/or the CHWs tutors (2) of the district. The feasibility of the village to have a unit is based on the criteria outlined in the "orange book" and is adhered to in almost all cases.

(II) The village council is organizationally under the district executive council. The district executive council is elected by the population and has representatives from the district's lay community - chamber of commerce, traders, cultivators. The council is headed by a government appointed "officer". The function of this council coordination and implementation of activities in the community. The Executive Council at the district level acts as a body discussing different sectorial activities - health, education, agriculture. This district exec. council has direct contact with the Dist. deputy director of Health. They are the decision making body in terms of establishing PHCUs, upgrading existing services, the supply of drugs and the outbreak of disease in the community. Starting in 1982-83, they will be responsible for planning and implementation of health programs, paying salaries and expenses relating to PHCU, dispensaries and health centers.

(III) The decision making elected body, i.e. (community representatives at the provincial/regional level is the provincial Exec. Council. This council has a special sub-committee on health. Government health service officials are not represented on this committee and are only present when invited by the council to do so.

(IV) Each of the Executive Councils at the district level prepare their health plans and give it to the District Deputy Director for health in the form of a proposal.

(V) The District Deputy Director for health compiles the health proposals from the various districts and submits them to the Provincial director for health in Kassala.

(VI) The provincial director compiles the proposals from the various districts, reviews them and send them to the regional Ministry of Finance in Kassala.

(VII) This budget proposal is sent to the Central Ministry of Finance where it is finalized.

Summary:

In general the process for the flow of funds from the Ministry of Finance in Khartoum to the Regional Ministry of Finance to the Director of Health in Kassala to the District Deputy Director for Health to the local Executive Council.

Coordination and Communication

The process of decentralization is still in its formative stages. As such, the coordination and communication processes are often vague and difficult to discern. The role of the Central Ministry of Health is not clear. The general broad policy function and overall plan is with the Minister and Ministries of Planning and Finance. The individual departments in the Central Ministry of Health do not seem to have any substantial coordination/communication channels with the provinces.

External technical and financial assistance comes through the Central Ministry of Health. However, once the donor agency with the Ministry of Health has written the contract and a "zone" of implementation had been identified, everything else is carried out by the regional Ministry of Health with hardly any input from the Central MOHs.

The decentralization process is increasingly concentrating the planning process at the local community level. At the regional level, autonomy from the Central organization seems to be the preferred mode of operation. The central managerial issue arising from such a situation is the lack of overall wholistic views that would permit an effective and efficient implementation process.

While the wish is to concentrate all planning and implementation of health plans at the regional level, the realtiy is that the regions continue to depend on the budget distribution and allocations from the Central Ministry of Finance. This allocation is barely sufficient to keep the existing services in operation. Any expansion in the health services to meet community needs and overall national plans requires input from international donors which comes through the official organ of the Central Ministry of Health.

In the region visited, the team calculated that 70% of budget allocation went to paying salaries and allowances, 7.2% to drugs, 2.5% supplies and 4.9% for food for hospital inpatients. The actual expenses far exceed these allocations. Drugs, for example, exceed 80% of allocation and food exceeds 100% of allocations. Clearly, expansion of services to reach the periphery will depend on the Central Ministry of Health coordinating its activities to obtain support for funding of projects.

Coordination and communication problems arise in the managerial process of decentralization in that professional health personnel have to deal with community level non-medical personnel. The provincial health committee use the Director for Health as coordinator. Their communication and feedback mechanism is directly with the Minister of Health.

At the provincial level, the Director of Health communicates and coordinates health activities with organizations such as the Red Crescent, the Peoples' Council and the Schools' Committee.

Coordination and managerial functions from the district level Deputy Director for Health to the Minister of Services is done through the Provincial Director for Health. The responsibility of reporting from the district level to a multiplicity of higher level officials at the provincial level on all that concerns the district's activity in health services results in frustration and duplication of efforts. One District Deputy Director for Health expressed this organizational relationship as being similar to a woman married to four men. In his own district, the deputy director for health is the primary coordinator between community organizations, international organizations implementing project activities, the village communities and the health personnel.

Coordination of health activities at the community level stem from community needs as identified by the community. In the PHCUs visited, community members could very clearly identify their health problems and needs. The role of organized voluntary organizations from the community at the district level was a most impressive non-formal implementation organ.

The formal coordination activities between the PHCU and the district, as expressed in the PHC Complex is supposed to be done through the Medical Assistants at the dispensaries. Numerous factors make the complex model difficult to implement. Among these factors is that the job description and training of Medical Assistants has not been reviewed since Colonial times. Their concept of coordination/ supervision is inspection rather than support and evaluation for improved performance. Notwithstanding all the afore mentioned factors, at present the Medical Assistants have a curative workload that makes it virtually impossible to leave his station. All referrals from the CHW go directly to the health center or the district hospital thus eliminating both professional and the administrative contact and communication. The issue of coordination at this level is evidently more than a shortage of vehicles and petrol.

At the base of the PHC program organization as it currently exists is the midwife and the sanitary overseer and the most recent addition, the CHW. These constitute the frontline health attendants.

However, it is only through the institution of the CHW and the supporting training schools that a totally new sub-system was introduced to the already highly compartmentalized PHC system. To all intents and purposes, it is either the Sr. Medical Assistant or often the District Deputy Director for Health who is the CHW's supervisor (together with the CHW's tutors) in some cases. Recent recommendations from the Central Ministry of Health proposed to make the complex based on Health Centers. This will be a realistic approach as the evolving patterns of activities are formulating a model where the referral is at the Health Center. Other activities could be built here in terms of short orientation courses and more realistic communication and supervision.

During the team's visit to a health center, the attending MO confirmed this pattern of communication, adding that tit is often the CHW who alerts them of epidemic outbreaks in the communities.

The promotional mechanism for the CHW has not been faced seriously. The upgrading and career opportunities that exist in other health categories through seniority are not available to the CHW. In few of the PHCU visited, the CHW are voicing this discontent and are beginning to establish a union to address this problem. From a management point of view such a move could add complications in the still new system.

The Ministry has confronted this issue by proposing that the CHW channels for career advancement be put into the categories of Medical Assistant or Sanitary Overseer. Another alternative would be establishing a seniority pattern within the CHW category. Both alternatives could have additional implications.

Refugees:

Throughout the Eastern Region of Kassala Province, the issue of refugees is a problem. Any kind of rational planning is made even more difficult to attempt because of this issue. The resources of health personnel and medications in the refugee camps are expressed as being more than for Sudanese communities. Nevertheless, supervision of the refugee health facilities and referrals from the camps to the district and regional health facilities are a drain on the resources and manpower. This drain affects the communities where refugees outside the camps have settled and are utilizing the PHC facilities.

The District Deputy Director for Health has the responsibility of coordinating refugee facilities with the district's existing facilities. Often, government health delivery personnel complained that agencies duplicate efforts rather than supporting and complementing the district's needs for health resources.

Feedback:

Evaluation and supervision are generally understood in their policing role of punishment for bad performance rather than a planning tool or a tool to improve. Officials interviewed relied on external agencies conducting evaluations. However, for on-the-job evaluations one official dependend on the reporting from the community for any complaint about the CHW.

At the dispensary level, the Medical Assistants frequently transfer (once a year) which is seen as an "evaluative" method because the community gives its complaints and negative feedback after the Medical Assistant is transfered.

The Managerial Process:

In the districts visited, the managerial process is "crisis" oriented. There is little long-range planning done at the district or regional level. At the district level, the Deputy Director for Health is the Central figure where all decision making originated or was implemented. Very little delegation of authority exists.

Health Information System - Kassala Province

Information given below is that based on actual interview and examination of records from the following sources:

1. Seven PHCUs
2. Two dispensaries
3. Two district statistical clerks
4. One regional statistical clerk
5. One hospital statistical clerk

Interviews were conducted in the interviewee's place of work and records and information were examined to support the findings.

(a) Outpatient Registers

All health units had Outpatient Registers whre they recorded information on their curative activities. This was a standard register used throughout the province to record name of patient, sex, age, residence, complaint, new or old case, treatment and referral status.

A. Two PHCUs and one dispensary were not accurately completing age and sex.
B. Only two of the nine units were accurately and completely filling in the complaint and treatment

columns. Most times these two items were either not filled in, or not filled in so as to recover the information for the monthly report.

C. The reason given for not accurately doing the register is that they did not have the time.

(b) Promotive Registers

None of the nine units attempted to fill out promotive registers. Reason given is that they were not instructed to do so.

(c) Death Registers

Only one dispensary had a death register. This was the official Government of Sudan Register. The last entry in this book was February, 1980. When asked about this, he said this was the last time a certificate was requested.

No other units had registers.

(d) Birth Registers

- 3 of the 7 PHCUs had birth registers; one had certificates.
- Both dispensaries had registers and certificates. One was not using them at all while the other was using them.
- None of the PHCUs or Dispensaries were doing stillborns. When asked why, they said they didn't know they were supposed to do them.
- When done, the registration was done correctly.

(e) Monthly Reports

- 8 of the 9 units visited were sending in monthly reports. The one who did not send them in said he did not have a report form.
- For one PHCU and one dispensary the report was obviously fabricated since the information in the register was incomplete and this was not reflected in the report.
- Only curative (diseases by age and sex) was reported monthly, no attempt at vital statistics or promotive activities.
- No one discusses the reports with their village leaders.
- Reports were sent or taken directly to the district headquarters at the end of the month.
- No one made use of the information to understand the health problems in the village.

(f) District Statistical Clerks

- One clerk had been trained in Khartoum at the Statistical

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Institute which the other was given a one month on-the-job training.
- Clerks receive and compile district reports from hospital and other health units within the district and send to Regional office in Kassala.
- Reports are not being used by district administrator for health planning.
- Reports are not checked correctly for accuracy and completeness by Clerk or Supervisor. Many obvious errors and inconsistencies were found in the reports.
- District Health Officer did not use reports to note disease trends.
- Clerks have no way of correcting mistakes in units reports because they have no way of contacting the units.

(g) Regional Statistical Clerk

- Regional Clerk receive data from all hospitals and districts in the region. Compiles a regional report using this information.
- Regional office is understaffed since it cannot send replacements to hospital and district offices that have no clerk.
- Regional office needs a calculator.
- Clerks need training in ways to present and analyze data.

(h) Hospital Statistical Clerk

- Hospital clerk collect outpatient and in-patient data from his hospital clinics. He also issues birth and death certificates.
- Clerk compiles a monthly report and sends to district, regional and central.
- No further analysis is done with data.
- Data is not used for planning.

LOGISTICS AND SUPPLIES

Requirements for drugs and supplies are based on the remaining stock on hand in the stores and the stock issued to using activities between ordering periods. Items and quantities selected are a joint effort by the District Deputy Director, Senior Medical Assistant and the storekeeper. The completed order is approved and signed by the District Deputy Director before it is forwarded to Central Medical Stores in Khartoum for action.

Priorities are established based on the needs of the CHW's at the PHC Units and the MA's at the dispensaries which are then listed on a Dispensary Requisition Form and submitted to the

district-provincial stores on a monthly basis. Information obtained from interviews with the District Deputy Directors and storekeepers indicated that requirements for essential drugs are made known to higher headquarters to meet emergency conditions. If drugs are not available for issue, patients are given a prescription by the CHW/MA and purchase the needed items from the private sector pharmacies in the local areas.

Allocations of drugs and supplies are basically made on a "first come - first serve" basis and the availability of the stock on hand at the time of the request is submitted. If stock in the provincial/district stores is sufficient, the quantities ordered are issued; if stock is inadequate, quantities are reduced; if stock is not available, the item is annotated NA or NIL and the units must re-order the item next ordering cycle. This procedure creates severe shortages of drugs at the units, especially those located at the periphery. Distribution of donor supplies for the PHCP is made by the Director General, Rural Health and Primary Health Care in the Ministry of Health. These supplies (UNICEF) are sent to the provincial level and marked for specific locations and distributed. UNICEF drugs, instruments and supplies were on hand at Kassala and Gedaref for 48 PHC units. These supplies will initially stock the new PHC units.

The actual requisitioning of drugs/supplies is done by the storekeepers at the district/provincial levels. Each storekeeper maintains a stock balance card for each item which reflects receipts and issues on each item. Using this past consumption experience and his present stock availability, items and quantities are selected. The completed order is reviewed, approved and signed by the District Deputy Directors at the district/provincial levels. All storekeepers have received training at Central Medical Stores in Khartoum ranging from three months to two years. The following schedules are followed:

Gedaref: Orders supplied once a month from Central Medical Stores in Khartoum. An old Bedford truck is used to transport the supplies from Khartoum to Gedaref. The storekeeper handcarries the requisition to Khartoum and usually waits 2-3 days while the requisition is processed at Central Medical Stores. Last order was processed and received in March, 1982. Supplies arrived in good condition now that they are using their own transport. Previous shipments by rail were received with some units broken/damaged.

New Halfa: Orders supplies once every two months, once every three months during rainy season. The storekeeper handcarries order to Central Medical Stores using commercial transportation. Processing times average about one week. A truck is rented (200 Sudanese Pounds) and the supplies are transported to New Halfa accompanied by the storekeeper. Last order was processed on 17 March 1982,

items received in good condition, however, some items were issued that exceeded their expiration dates.

Kassala: Orders once every three months. The International Harvester Truck is used to transport the supplies from Khartoum to Kassala. Processing time at Central Medical Stores takes 7-10 days. Storekeeper accompanies the order and the round trip usually takes about two weeks. The last order was placed in January, 1982, and new order was completed and will be handcarried to Khartoum in April, 1982. The District Deputy Director stated they have not used a rental truck since the International Harvester was received in January, 1981.

The delay in ordering and receiving supplies at the dispensaries/ PHC units from the district/provincial levels is mainly lack of transportation. CHW's interviewed stated they order supplies on a monthly basis and use commercial transportation, at their own expense, to request and receive their supplies due to lack of government transportation and/or petrol. One CHW stated the community furnished him transport when he required supplies. Lack of supervision by the MA and the failure of the MA to deliver drugs to the PHC units also contributes to the delays in receipt of supplies at the periphery.

The supplies received at the periphery appeared to be in good condition from observation. However, the drugs were, for the most part, not sufficient for the needs of the CHW and dispensaries visited. Shortages of chloroquine injection, chloroquine tablets and procaine penicillin were prevalent in all the units visited.

Storage facilities in all the stores visited are inadequate for the storage of drugs and supplies. In all locations visited, some stock is stored outside the buildings due to insufficient space.

All stores need additional coolers as the temperature is relatively the same inside or outside of the stores. Arrangement of drugs in all the stores was satisfactory considering the available space, however, there is room for improvement. Since manpower is not a problem, each store had at least four assigned personnel, a general house-cleaning of the stores could be done by disposing of empty cartons, rubbish, outdated items and other items that appeared to be unserviceable from observation. Storage of vaccines and injections in the refrigerators was inadequate. There was no evidence of any temperature records maintained for any refrigerators, therefore, the stored vaccines were suspect of serviceability due to fluctuation of temperature due to power cuts. Three refrigerators were out of order and it was difficult to determine from interviews if any attempts were made to have them repaired. When large equipment items, such as X-Ray units,

autoclaves, etc., require repair, a letter is sent to Khartoum and a technician from Central Medical Stores comes to repair the item as there are no trained medical equipment repair technicians assigned. Local sources are also used in an attempt to repair equipment. Smaller equipment items, sphgymomanometers, stethoscopes, etc. are taken to Khartoum for repair. There are no spare parts in stock at the district/provincial stores for repair of equipment.

Supply training is part of the curriculum for all CHW's. However, none of the CHW's interviewed were maintaining the Monthly Drug Consumption form and Drug Supply Card as required. One CHW was maintaining a record of drugs used, on a sheet of paper which contained essentially the same information as the Drug Consumption Form. Other supply records, such as requests for supplies, were being maintained by the CHW's. More supervision by the MA in this area is required.

Vehicles

The overall responsibility for the control of vehicles rests with the District Deputy Directors. The Chevrolet Carryall assigned to New Halfa is imoperative awaiting spare parts and one International Truck and Chevrolet Carryall at Kassala are also inoperative awaiting spare parts. When vehicles require repair, local sources are used; (Government garage, garages in the private sector) in an attempt to repair the vehciles. Spare parts for vehicles are not stocked locally within the stores at the district/provincial levels. One driver from Kassala has attended the three month automotive mechanic driving course in Khartoum. Other drivers have not been formally trained but can accomplish minor repairs and maintenace through experience. Three vehicles were observed as being totally beyond repair (body skeletons) and were parked in the compound next to the stores. See attached listing of vehicles assigned to the district/provincial facilities visited.

KASSALA PROVINCE - VEHICLES

Make	Qty	Location - Purpose	Condition	Donor
Toyota	1	Doca Hospital		United Arab Emirat
Toyota	1	Hawata Hospital		United Arab Emirat
Toyota	1	Wagar Hospital		United Arab Emirat
Toyota	1	Khashmal Girba Hospital		United Arab Emirat
Toyota	2	Health Center Complex-Kassala		United Arab Emirat
Toyota	1	Regional Council-Kassala		United Arab Emirat
Toyota	1	New Halfa		United Arab Emirat
Toyota	1	Gedaref-Epidemiology Dept.		United Arab Emirat
Peugeot	1	Bilharzia Div.-New Halfa		United Arab Emirat
Peugeot	1	Sr. Public Health Insp-Gedaref		United Arab Emirat
Peugeot	1	Kassala Hospital		United Arab Emirat
Peugeot	1	Banat Health Center-Kassala		United Arab Emirat
Peugeot	1	Midwifery School-Gedaref		United Arab Emirat
Peugeot	1	Khashmal Girba Hospital		United Arab Emirat
Minibus	1	Kassala Hospital	Inoperative	United Arab Emirat
Ambulance	1	Gedaref Hospital		United Arab Emirat
Ambulance	1	New Halfa Hospital	Inoperative	United Arab Emirat
Toyota Stationwagon	1	District Deputy Dir.-Kassala	Inoperative	United Arab Emirat
Stationwagon	1	District Deputy Dir.-Gedaref		United Arab Emirat
Stationwagon	1	District Deputy Dir.-New Halfa	Inoperative	United Arab Emirat
Bedford truck	1	Kassala-Drug Transportation		WHO
Bedford Ambulance	1	Hamash Coreib		Islamic Org.
I.H. Truck	1	Kassala-Drug Transportation		USAID
Truck	1	Kassala	Inoperative	USAID
Chevrolet Stationwagon	1	Kassala-CHWs	Inoperative	USAID
Stationwagon	1	New Halfa	Inoperative	USAID
DAF Truck	1	Ministry of Works		Holland Asst.
DAF Truck	1	Ministry of Works		Holland Asst.
Toyota	1	Sr. Public Health Insp.-Kassala	Good	United Arab Emirat
Toyota	1	Sr. Medical Assistant-Kassala	Good	United Arab Emirat
Toyota Bus	41	Health School-Kassala	BAD	MOH
Land Rover Stationwagon	1	Nutrition Dept.-Kassala	Good	WHO
Stationwagon	1	District Deputy Dir.-Kassala	Good	WHO
Land Rover Pick up	1	Nursing and Midwifery School-Kassala	Moderate	UNICEF

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Make	Qty	Location - Purpose	Condition	Donor
Pick up	1	EPI-Kassala	Moderate	UNICEF
Land Rover Stationwagon	1	Malaria Div.-New Halfa	Moderate	UNICEF
Stationwagon	1	Malaria Div.-Now in Aroma Hospi Hospital	Moderate	UNICEF
Peugeot Bus	1	Midwifery School-Kassala	Good	United Arab Emirates
Peugeot Pick up	1	Khatmeya Health Center-Kassala	Good	United Arab Emirates
Pick up	1	Railway Health Center-Kassala	Good	United Arab Emirates
Land Rover Pick up	1	Health Visitors-Kassala	Inoperative	
Toyota Pick up	1	Wagar Hospital-Kassala	Good	
Bedford Truck	1	Gedaref Hospital-Drug Transport	Good	
Total	44			

EI-19

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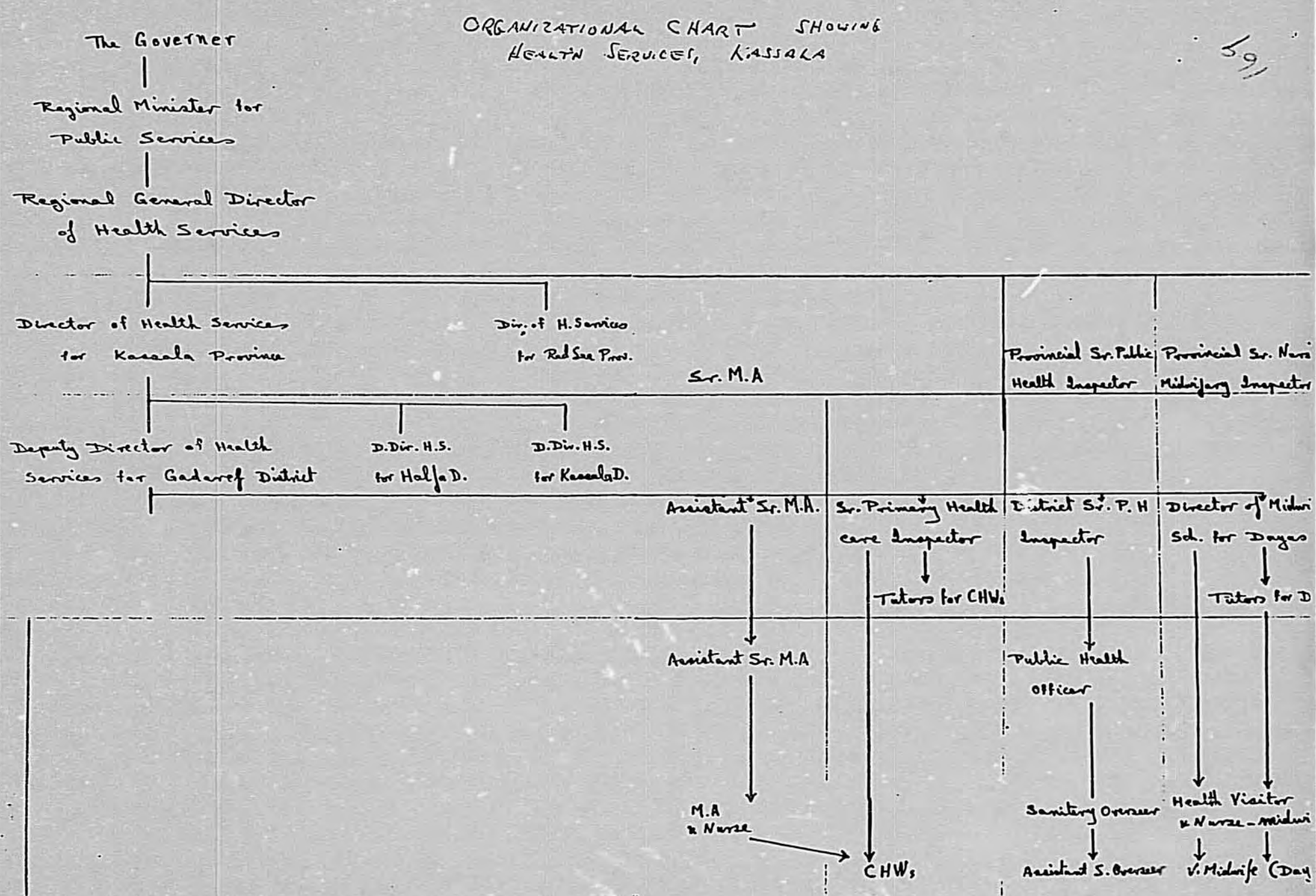
ORGANIZATIONAL CHART SHOWING HEALTH SERVICES, KASSALA



APPENDIX E (2)

REPORT OF THE EL OBEID FIELD TEAM

NORTH KORDOFAN

24-31 March 1982

Submitted by:

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Dr. Brooks Ryder

Program of Evaluation Team to North Kordofan

March 24 -31, 1982

Wednesday 3/24

Departure from Khartoum via Sudan Air to El Obeid

Thursday 3/25

Meeting with His Excellency Minister of Public Service
Meeting with the Regional Director for Health and Social Services
Meeting with the Director of Primary Health Care Program

Friday 3/26

Visit to El Loweib Primary Health Care Unit
Interviewed Community leaders.
Interview with Traditional Birth Attendants (TBAs)
Interview with recipients of Health Care Services.

Saturday 3/27

Visit to the Community Health Workers School
Visit to Kitayet dispensary

Sunday 3/28

Visit to Umarch Primary Health Care Unit
Interview with community leaders
Interview with Traditional Birth Attendant
Interview with recipient of health care services
Visit to a dressing station
Visit to Abu Herax dispensary
Interview with village midwives
Interview with assistant sanitary overseer

Monday 29/3/82

Visit to El Shanablu leaders
Visit to Nomadic Primary Health Care Unit
Interviews with recipient of health services

Tuesday 30/3/82

Visit to the Provincial Medical Stores
Visit to the Village Midwives School
Visit to the Medical Assistant School
Visit to El Obeid Hospital
Interview with statistical staff at MOH
Interview with Senior Medical Assistant
Interviews with physicians at General Hospital
Interviews with Director of Regional Hospital

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Wednesday 31/3/82

Discussion of findings with Rhgional Director and Director of PHCP

Departure from El Obeid to Khartoum

ACCESSIBILITY, COVERAGE AND ACCEPTABILITY

Estimates concerning coverage in Kordofan are derived from a process that assumes an average coverage of 2000 population per CHW. With a total population of 1,267,000, North Korofan has 315 CHW's and NCHW's (231 and 84, respectively) including those still presently in training. An estimated 630,000 people are thus reached by the PHCP - or less than 50% of the population. In addition, other urban and larger rural communities are served by dispensaries, rural hospitals, health centers and urban hospitals. The above figures could, perhaps, be refined a bit further by making the assumption that 70% of the population of North Korofan is "rural settled" 18% nomadic and 12% urban, and that, since most PHCU's are in rural or semi-settled areas, the PHCP addresses a population of 88% of 1,267,000. However, the figures are too fragile to justify the effort.

The above "guesstimate" of coverage was formulated by the Regional Director for Health and Social Welfare and his Director General for (Curative) Medicine. No maps of the area, showing population density or distribution are available in MCH offices, nor are there maps showing the locations of health facilities (hospitals, dispensaries, PHCU's, etc.). Older smallpox eradication maps of the region are said to be far out-of-date because of population migration and urbanization trends.

Further expansion of the PHCP may not necessarily involve reaching more remote and inaccessible population groups. Some "uncovered" areas are closer to dispensaries and hospitals than are areas already served. It is noteworthy that some rural populations - especially nomadic - may be more accessible to MDH facilities in other provinces (i.e. Khartoum) than to the regional center in El Obeid. In other words, the health care delivery watersheds do not always conform to political boundaries.

One PCHU visited serves a population of 6,500 in 8 villages; the largest community has a population of 2,000. Another PHCU serves 5,000-6,000 population in 10-11 villages scattered over an area measuring 20 X 30 miles. The MCHW is presently working in a semi-settled area with a poor and mostly older population base of 200 individuals while the tribe (total 60,000) is 400 miles away. Seasonally, this MCHW travels with a group of 500 people.

The 60,000 members of the El Shanabln Tribe are served by 9 NCHW with another 4-5 in training, representing maybe 4,000 per NCHW.

There is a positive attitude toward the CHW and NCHW and to

the PHCU's. This was manifested during conversations with village leaders and health officials. In our limited sample, there appeared to be better relationships between community and CHW where recruitment and selection of the CHW was entirely a community decision than was the case when health personnel participated in the selection process.

Services provided are effective at PHCU level on the curative side, but are virtually non-existent in promotion of health and disease prevention.

There is no statistical evidence that the services provided have had an impact on morbidity and mortality rates - nor would one expect such evidence yet even were a more sophisticated data-collection process in place. Questioning of CHW's and MCHW's suggests that mortality was prevented in such cases as: pnemonia, brochopneumonia, cerebral malaria diptheria (referred to hospital) and one renal calculus removal (sic).

CHW #1	7 deaths prevented over 4 years
NCHW #1	15 deaths over 5 years before the PHCU and only 10/5 years, subsequently.

Note: No conclusions can/should be drawn from these impressionary figures: too unreliable.

COMMUNITY PARTICIPATION

Community participation in PHC was manifested by:

1) support in the construction and maintenance of PHCU's.

   In one community SL 300 was raised locally for construction materials and labor to build the unit (this would work out to SL 3.60 per household). Villagers themselves helped with labor involved in building the (simple) teakel.

   A monthly payment of SL 20 is received by the CHW for purchase of kerosene, wood and water.

2) community councils actively participate in the process of nominating and/or selecting community members to be sent for training as CHW's.

   In our limited sample, there was suggestive evidence that continuing community support for the CHW was stronger where the entire selection process was a local affair than it was where health officials selected from among several nominees.

3) collection boxes have been tried, but do not seem to work effectively and may, indeed, create more antagonisms than they are worth in terms of financial support.

4) In general, it was the team's impression that the PHC system in North Kordofan may be viewed by villagers as an extension of MOH activities to village level rather than as a community activity. For example: the CHW receives his salary from the health system, not from the community. Drugs and medications come from government. Technical supervision comes from outside the area. The CHW may, indeed, even be seen as a government official rather than as one of the villagers. (The team cannot document this particular item, but the evidence is strongly suggestive.)

5) The design and construction of PCHU's helps to engender the concept of the unit as a community affair. PHCU's are of brick - or wood and wattle - or mud walls - like other village structures. No PHCU's were observed that were of an "outside" or "foreign" design.

6) Essentially no community participation was found in such areas as improving sanitation, water or nutrition. No significant health education activities are carried out.

No latrines have been constructed in rural or semi-settled villages.

In other words, the program at village level is a curative program with no involvement of the community in preventive or promotive activities.

HEALTH PERSONNEL AND TRAINING

I Categories of Health Personnel

North Kordofan like the rest of the country has various categories of health personnel involved in rendering curative, preventive and promotive health services. According to the 1981 annual report of the provinces, the number of personnel in various categories are as shown in the following table:

No. of Health Personnel In Northern Kordofan By Category 1981*

Physicians		76
Interns	19	
GP	36	
PH	7	
Specialized	14	
Dentists		6
Medical Assistants (MA)		252
Nurses		681
** Village Midwives (VMW)		3
Health Visitors (HV)		12
CHW		225
Sanitary Overseers (SO)		17
Assistant Sanitary Overseers (ASO)		84
Technicians (X-ray, ophthalmic)		11
Health Educators		2
Sanitary Workers, as mosquito men		11560
Aids		493

** Working in hospitals

* These figures include personnel in hospital services, PHC, environmental sanitation, etc.

II Manpower Planning, Organization and Utilization

Accurate figures about the population of the province, its

characteristics and distribution are not available - hence it is rather difficult for the health authorities to provide any information in relation to manpower planning and projection and manpower requirements. Furthermore, there was no clear basis for health manpower development and utilization of existing health personnel.

It was also noted that in discussions related to PHCP emphasis was being placed on the CHW while other categories of personnel were not given due consideration e.g. assistant sanitary overseer and the village midwives.

Job descriptions for many categories of health works were not available. It was indicated that the only existing job descriptions are for the CHW, MA and others which are outlined in the PHCP document. It was team members impression that these job descriptions are not in line with the actual performance of the specified health personnel. Moreover, it was noted that there is a duplication in the activities of some health workers such as assistant sanitary overseer, village midwives and community health worker.

III <u>Services Rendered by Different Categories of Health Personnel-level</u>

1. Community Health Worker is a frontline service provider to villages among the nomads and rural communities. He operates the PHCU and serves between 5,000-6,000 population in 7-10 villages extending over an area of approximately 20 X 30 miles.

   The services he renders are essentially curative in nature and include diagnosis, dispensing of medications and referrals. The number of attendance to the PHC is 10-15 per day. On an average CHW would refer approximately 150 cases per year to the nearest facility or to the facility that has best transporation means. At times the CHW may do house calls for patients who could not come to the PHCU. Sporadically, the CHW may be involved in clearing campaigns in the village, which he organizes in collaboration with the village council. Health education activities are carried out at random to women and men groups on nutrition and environmental sanitation.

   It was clear from the observations made and interviews conducted that the CHW is not actively involved in efforts related to promotion of health and prevention of illness. Moreover, it was evident that the CHW is mainly bound to PHCU and does not move around in the communities he serves.

The resources available to CHW in terms of adequacy of the unit, furniture and equipment were very impressive particularly given the fact that those were the input of the community. As for drugs, water, fuel for sterilization and other consumables: these were in short supply and frequently the CHW runs short of essential drugs, e.g. chloroquine. It was interesting to note that the CHW is not given any supplies which are used or needed for environmental sanitation, e.g. insecticides.

Supervision is lacking for the community health worker: theoretically he is supposed to be supervised by the medical assistant and health inspector. However, the visits are very sporadic and the purpose of the visits are for inspection rather than being geared toward guidance and reorientation.

The CHWs as a whole are respected by the community leaders and the community appreciates the services he renders and makes use of him.

It was also noted that the CHW are focussing mainly on Western care delivery and are not, at least officially, involved in prescribing any of the herbs which are available and commonly used in the country and at times recommended by physicians.

The working relationships between the CHWs interviewed and other health care providers was not easy to determine since all CHW visited did not have in the villages they serve other workers such as sanitary overseer, village midwives, mosquito men. However, it was obvious that there is no relationship between CHWs and TBA Dayets.

Among the constraints which the CHW encounters are shortages of drugs, poor means of communication and transport, CHW also complained about deficiency of their progress in MCH aspects and this was very evident particularly in the absence of village midwives.

2. Village Midwives

Village midwives are semi-literate and/or illiterate women who are selected by the village and receive training for one year. They render antenatal service to mothers, conduct deliveries, perform episiotomy and carry out post-natal visits for the first post partum week. Village midwives operate mainly in the village they are selected from - however, at times they may render their services

to 2-3 neighboring villages. Antenatal care which is usually carried out in the dispensary, includes general examination, obstetric examination, urine examination. Post natal visits include observation of general condition of woman, general hygiene and care together with information on breast feeding, nutrition and environmental sanitation. Village midwives are not involved in any child care or family planning activities. The village midwives are attached to the dispensary and they report to the medical assistant to whom they are to refer the difficult and complicated conditions. Village midwives are not salaried staff - they receive a subsidy of 10.00 SE from MOH and are supposed to be paid by the community. According to one village midwife this pattern is rather unfair since the community sees that she is having a subsidy and do not contribute to her cash in kind. It was observed that in villages where there are village midwives there were no TBA and the reverse was also true. Supervision of the village midwife in not adequate. Village midwives also have access to the community through their home visits. However, they are not involved in any community activities. The constraints which confront village midwives are shortage of supplies, e.g. deitol, alcohol, catgut and cotton. To overcome this problem in one dispensary the village midwives were charging 10 pt. for each antenatal visit and used these fees for replenishing their supplies. This approach was effective in this village. In another village this system proved to be ineffective because there was a drop in the number of antenatal visits and the practice of charging for antenatal was dropped.

3. <u>TBA Dayet El Habel</u>

TBAs are fairly prevalent in North Kordofan particularly among the nomadic community. They are involved mainly in conducting and managing the deliveries. Though the TBAs indicated no mortality or morbidity during their years of practice tutors at the village midwives school reported incidence of tetanus, bleeding and both stillbirths and maternal mortality. TBA were well recognized in the communities and receive reimbursement for their services in cash or in kind. They do not have any direct contact with the PHCU and hence they are not supervised by any health personnel. In one instance a TBA did refer a bleeding woman to CHWs. TBAs do appreciate the services rendered by the CHW and utilize it as needed. Younger TBAs expressed need for "receiving training and appropriate tools" for improving service they render. It is important to note that the TBAs interviewed do not perform female circumcision in the community.

4. Medical Assistant (MA)

On the primary health care level MAs operate out of the dispensary. The activities they render are mainly curative in nature, involve diagnosing, prescribing and referral to the district hospital or health center. Occasionally MAs may get involved in EPI and health activities. The medical assistant is responsible for the staff in the dispensary which include nurses, sanitary overseer, village midwives and aids in addition to supervising CHW in his areas. Supervision to CHW is not carried due to lack of transportation, long distances between dispensary and primary care unit and the overload of the curative services. Some of the CHWs do send their monthly reports to MAs. However, this is not standard practice and there is no feedback mechanism from the MAs to CHWs. The medical assistant at some dispensaries are involved in training of CHWs during their field practice.

5. Sanitary Overseer and Assistant Sanitary Overseer (ASO)

During the visit the team met with only one ASO. His activities involved food inspection, supervision of town cleaning, checking on latrines and supervision of mosquito men activities. The ASO overseer does not have any direct contact with the CHW or VMW. However, he works closely with the MA. The sanitary overseer works mainly in town and he is supervised by the public health inspector at the district level.

IV Training of Health Personnel in PHC

1. Basic Training

A. Community Health Workers School

There is one training school for CHW in N.K. which started in 1977. The length of the program as stated officially is one calendar year. However, different people interviewed gave different answers which ranged from 12-18 months. The curriculum has the following sequence:

1. Subjects are taught in block times by the tutor and these include anatomy, medicine, surgery and environmental sanitation.

2. Laboratory work - which include injections, enemas, dressing and bandages, again given by the CHW tutor.

3. Field work in dispensaries of rural health center under the supervision of medical assistants.

4. Special lectures in the school in veterinary medicine, ophthalmology, family planning, maternal and child health preventive medicine and pharmacology given by external consultants in the various areas of speciality.

Based on the above sequence the following observations could be made:

1. There is more time devoted to theory and laboratory work than field practice.

2. Field practice is limited to curative health care which is rendered through the dispensary rather than the community and that involves aspects of environmental sanitation, household visiting, community dispensaries and health education.

3. Curative objectives are emphasized in the teaching more than preventive and promotive objectives in dealing with various subjects.

4. There is lack of integration of theory with laboratory practice and field work and promotive care with preventive aspects. For example, students are taught in theory how to do latrine and health education courses - yet they have never seen how a latrine is constructed nor did they get any example in preparing and giving health education talks.

Community Health Workers Tutors

There are five community health workers tutors plus a senior tutor responsible for the teaching of the students and the management of the school. All these tutors are experienced medical assistants who have received training for three months in community health and three months in teaching methodology in Boraket Training Center. The tutors are assigned subjects which they cover for the whole class in a specified period of time. They are also involved in the process of selecting students and play a secondary role in the final examination which is usually carried by external examiners who are consultants from the hospital and public health officers. The tutors did not have any refresher courses or continuing education program since this initial training activity.

The tutors prepared lesson plans that stressed information - distribution and increasing the student's knowledge of the subject matter. There was no evidence in the tutor's note-

book of incorporating any principles of educational methodology, e.g. objectives were not stated, teaching methods were not specified, no questions for discussion, no reference to students' activities, or even mention of the student's manuals or the use of teaching aids. However, the teacher indicated that they use the UNICEF provided audio-visual models and data in their teaching. Since the visit was taking place during examination time the evaluation team did not get to see any teaching session.

The constraints identified by the tutor were:

1. Large number of students. Originally the school was established for 45 students and now the enrollment is up to 96.

2. Lack of housing facilities

3. Lack of transport which interferes with their ability to supervise the students during their field practice in the various dispensaries.

Students:

The number of students who graduated from this school were 225, distributed as follows:

1977	45
1978	No class, lack of budget, conflict both central and regional authoritie
1979	90
1980	90

and the current class includes 96 students. Students are selected to the following procedure.

1. Village requests from provincial authorities the need for having PHCU and express their willingness for establishing the PHCU.
2. Provincial authority allot the number of PHCU to the different communities in need.

3. Team of tutors from the school visit the villages and explain the program, functions and requirements of CHW.
4. Village Council nominate a candidate for the school to become their CHW. At times the village council may nominate more than one candidate for the school - in such cases the tutors will make the final selection. (This has created certain problems at least in one of the villages the team has visited.)

This selection procedure seems to assure community participation as well as the school involvement in the selection process. However, some community leaders (particularly the nomads) expressed interest in having more flexible selection methods. The students interviewed during the visit expressed appreciation of their teaching program and an awareness of the health patterns in their communities. They also felt that they have been prepared to meet the challenge of their careers.

Teaching-Learning Process

The teaching is mainly didactic with some practice in the laboratory on various skills, e.g. injections, medications, temperature, pulse, etc. anc clinical practice in the dispensary under the supervisor of the medical assistant. Teaching is subject-matter oriented where different diseases are presented in lecture followed by discussions. Laboratory work involves observations and practices. Students do not participate in the teaching-learning process. There was no schedule or written program available at the time of the visit.

Audio-visual materials are available in the school through UNICEF and WHO. These include models of the human body (whole and different systems), charts and posters, and the training manual for community health workers. It is important to note that the revised edition of this manual, though it covered more topics and had more illustrations than the first edition, the different objectives of each subject have been omitted. All AV and manuals were kept in the Senior Tutor's Office. There is also available various equipment and drugs in the laboratory for practice.

Facilities:

The school includes two large classrooms, one laboratory, tutor offices, and dormitory facilities. As indicated earlier the school was built for the enrollment of 45 students and the current class is 96. So doubling the capacity will definitely result in overcrowding particularly in the sleeping quarters. It was also observed that there are no facilities for the female community health workers and hence they were accomodated in the village midwives school which caused inconvenience for the community.

B. Village Midwives School:

There is one school for village midwives that was started in 1948. The length of the program is one year. However, the

period of study may extend beyond the year for one of the following reasons:

1. Students may have not had the minimum number of required deliveries, in which case the class will not graduate until all students have finished the requirement

2. Due to transportation problems, students may be coming late - two to three months - to the program.

3. School may be closed for official use of the facilities by regional authorities.

The curriculum has the following sequence:

1. Memory phase in which students are helped to memorize certain information related to pregnancy, labor and delivery and postpartum as well as equipment and drugs used by village midwives

2. Drugs/practice period (role playing) - using models and locally produced equipment and visual material they practice how to conduct a delivery and carryout postpartum visits.

3. Wet practice for the same activities outlined in No. 2 but using actual patients.

4. Hospital practice under supervision of the tutots - each student is required to perform a minimum of five hospital deliveries.

5. Home deliveries under supervision of the tutor - each student is required to perform a minimum of 15 home deliveries.

It was clear that the curriculum is based on the specific tasks to be performed by the village midwives upon graduation and the students are taken through the learning experience in a logical progression. However, it was noted that nothing is being taught in the program about child care, family planning and environmental sanitation.

Tutors:

There are twelve tutors all of whom are experienced health visitors. Some of the tutors have attended courses in maternal and child health and family planning, primary health care and labour

organization. However, none of the tutors have received formal training in teaching methodology and training techniques for the illiterate. The skills they indicated are acquired through apprenticeship. The tutors are involved mainly in the teaching and training of the students in the school, hospitals and community. They do not participate in the selection of the students.

Students:

Students are selected by the community, i.e. village council and sent to the school, through the provincial senior nurse and midwife inspector must approve. There was no record of the number of students graduated, however, the largest class was 80 students and normal classes have 32 students. All students are females, most of them are illiterate while few have had 23 years of schooling.

Teaching-learning process:

Since the students are illiterate or semi-illiterate the teaching depends namely on utilization of all senses of individuals in learning the program. The teaching involves a lot of repetition and demonstration and concentrates on one specific task or item at a given time for a long period of time. Other materials are used, e.g. UNICEF kit as well as one model of fetus and delivery model. Also local visual materials are used effectively.

Facilities:

The school has two classrooms, one office for the Senior Tutor and sleeping facilities for students and tutors. The physical facilities are adequate and very well maintained through the efforts of the students.

C. Medical Assistants School

There is one school in N.K. for medical assistants that was started in 1971. In 1977 the curriculum has gone through revision and the revised curriculum is the one used now. The program is two years with the first year covering anatomy, physiology, public health, forensic medicine, laboratory work, pharmacology and introduction to surgery, medicine and pediatrics. The second year is devoted to clinical work, building skills in selected procedures such as IV incision, circumcision, draining of absesses, management of deliveries as well as theory and practical in special surgery and medicine and preventive medicine. During the second year

students are sent to hospitals, dispensaries and health centers for their clinical practice. Sometimes they do field trips for inspection of water resources, etc. however, such field trips are only organized when transportation is available. The curriculum is approximately 60% practical and 40% theory.

The practical part is not supervised by the school tutors - it follows apprenticeship patterns where the health personnel in the facilities are responsible for student training. It is interesting to note the following:

1. There is no field practice and experience in community and environmental health that will help the medical assistant to provide preventive and promotive health services.

2. There is no preparation in the curriculum to help MA to assume his responsibility as a manager in the dispensary or a supervisor for the community health workers and other staff in the dispensary.

Tutors:

There is only one medical officer who is in charge of the school and participates in the teaching. However, the bulk of the classes are taught by 10 medical consultants and by general practitioners.

Teaching learning process:

Teaching is mainly didactic, with demonstration and observation. There are no libraries and at this time they use arabic books imported from Egypt. UNICEF provided some duplicating machines, overhead projectors and models and charts. However, they have not been used.

2. <u>Continuing Education Activities</u>:

Opportunities for continuing education are available for some of the health personnel and support staff working in N.K. These opportunities could be categorized as follows:

1. Training courses in Khartoum in management, MCH/FP vehicle maintenance.

2. Overseas training in health planning for senior officials in USA.

3. Local training for health visitors, medical assistants and physicians on role of community health worker and primary health care program.

4. Refresher courses for CHW on agriculture, illiteracy training, veterinary medicine as well as update on specific medical conditions such as malaria.

The team found that there is a great interest in all continuing education activities among health workers and almost all people interviewed indicated that they felt the training was beneficial. However, there was no training plan for future activities nor were there any records of the activities carried on at the Regional and district levels. Thus, it was difficult to have a clear picture of the number of courses, numbers of people attending, the specific content of the training program and teaching materials, used and selection procedure of candidates who attend the training courses.

V Career Structure for Primary Health Worker

Community health workers and to a lesser extent medical assistants and village midwives have no career structure. Some of the current employees and students interviewed in various schools indicated dissatisfaction with this situation. At the same time, officials involved in primary health care programs in N.K. expressed concern about this problem.

LOGISTICS

North Kordofan's population of 1,267,000 has 20 health centers, 70 dispensaries, 138 (+9) dressing stations and 225 PHCU's. These health facilities are supported by the provincial hospital, regional laboratory and several district and rural hospitals.

The provincial health budget is divided into 8 parts, of which 2 deal with PHC delivery services (i.e. Provincial HQ budget and PHCP budget) as follows: (data refer to 1981/82)

Item	HQ Budget	PHCP
Drugs	20000	46300
Vaccines	20000	-
Equipment, Instruments	80000	20000
Mech. trans.	43000	7200
Railways	1000	200
Sudan Airways (freight)	700	300
Pest and communications	1000	200

For many items, expenditures are mixed up and actual amounts spent on the PHCP are difficult to determine. Drugs and instruments are purchased from Central Stores. Some equipment may be purchased locally. Little money for repairs, locally carried out, are deductible from this budget.

Supplies and their sources

1 - Drugs and vaccines	C.M.S.	against budget (central trans.)
2 - Equipment and Instruments	C.M.S.	against budget (payment)
3 - Petrol	Province	against budget (M.T.D.)
4 - Kerosene	Province	against budget

Method of Procurement

(1) Drugs: Forms are filled every three months with what is required for three months for all PHC facilities for three months. The form is sent to Central Medical Scores and supplies start to be received in 1+1/2-2 months but are never complete because of shortage of drugs. The drugs are sent either by railway or by lorrie hired from the private sector or by lorries sent specially by the N.K. Health Authority and vaccines by air. The N.K. Health Authority had a representative at the C.H.S. to facilitate receipt and transport of supplies.

(2) Equipment and instrument are also mainly purchased from C.M.S. and cheques are required to be sent with the requisition. Part of the equipment is made locally.

(3) Petrol - The budget which appeared as mechanical transport is available to the mechanical department of the Province which cared for the maintenance of vehicles and their running. The department is responsible for approving petrol requirements for running of vehicles.

(4) Kerosene - important for peripheral units for sterilization and lighting is supplied by the Province authority or district councils or even local councils on payment; when kerosene is available.

Vehicles Involved in PHCP in North Korofan

No.	Type	Source	Condition	Assignment
1	International; Lorry	AID	Out-of-order, engine limited to use within El Obeid	-

1	International; Lorry	AID	Written off	-
1	Toyota Station Wagon	Arab Emirates	Good	Supervisors
1	Chevy Station Wagon	USAID	Out-of-order	-
1	Chevy Station	USAID	ok	Training and Supervisors
4	Toyota Land Cruisers	Arab Emirates	Good	

Storage Facilities

No facility for storage exists in the most peripheral units. In dispensary and H.C. there is always a store room which is the supply source. There are refrigerators for faccines and medicines.

Provincial Stores - made up of 3 large rooms with 2 refrigerators for vaccines. There is very little in the way of drugs.

Staff at the store consist of Regional Storekeeper and under him the provincial storekeeper with some other staff.

The Province Storekeepers do the ordering of drugs on the light of the requisition and consumption of the units on a certain form. He distributes the drugs to the units according to a requisition submitted to him from the units after passing through the PMA who approved the requisition in the light of what is available and the load of work.

There are cards for each item and keeping of cards seems to be ok.

The Provincial Storekeeper received training for three months - Kh. North - and is supervised by the regional storekeeper who is in the same location.

The main problem is shortage of drugs and the complication of having to deal with staff coming to collect the drugs and finding very little.

HEALTH INFORMATION SYSTEM (HIS)

This section of the report was prepared by Dr. Mohammed el Mahdi Balla, a member of the Field Team, who serves as Deputy Director of the Department of Health Statistics and Research, MOH, Khartoum.

Data was obtained through discussions and interviews with the D.G. for Health and Social Services, North Kordofan, Director for Curative Services, North Kordofan; 2 M.A.'s; 2 C.H.W.'s; 2 Statistical Clerks; 1 N.C.H.W.

The following data are grouped in accordance with the question numbers in the "Scope of Work" document.

Q.3.4. Information collected and its accuracy.

a) Information is collected on outpatients in all of the visited PHC units and Dispensaries. Items like name, age, sex, residence and complaints are complete and consistent. The concept of new/old case is confused in one of the units (CHW using the WHO prepared/ UNICEF printed O.P. Register in which the columns of new/old are changed from the Form No. 2). The column for referrals is left blank by one of the CHW.

b) The visitors book is available in all units but no obvious usefulness is demonstrated.

c) Promotive and preventive activities are neither recorded nor are they reported.

d) Birth registration exists when certification is permitted by DOS (at dispensary level and one of the CHW visited). They are incomplete.

e) Deaths are not recorded except when they occur at the facility (which is very rare).

Q.5.6. Training and Supervision

a) Training of the personnel seems to be satisfactory in terms of duration. The content addresses the "Old HIS" which is now undergoing changes at national level but an important fact is apparent, that is the personnel are satisfactorily doing what they are trained to do. Supervision of HIS simply does not exist.

Q.7.8. Analysis and Utilization of Data

Analysis of data is limited to the stage of compilation of

monthly reports and the forwarding of these to the nearest higher level. The only obvious use of these data is the preparation of drug requirements. According to the DGHSW, he is not presently using any of the prepared M.R. or A.R.

Q.9. Two-Way Communication did not exist in any form, but the personnel could easily identify its importance and look forward to it.

Conclusion: The potential for improving the existing HIS is clearly demonstrated by interviewing personnel and inspecting records. More recognition by the DGHSW is required in order that the efforts to be proposed and carried out can have the best outcome.

RECURRENT COSTS OF USAID PROJECT # 650-0011 (NORTHERN SUDAN PRIMARY HEALTH CARE

by R. Barlow North Kordofan Field Team

I. SUMMARY

The Northern Sudan Primary Health Care Project provides for USAID financing of several different activities which can be grouped under the six general headings of technical assistance, training, construction, vehicles, medical supplies, and information systems. Each of these activities may involve recurrent costs in the sense that the facilities or systems put in place with USAID financing may require a continuing flow of expenditures in order to remain effective. If such recurrent costs are significant, there is cause for concern, because the present fiscal situation of the Government of Sudan does not permit the incurring of significant new expenditures. The fiscal situation has been rendered very difficult by such factors as the high costs of servicing Sudan's heavy external indebtedness, the sluggish growth of real output, and the pressures to make large pay increases to government employees.

Our analysis of the six activities supported by USAID suggests that only in the case of vehicles are the activities likely to involve significant recurrent costs for the Ministry of Health (MOH). For vehicles, the annual recurrent costs are estimated as LS 363,595.[1] Three points may be made about this sum. First, it is less than one-half of one percent of total expenditures on health by central and provincial governments in the Sudan in FY 1981-82 (excluding the Southern Region). To that extent, the recurrent costs of the activities supported by USAID do not seem great. Second -- a contrary point -- about three-fourths of the recurrent costs on the vehicles are in the form of foreign exchange, and thus constitute a significant burden in view of the Sudan's ongoing balance-of-payments problems. Third, the recurr costs will not remain at the estimated level much beyond the end of 1983, since many of the vehicles in questions are unlikely to remain in running order much beyond that date.

Each of the six project activities is now considered in turn, with respect to the recurrent costs.

II. TECHNICAL ASSISTANCE

The project has provided expatriate advisers to work with MOH personnel in the areas of community health care organization, information systems, logistical systems, program evaluation. The benefits from these activities consist of organizational char in the primary health care system. It does not seem that these changes have involved significant increases in the volume of resources (manpower, supplies) allocated to th system. Hence, the technical assistance has not added significantly to the recurrent costs borne by MOH.

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1 In this part of the report, all figures in Sudanese pounds and U.S. dollars are in terms of 1982 purchasing power (except where noted).

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III. Training

The project provides for USAID financing of training programs for several categories of MOH personnel:

4 Central Medical Sbores personnel in logistics

14 Driver-mechanics in vehicle maintenance

4,120 Rural health personnel oriented to the Primary Health Care Program (PHC

1,120 Community health workers (CHWs) in continuing medical education

2 MOH staff for Master of Public Health Degrees in biostatistics and medical care organization

12 MOH community physicians in community health skills (3 mos. in USA)

36 Senior Medical Assistants and others in community health, managerial and training skills.

All of these provide for retraining, reorientation and upgrading of existing MOH personnel. The recurrent costs of training activities for existing personnel are principally the salary increments that will be paid to those personnel as a consequenee of their completing the training. Several MOH officials were asked whether the completion of the training programs leads to more rapid promotion and higher salaries. For the short-term programs, like the ten-day orientation courses for rural health personnel, it is obvious that there will be no impact on salaries. Even the lengthier programs, however, were similarly regarded as having no impact on salaries. Hence the training programs do not seem to have affected the level of recurrent costs.

It should be pointed out, however, that if the training activities supported by USAID are not continued in the future, there will be some deterioration in the quality of the PHCP. This is particularly true of the continuing education or refresher courses for CHWs, since each successive cohort of CHWs entering the PHCP needs such courses in order to improve their job performance. Most of the other training activities sponsored by USAID have a "once for all" character, and do not need to be repeated in the near or medium term.

IV. Construction

The project provides for the construction of 15-20 dispensaries in the Kordofan Region (along with houses for the Medical Assistants running these units). The cost of operating the dispensaries includes the salaries of the three persons normally staffing each unit (Medical Assistant, Nurse, Cleaner) and expenses for drugs and other supplies. However, the USAID construction will not add to these recurrent costs of the PHCP, because the USAID buildings will substitute for units which the MOH would have established anyway. There will be an increase in the numbers of dispensaries even in the absence of USAID support, the increase being staffed by new paramedicals routinely graduated from training schools already in existence.

This understanding -- that the USAID support will not lead to any net increase in the number of dispensaries -- is shared both by health officials in El-Obeid and by USAID personnel in Khartoum.

It is likely that the USAID buildings, being more elaborate than the MOH-built dispensaries for which they will substitute, will require higher costs of maintenance (repair, painting). But such maintenance activities will often be provided by the local community, in line with the self-help principles of the PHCP, and will not involve any budgetary expenditures for the MOH.

One difficult question is whether the depreciation of physical facilities should be treated as a recurrent cost. Some USAID analyses of recurrent costs do include depreciation. However, the view of this report is that the spirit of recurrent cost analysis is to estimate the budgetary consequences for an aid recipient of maintaining in working order a facility (for example, a building) provided by a donor. In that spirit, the aid recipient is expected to pay for the operation of the facility, but is not expected to purchase the facility in the first place, nor replace it when it is worn out (such replacement normally being financed by depreciation allowances).

If the contrary view is taken -- that the aid recipient ought to provide for the replacement of donated facilities -- then it is still doubtful that the accumulated depreciation of the USAID buildings would provide a good measure of the replacement cost. It is likely that when these buildings wear out, they will be replaced by simpler structures. These structures are cheaper than those planned by USAID.

If nonetheless a depreciation estimate is needed, an approximate figure would be $5,700 per year for each unit. This assumes a construction cost of about $57,000 per unit, and an average life of ten years.

V. Vehicles

The project has provided the MOH with 26 gasoline-powered Chevrolet Suburban cars and 24 diesel-powered International Harvester trucks at a total capital cost (including some spare parts) of $1.3 million. The recurrent cost of operating these vehicles include the salaries of driver-mechanics, fuel and other expenses.

An average annual salary for a driver-mechanic is LS 771[2]. With one driver for each vehicle, total additional annual salaries are therefore LS 38,550.

The annual fuel consumption of a USAID vehicle being used sufficiently to provid a minimal level of service can be estimated as 1,667 gallon (15,000 miles at 9 miles per gallon, the Chevrolets averaging 10 miles per gallon, and the International Harvesters 8 miles per gallon). The correct price to use in costing this consumption is not obvious. There is a wide range of official and unofficial prices for petrol i the Sudan currently. From the viewpoint of social evaluation, where inputs should be valued at their opportunity costs, the correct price should probably be the world pri

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2 Ministry of Public Services and Managerial Correction, Bureau of Social Affairs, Chapter I: Budgets of Decentralized Governance, 1981-82 (in Arabic).

(plus local distribution costs but excluding local taxes), converted from U.S. dollars to Sudanese pounds at the purchasing-power-parity exchange rate[3]. The world price of vehicle fuel is now about $2 per gallon (and is unlikely to rise much in the near future, given present conditions in the world oil market); the purchasing-power-parity exchange rate is approximated by the free market rate, currently about LS 1.35 for one U.S. dollar. These assumptions imply a fuel price of LS 2.70 per gallon, and total annual fuel costs for the 50 vehicles are, therefore, estimated as LS 225,045.

Other operating costs include oil, lubrication, coolant, and other fluids, insurance, spare parts beyond those provided through USAID, monthly labor charges for repairs. These costs may be roughly estimated as LS 2,000 per vehicle annually, or LS 100,000 for all 50 vehicles.

Combining these costs with the salaries of the driver-mechanics and the fuel costs yields an estimate of LS 363,595 for total annual recurrent costs of the 50 vehicles. Actual recurrent costs may well be much less than this, since many vehicles are operated for much less than the 15,000 miles suggested above as desirable, because of breakdowns, petrol shortages, or other reasons. In April 1982, for example, it was estimated that at least 12 out of the 50 vehicles were out of commission, mostly due to lack of spare parts.

Following the argument presented in the previous section, depreciation has not been included in recurrent costs. If an estimate id desired, a three-year life can be realistically assumed, which in combination with the acquisition cost of $1.3 million implies annual depreciation of about $430,000. The vehicles having been acquired in the latter part of 1980, an average life of three years implies that the recurrent costs of the USAID vehicles will be much diminished in 1984 and subsequently.

VI. MEDICAL SUPPLIES

The dispensaries to be constructed with USAID financing will each be provided with a supply of drugs and medical equipment. Similar kinds of supplies will also be provided to 600 Nomad CHWs. This part of the project is only intended to make a one-shot contribution towards the running costs of the units in question. There is no question here of a long-lasting facility involving recurrent costs which must be borne by the MOH. The MOH is already providing supplies to dispensaries and nomadic PHCUs, and will continue to do so after the USAID supplies are used up.

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3 The logic here is that for petrol or any other internationally traded commodity, it is possible to obtain US dollars for Sudanese pounds at a rate reflecting the purchasing power of the two currencies, and then use the dollars to buy the commodity at the world price (with adjustments for local distribution costs and taxes).

VII. INFORMATION SYSTEMS

The project seeks to extend and improve the system of collecting information needed for the proper management of the PHCP. A system of data collection at the PHCU level has been developed, based on the registration of outpatients, other visitors, births and deaths. The MOH staff responsible for developing the new system are fully aware of potential problems of recurrent costs, and so have devised arrangements which do not involve any additions to the number of statistical clerks and other relevant personnel.

A possible element of recurrent costs consists of new data forms which will be printed partly at USAID expense. It is expected, however, that the supply of new forms will last for several years.

APPENDIX E (3)

REPORT OF THE FIELD TEAM TO UPPER NILE PROVINCE

26 March - 2 April 1982

Submitted by:

Mr. A.G.T. Carter, UNICEF (Khartoum) (Team Leader)
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PRIMARY HEALTH CARE PROGRAMME - JOINT EVALUATION MISSION

REPORT OF THE UPPER NILE PROVINCE FILED TEAM

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PRIMARY HEALTH CARE PROGRAMME JOINT EVALUATION MISSION

REPORT OF THE UPPER NILE PROVINCE FIELD TEAM

1. Introduction

1.1 Team Members

Dr. A.G.T. Carter, UNICEF (Khartoum) (Team Leader)
Dr. J.S. Nyanzi, AMREF (Nairobi)
Mr. M. Taban, PHC Programme (Juba)
Mr. M. Campbell, AMREF (Juba)

1.2 Timetable

The team arrived in Malakal by air from Khartoum on Friday, March 26, 1982, having been delayed by 24 hours because of a sandstorm. Preliminary discussions were held that day with the Acting A/Commissioner for Health, Dr. Mathew Atem, and other officials at Provincial Health Headquarters, and also with Mr. Leo Siliamaa, the Director of Lutheran World Service (LWS) in Malakal. The team stayed at the Egyptian Irrigation Project Resthouse for one night and at the LWS Resthouse thereafter.

On Saturday, 27th, the team visited the Dispensary and CHW Training School at Dolieb Hill to the East of Malakal, and the PHC Units nearby at Nagdiar and Ogod.

On Monday, 29th, interviews were continued at Provincial HQ, and among those interviewed were CHW's from Toinding and Wunilong.

On Tuesday, 30th, the team crossed to the West bank of the Nile and visited the District Hospital at Kodok, the Dispensary at Lul, PHC facilities at Akwabanyo and Gulbanyo, and a Dressing Station at WAU. Both the PHC Unit at Akwabanyo and the Dressing Station were shut at the time of the visit, and the PHC Unit at Bulbanyo is not yet built - but the CHW were present.

On Wednesday, 31st, the main interviews with HQ officials were completed ending in the evening with a long meeting with the PHC Inspector. As the A/Commissioner had not returned from Khartoum the team also met with the PHC accountant and the Senior Staff Clerk in order to obtain information on financial and administrative matters.

Thursday, 1st April, was spent in drafting the report and short visits to the Headquarters and the Provincial Hospital to tie-up loose ends.

On Friday, 2nd April, after a brief visit to Headquarters, the team flew back to Khartoum.

2. Background Information

2.1 Geography of Upper Nile Province (UNP)

UNP has a population of about 833,000 and covers an area of roughly 120,000 kilometers. The land is very flat, and is mainly grassland with scattered trees; the soil is typically black cotton soil which is brickhard during the dry season but during the rains quickly becomes boggy and impassable for all types of vehicles. The rains begin in late April or May and continue until October; even thereafter, however, much of the land remains waterlogged and it is not until February that all the routes have become sufficiently dry to permit travel throughout the Province. From June to October the monthly mean maximum temperatures in Malakal are between 30° and 40°C. The monthly mean minimum temperatures all fall between 18° and 24°C.

The people of NNP are Shilluk, Dinka, and Nuer. The Shilluk are a more settled people with a tradition of sorghum cultivation. The Dinka and Nuer are cattle-owners who value their herds highly; many are semi-nomadic who stay in their permanent villages during the wet season but move with their cattle to lands along the rivers during the dry season. Sorghum (dura) is the staple food in UNP and large quantities are grown especially in the Northern area.

Isolation and poor communications are a major problem for PHC work. Malakal, the provincial capital, is 600 km by road from Juba and 755 km from Khartoum.

During the rainy season river and air transport are the only possible means of transportation.

2.2 Development of PHC in UNP

Work began in 1976 with the selection of two Medical Assistants (MA's) to become tutors for the CHW training school and the initial sites for PHC Units were selected following a survey of the Province and discussions with community leaders. Selection and training of the first batch of CHW's started in 1977 and the construction of the first PHC Units with the help of NGO's was begun.

In 1978/79 training of the first batch of CHW's was completed and they began work in their villages and a second batch began training. To support this work a PHC Inspector was appointed and four vehicles were supplied by AMREF. UNICEF supported the programme with drugs and equipment and subsequently supplied two vehicles including a lorry for the collection and distribution of drugs; other NGO's also provided assistance.

The third batch of CHW's completed training in 1980 but since then the training school has not functioned. In all 33 CHW's are now trained and in the field.

2.3 Participation of NGO's in PHC

As Missionaries arrived they tended to disburse throughout the Province. This led to the general belief that they had been allocated special areas which in turn hardened into fact. Thus the Catholics were apparently restricted to the West bank of the Nile and the Protestants to the East bank. (Moslems are reported to have been allowed to go anywhere), and an appearance of competition between the sects developed. In 1963 all missionaries were expelled from the South and when they were permitted to return, in 1973, they tended to return to their previous areas of activity. Thus, while missionary groups are not assigned specific and exclusive areas, their dispersal tends to give this impression.

The Lutheran World Service is a prominent NGO working in the Province. The LWS headquarters is in Malakal and it is actively supporting the government's primary health care programme. During 1981, LWS assisted 21 PHC

Units by providing medicines for some, offering supervision and supplying furniture; nine units were supplied regularly with drugs. Attendance at LWS supervised and assisted PHC Units ranged from 3,600-8,400 patients per year, and the total was approximately 100,000 patients in 1981. LWS is helping to establish MCH services at Dolieb Hill and Lul, and two MCH workers have been trained. LWS also sponsored demonstration gardens and promotes integrated development schemes; it no longer builds PHC Units.

Sudan Aid supervises a PHC Unit at Awachi. The Sudan Interior Mission is based at Melut and works in that area. It provides drugs for PHC Units and has constructed four units. The Sudan Council of Churches works in and around the Bentiu area and is actively promoting PHC.

The logistical support provided by NGO's is a very positive force in the promotion and running of PHC services in the Provinces. The LWS has, however, so far been unable to train a counterpart for its very active Health Extension Officer and this indicates a possible drawback in the future.

3. Managerial System

3.1 Structure

The following is a list of the people/units who report directly to the A/Commissioner:

(1) Senior Medical Officer, Provincial Hospital (7 doctors, radiographer, etc.)
(2) District hospitals (6 hospitals, 2 doctors, one currently in Malakal)
(3) Chinese Medical Team (4 specialists plus cook and translator)
(4) Senior Public Health Inspector (Public Health Inspector, Sanitary Overseers, etc.)
(5) Provincial Medical Assistant (Medical Assistants and Dispensary Nurses)
(6) Primary Health Care Inspector (CHW's and Training School
(7) Provincial Village Midwife (Village Midwives and training school)
(8) Senior Accountant

(9) Provincial Storekeeper
(10) Senior Staff Clerk
(11) Senior Driver

It was not easy to determine this list both because the A/Commissioner was absent and because when asked to whom they were responsible for their supervisors many people replied "A/Commissioner"; however, the list is now thought to be accurate and its essential feature is obviously its length.

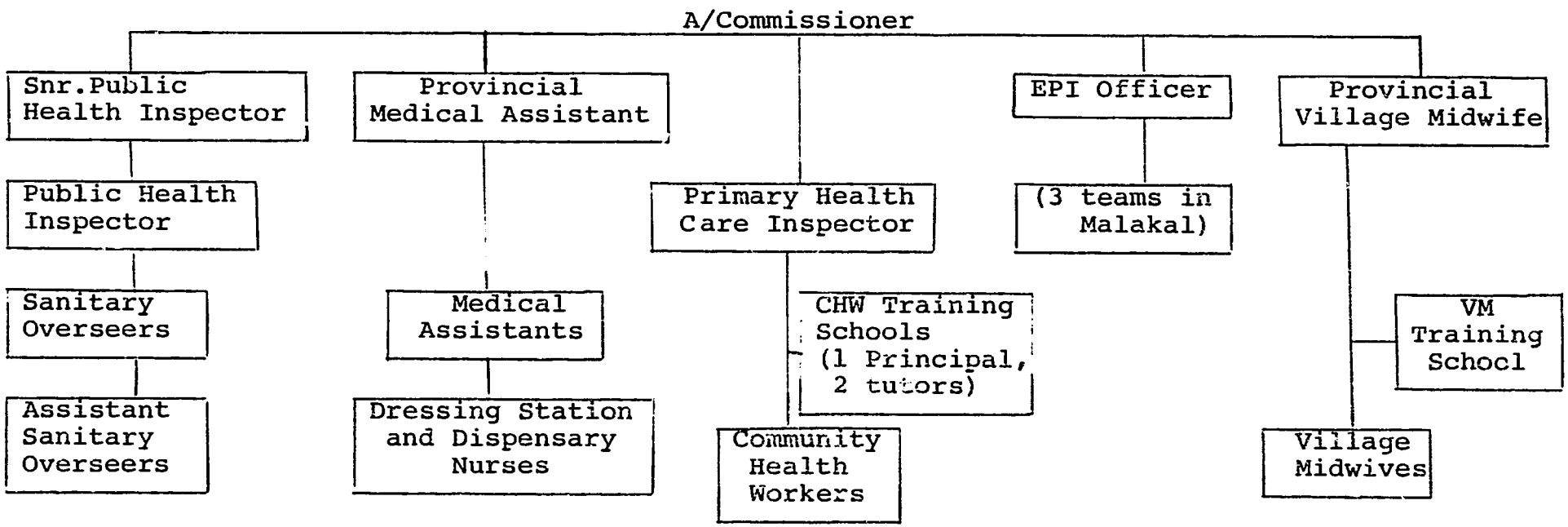
The structure of the primary health care elements of the system is shown in Figure 1 which clearly shows the high degree of vertical separation right up to the level of A/Commissioner. The CHW's are both in theory, and we found in practice, almost completely separated from the MA's and all other workers. The only lines between CHW's and the other units (Dispensaries or District Hospitals) are the referrals and these are relatively few. Otherwise for all aspects of supervision and management, including collection of salary, obtaining drugs, and returning monthly reports, the CHW's deal directly with the PHC Inspector in Malakal. This situation is modified to some extent by the role of the NGO's which provides assistance with drugs, drug distribution and supervision in some cases, in cooperation with the PHC Inspector.

The MA's are directly responsible to the Provincial Medical Assistant (PMA), that is, they have their own separate line of command with the result that it is impossible to effect the concept of the "complex" structure. The PMA and the PHC Inspector obviously cooperate well on a personal basis but this does not bring together their subordinates.

Other aspects of primary health care, such as EPI, environmental sanitation, village midwives, are also all separated from the CHW's and from each other. The result is that whilst the idea of primary health care would seem to have been accepted in theory, in practice it does not yet form a well integrated part of the health care sturcture in UNP.

Figure 1

STRUCTURE OF PHC IN UPPER NILE PROVINCES



3.2 Priority and Resource Allocation

In the absence of the A/Commissioner the team could only evaluate a number of indicators to determine the level of priority attached to the PHC Programme: the conclusion is that this priority is relatively low.

One indicator is that both the CHW's training school and the Village Midwives training school have been closed for two years; the basic excuse being that funds for food have not been available. While funds overall are obviously short, the inability to identify sufficient for these needs indicates the low level of importance attached to these activities.

Another indicator is that the supply of both transport and fuel for PHC purposes have also been very limited. Whilst there is admittedly a chronic shortage of these items in the Province it does seem that PHC work has not even received its allocated supply. At the time of the team's visit only four out of the six vehicles allocated were in the Province, and two of these were unfit for use. (This analysis excludes the original three vehicles provided in 1977 by the government, the condition and/or whereabouts of which were not immediately determinable.)

The information system is dealt with in detail elsewhere, but it can be noted here that it provides no information to guide the management of the PHC Programme and there are no signs that the managers have been taking any steps to rectify this situation.

3.3 Managerial Experience

The lack of resources, low level of priority, and absence of information, are exacerbated by inadequate managerial capability. Much of the system is operated by officers with medical training who have had little or no managerial training. The result is that despite an encouraging enthusiasm at the middle level even those limited resources of equipment and drugs which are available at the provincial level are not always distributed to the CHW's or other frontline health workers.

3.4 Summary

The structure of the health service inhibits an

integrated primary health care system; the lack of priority allotted to the PHC Programme and the low level of managerial expertise reduces the effective resource allocation to the CHW's to such an extent as to make it impossible for them to provide proper care for their communities.

4. Community Participation

The existence of a tradition of respected chiefs and strong tribal loyalties in the area, together with the recent system of SSU and other committees, form a solid basis for cohesive action. The customary support provided by family and neighbors in times of happiness and sorrow, without expectation of reward, and the loose structuring of the usual work routines, creates a resource for self-help which if properly tapped can have a big effect on the PHC Programme.

However, in UNP, a number of factors in the recent history of the Province have to some extent negated these customary strengths: both the government and the NGO's have in the past provided things free of charge to the people; the Anyanyas, during the period of civil disaffection, insisted upon the villages providing goods and services free of charge, so requests by strangers (i.e. by those from outside the immediate tribal areas) are looked upon with some distrust; and the generally low standard of living encourages the villagers to conserve their energies to provide for their individual satisfactions.

Given these factors it is now clear that the sensitization of the communities to the basic concepts of primary health care has been insufficient. In particular the ideas of self-help have not been properly promoted - to such an extent that the suggestion to the villagers that they should build a "tukal" for the PHC Unit is frequently met with the attitude that "we pay taxes, so the government should built it for us".

In some cases the village Chief has provided substantially for the construction of the PHC Unit, but there is a real danger here that, even with the best of motives, this undermines the feelings of community ownership of the unit (especially since the Chiefs play a leading role in the selection of the persons to be trained as CHW's, although we had no evidence that they are overly assertive).

In the same way the role of the NGO's, essential as it is to the present functioning of the PHC Units in UNP, needs to be carefully evaluated for its long-term effects. It seems that they are aware of this - at least the LWS who have now ceased to build PHC Units.

In addition, PHC is not accepted by all sectors of the community: the plans set forth in the 'green book' and 'brown book' were apparently written by top executives in the Ministry without much involvement of the lower levels and the courses for doctors and MA's do not include PHC as a major topic. The result is that it seems that many people within the MOH neither understand nor appreciate its objectives.

Finally there was no evidence of inter-sectoral participation, at the official level, in the PHC Programme and the team found no village with a Village Health Committee (although it was claimed that health matters were discussed in meetings of the Village Development Committees).

5. Coverage Accessibility and Availability

5.1 Population

There are 33 CHW's in UNP, in addition there are 25 Dressing Stations and 24 Dispensaries, a total of 82 units.

The population of UNP is estimated at about 883,000 of which nearly 5% were urban dwellers in 1973; so assuming that 10% are urban or peri-urban now, that leaves 795,000 to be served by the 82 units.

The original plan was for each PHC Unit to serve 4,000 people: if there were possible then the 33 CHW's could currently be serving 17% of the rural population. The 82 units would (at 4,000 each) be serving 41% of the rural population.

None of the CHW's or MA's had any idea of how many people they were serving but it is unlikely that it was more than 2,000 on average; thus the percentage with access to health services would be 8% to CHW's and 21% overall.

In view of the time spent by most CHW's away from their units in Malakal getting salaries or drugs (and the team gained the impression that some of them anyway may not be too

concerned to hurry back to their villages) the availability of services is certainly significantly less than the accessbility. If one were to allow for the non-availability of drugs the level would fall even further. (One problem here is how to define availability of drugs: apparently throughout UNP everybody wants injections, not tablets, so the availability of desired drugs is different from that of suitable drugs).

5.2 Units

According to the 'Green Book', 196 PHC Units should exist in "Upper Nile plus Jonglei" in 1984; in proportion to the 1973 population this means a total of 125 for UNP. Similarly a total of 25 dispensaries were planned. Comparison with the 33 PHC Units and the 23 dispensaries at present in existence show that the creation of PHC Units is behind schedule. Each of the 25 Dressing Stations are included in the total and the total is still behind the five-seventh (i.e. 89) which should be completed by mid-1982. In fact the current plan provides for only a further 24 PHC Units of which no more than a few will be converted Dressing Stations. Given the present situation of funds and training, 20 would seem to be a maximum which could be achieved by mid-1983 and a further 20 by mid-1984; i.e..a total of 73 which compares with the target of 125. Some Dressing Stations (perhaps a dozen) might still exist.

On the other hand the number of dispensaries has nearly reached the target of 25 set in the 'green book' for 1984.

5.3 Trained CHW's

If 40 CHW's can be trained in the next two years this will bring the total to 73, i.e. only about 60% of the planned level..

6. Health Personnel

6.1 Numbers

The principal front-line health workers currently number as follows:

Medical Assistants	25	
Nursing Dispensaries Dressing Stations	72	(approximately)
CHW's	33	
	130	

This is equivalent to nearly 1:6000 of the population, and given the limitations of the health services in the area this is encouraging. It should be noted that no Village Midwives have been included as they virtually all live and work in the towns.

However, due to lack of supervision, drugs, equipment, and to some extent suitable training, the services to the community undoubtedly fall well below what might be expected; this is particularly true in the preventive and promotive fields.

All CHW's trained so far have been male, but providing suitable accommodations for female students can be provided at the CHW Training School. The PHC Inspector and the School's Principal both felt that women could be trained and that they would be readily accepted by the communities.

6.2 Numbers Being Trained

Whilst the number of MA's being trained is probably adequate, the position regarding CHW's and Village Midwives is far from satisfactory as two years have been lost with no one trained. The Village Midwives School is in a very dilapidated state and apparently will soon collapse.

6.3 Training

The training of the Villege Midwives is generally good. The training of the MA's is relevant but it should be broadened to encompass PHC and provide some simple management training so that they can play their proper part in the running of a complex.

There is an effective training program for CHW tutors at the Regional Level.

The training of the CHW's is however open to a good deal of criticism. In general the team felt that it was too long and too academic, i.e. more practical training should be provided particularly in the preventive and promotive aspects. In addition, the team thought that by insisting (in theory) on at least six years of education and in practice selecting the most highly qualified candidate among those put forward by the village, some good talent was being missed, although they were divided as to whether a reduction in the education level should be preceded by a simplification of the duties expected of the CHW. It was noted that most CHW's have no manuals; it was agreed that especially in view of the language problems all students should retain the manual which they use in school when they go to their communities and they should be encouraged to make notes in them in their own local dialects (names of diseases, etc.). It was also noted that the size of the Province means that some CHW's train a very long way from their communities: one member of the team suggested that short training courses (perhaps at schools during vacations) nearer to their home areas would be sufficient and would avoid alienating CHW's from their village communities. Training in the information system (especially births and death registers) is apparently totally inadequate to meet the fairly complex requirements of the present system.

6.4 Selection of CHW's

The PHC Inspector and Principal of the Training School discuss the selection of the CHW with the village community: they ask the villages to provide two or three candidates who should be literate (preferably having completed primary schooling) and over 25 years of age (preferably over 30) and married. They then return later to interview the candidates and they make the final choice.

The system seems to be good and likely to maximize acceptability by the community; the team had some doubts however as to whether the final choice should not be left to the village.

6.5 Deployment of Health Workers

CHW's return to their communities and deployment of nurses and MA's (who seem to be entirely males) presents no problems. Village Midwives however are normally married to husbands in the towns so cannot be posted into the rural areas. They do however apparently provide a service the the

peri-urban areas.

6.6 Supervision

Due to communication problems and inadequate managerial training at all levels there is a severe lack of supervision especially of the workers in the more remote rural areas. The NGO's provide some supervision.

6.7 Continuing Education

Refresher courses are provided and a Newsletter is planned. These with proper supervision would be adequate.

7. Logistics

7.1 Supply Chain

Drugs and medical supplies for PHC Units and Dispensaries come from three sources: the Central Medical Stores in Khartoum, UNICEF, and other non-governmental organizations (NGO's).

(1) Central Medical Stores, Khartoum

Twice yearly the Senior Storekeeper in Malakal fills requisition forms ordering a 6-month supply of drugs for the 48 dispensaries (urban and rural) and 33 PHC Units served by his store. The standard list of drugs is not taken into consideration when ordering. Calculations of supply are based on a monthly consumption figure supplied by the A/Commissioner's office. Delivery time from Khartoum usually exceeds 6 months. Some of the drugs ordered in June, 1981, were received in February, 1982; a lorry load of copper sulphate was received on 1st April but the rest of the drugs are still awaited. Orders are almost never completely filled by Khartoum either in quantity or types of drugs ordered. The CMS takes considerable liberty in substituting one drug for another and sometimes apparently simply sends whatever is in stock without regard to what was requested.

When supplies are received a distribution plan is drawn-up by the A/Commissioner's office and those to be supplied are notified to come to Malakal to collect their allotment. The distribution plan is usually an even parcelling-out among the units of what was received.

Those collecting the drugs have to provide the transport and the CHW's frequently have to pay their own fares.

(2) UNICEF

UNICEF supplies kits of drugs for Dispensaries and PHC Units. Each kit consists of one or more sealed cartons containing six months supply of drugs for Dispensaries and three months supply for PHC Units. These kits are dispatched from PHC Stores in Juba and consigned to the A/Commissioners for distribution. Thirty-two kits for PHC Units were received in Malakal on 24th March, 1982; this was the first supply to UNP in over a year. The PHC Inspector has drawn up a plan for distribution and has asked the Lutheran World Services, the Sudan Interior Mission, and the Sudan Council of Churches to assist with their transportation.

(3) Other NGO's

The Lutheran World Service (LWS) supplies drugs directly to certain PHC Units and Dispensaries within its area of concentrated assistance around Malakal. PHC Units receive drugs every two months and dispensaries every six months.

When the Provincial Medical Store has exhausted its supply, the PHC Inspector may ask the LWS to supply the PHC Units if the need arises.

Sudan Aid supply drugs to the PHC Unit at Owachi.

7.2 Provincial Stores

There are two storage areas for PHC Programme drugs and supplies. One is located in the basement area of the Provincial Hospital in Malakal; it measures about 7m x 8m and is less than 2m high. Aside from its very limited space, this store is not satisfactory because it floods regularly during the rainy season, when a pump has to be brought from the LWS Workshop to pump it out. This store is not clean and is filled with broken instruments, spoiled and out-of-date medicines, and rubbish; there are signs of rats.

The second storage area is in a warehouse which measures approximately 20m x 4m and is leased for LS 136 per month. It is of brick construction, plastered with cement and has a

cement floor. There are two sliding doors along the West wall and four vents in the East wall. The building is in need of repair as there are several large cracks through the walls and along the floor and one corner has separated from the rest of the building. It is not bat or rodent proof. The store contains old tires, bicycles, automobile parts and furniture, as well as medicines and medical supplies. There is no order to the arrangement of goods and many cases of medicine have been opened and their contents spilled on the floor. This place is very dirty; there are signs of rats.

The Senior Storekeeper has had two years of training; he is experienced and has trained assistants. The Storekeeper maintains a ledger for receipts but the stock cards are not kept up-to-date and the inventory is difficult to determine.

CHW's and Medical Assistants usually collect drugs and supplies in person from the Storekeeper after having their requisition form approved by the PHC Inspector and PMA, respectively. Usually the store does not contain all the medicines requested, so the Storekeeper adjusts the type and/or quantity of drugs requested when filling the order.

A lack of supervision is evident.

The community is not involved in the storage or transport of drugs.

7.3 Vehicles

UNICEF has donated one Bedford lorry for use by the PHC Programme in UNP, and one landrover for the Midwifery School. In addition AMREF donated one landrover stationwagon for supervision, one landrover pick-up for supply, one landrover stationwagon for the CHW Training School, and one landrover pick-up for EPI.

There is no transport at Provincial Headquarters and no log-books or other records are kept of vehicle use and maintenance. There is clearly a lack of proper supervision of vehicles and there is apparently a substantial level of misuse. There are eleven new bicycles for CHW's in the provincial store which have never been distributed because some parts are missing.

As it is impossible to travel by road for much of the year because of the rains and since a substantial proportion

of the health units are situated on or very near to the main rivers, a boat to carry supplies and supervisors would be very helpful.

Spare parts for vehicles are budgeted for and repairs and maintenance facilities are provided by the Mechancial Transport Department; however, the service is very protracted and not satisfactory.

8. Costs

8.1 Budgetary System

The Regional budget for the PHC Programme is compiled in Juba on the basis of a questionnaire form (Form 4) completed by each Provincial Health Office (in theory, in practice the form is not always returned). PHC funds come to the A/Commissioner's account from the Regional Ministry of Health in Juba. (Funds for other provincial health care salaries and services are set from the Regional Ministry of Finance, Juba, to the Provincial Commissioner who in turn passes them to the A/Commissioner for Health).

8.2 Community Costs

Each community is required to erect a "tukal" for the PHC Unit (the value of which is estimated at between LS50-120) and provide for its maintenance. In addition a contribution of 5 piasters is usually required from patients when injections are given to cover the cost of charcoal for sterilization. No other charges are levied nor was there any evidence of a collection box system.

8.3 Actual Expenditure: UNP, and PHC Programme

Period	Salaries (Chapter I)	Services (Chapter II)
1980-1981	LS 26,748	LS 1,145
1981-82 to date	LS 18,943	LS 679

8.4 Expenditure on Transport of Drugs to Malakal (All Health Programmes)

	Transport
1980-1981	LS 48,200
1981-1982 to date	LS 5,340

9. Health Information System

Upper Nile Province (HIS)

Five CHW's were interviewed, but of these two were away from their PCH Unit and one had no no unit although he had formerly worked from an Education Ministry Building.

All five kept a daily outpatients register (or claimed to have done so) and three kept a visitors book; none kept any other registers, except one who kept a list of births in an exercise book. The contents of the daily registers were apparently correct and complete except for recorded referrals and one did not indicate "new or old" cases. The three CHW's with Units said that they had submitted monthly reports for February 1982, but none had copies, and the other two claimed that they used to submit reports regularly. None of their forms for any month of 1982 could, however, be located at the Statistical Unit.* One CHW said that he gave his reports to the LWS Health Extension Officer but she said that she had not received them.

Two MA's were interviewed in this dispensary. Both kept daily outpatients registers but they only recorded new cases (i.e. patients returning for treatment on subsequent days were not recorded for those visits). One MA recorded full details but the other only name, complaint, and disease as he had no proper forms. One MA said that he had sent in his monthly report for February 1982, and the others for December 1981; neither kept copies, and their forms could not be located at the Statistical Unit.* Both issued Birth and Death Certificates on demand but kept no registers. They had Visitors Registers, but not Promotive Activities Registers.

The CHW's forms are passed to the PHC Inspector and the MA's forms to the PMA; these officers in turn pass them to the Statistical Unit at the Provincial Hospital. (There is no statistical unit at the Provincial Health Headquarters). Neither the PHC Inspector, the PMA, nor the Statistical Unit keep any record on which forms have been received. In the Statistical Unit there is no filing system for the forms. Although it was said that annual summaries of the PHC Unit forms for 1979 and 1980 had been prepared, no copies were

*Where, however, there is no filing system.

available. A monthly summary for September 1981 for all 82 frontline units (dispensaries, dressing stations, and PHC Units) was on file. It showed a grand total of 440 cases of malaria which indicates that the record was very far from complete.

In all it must be concluded that there is no effective health information system for primary health care facilities in Upper Nile Province. There was strong evidence of insufficient training, especially among the Statistical Office personnel, a lack of supervision and a general absence of concern for statistics.

10. Achievements and Constraints of the PHC Programme

10.1 Achievements

(1) The establishment of 33 PHC Units with trained CHW's.
(2) The establishment of a CHW Training School and a Village Midwives Training School and training programmes.
(3) An increasing awareness and acceptability by communities of PHC.
(4) Some degree of community participation.
(5) Adequate manpower at the Provincial level.

10.2 (Constraints

(1) Shortage and/or misuse of available resources of cash, drugs, fuel and vehicles, and vehicle maintenance.
(2) Logistical problems due to geographical and climatic factors.
(3) The low priority afforded to PHC in the allocation of Provincial Health resources.
(4) A non-integrated structure and a lack of coordination between the various parts of the system.
(5) No efficient information system.
(6) A lack of decentralization for the distribution of salaries and drugs.
(7) The lack of attention given by CHW's to preventive/promotive activities.
(8) Inadequate supervision resulting from inadequate managerial training and the low priority given to the supply of adequate resources.
(9) A lack of reference manuals for CHW's.

(10) The failure to distribute tools and bicycles from store to the CHW's.

11. Recommendations

(1) The increase and better utilization of resources for the PHC Programme.
(2) The concept of PHC should be given the widest possible publicity in order to sensitize the community and medical personnel to its basic concept with especial stress on the self-help and preventive/promotive components.
(3) Adjustments to the structure so as to implement the 'complex' concept and improve the distribution of salaries and materials.
(4) The provision of a boat for use in the rainy season and the proper deployment and control of all transport.
(5) More integration with other sectors (agriculture, education, veterinary services, community development).
(6) The establishment of a simple and workable health information system.
(7) Improved managerial training.
(8) The provision of manuals for all CHW's.
(9) The distribution of tools and bicycles to CHW's.
(10) The building of a Provincial Medical Store and a Village Mid wifery Training School.
(11) A review of the procurement and distribution of drugs for PHC from the Central Medical Store and the distribution of UNICEF drugs.

12. Acknowledgements

The team gratefully acknowledges the assistance of the Provincial Commissioner of UNP, H.E. Colonel Peter Mobil Riak, and the Acting A/Commissioner for Health, Dr. Mathew Atem, together with all his staff at the Provincial Health Headquarters and elsewhere in the Province. Our especial thanks go to the PHC Inspector, Mr. Peter Awal Ajal who uncomplainingly gave us so much of his time, both within and outside office hours, to Mr. Mathew Dau, the Principal of the CHW Training Schoo, and to our driver, Mr. Ajoh Deng.

We are also very grateful to Mr. Leo Siliamaa, the Director of Lutheran World Services, Sudan, in Malakal and his staff for their hospitality and assistance.

UPPER NILE PROVINCES

Persons Formally Interviewed

Officials

Dr. James	Medical Officer, Bentin Hospital
Mr. Pasquele Nyawelo	Provincial Medical Assistant, Malakal (Province Health HQ)
Mr. Peter Awol Ajal	PHC Inspector, Malakal
Mr. Samuel Oyath	EPI Operations Officer, Malakal
Mr. Mathew Dan Guol	Principal Tutor, CHM Training School, Dolieb Hill
Ms. Fatima Ajale	Health Visitor, Malakal
Mr. Phillip Monytung	Medical Assistant, Kodoh Hospital
Mr. Erinato Obuti	Medical Assistant, Dolieb Hill Dispensary
Mr. Bernado Luizi	Medical Assistant, Lul Dispensary
Mr. Joseph Lek	Sanitary Overseer, Kodoh Hospital
Mr. Victor Leju	Accountant, Malakal
Mr. Albert Dale	Head Clerk, Malakal
Mr. Cornelius Akwech	Storekeeper, Malakal
Mr. Raphael Adwek Chol	Senior Statistical Clerk, Kodoh Hospital
Mr. John Acwanyo	Statistical Clerk, Malakal Hospital
Mr. Simon Mayile	CHW, Nagdiar
Mr. Peter C.	CHW, Ogod
Mr. James Bol	CHW, Yoinding
Mr. Jeremia Orfak	CHW, Wililong
Mr. Abdulia	CHW, Galbanyo
Ms. Achol Aweyker	Village Midwife, Kodoh

Community

Mr. Kwany Reth Okech	Paramount Chief, Nagdier
Mr. Oter Keny	Villager, Nagdier
Mr. Adwok Obey	Villager, Nagdier
Mr. Nyagos Ajang	Villager, Nagdier
Mr. Peter Yor	Villager, Galbanyo

UPPER NILE PROVINCE

Other Persons Met

H.E. Col. Peter Mobil Riak	Commissioner, UNP
Dr. Mathew Atem	Gynecologist, (Acting A/Commissioner) Malakal Hospital
Mr. Daniel Lobochoh	Senior Public Health Inspector, Malakal
Mr. Theodor Kustraw Luka	Senior Statistical Clerk, Malakal Hospital
Sister Bernadita	Sister, Malakal Hospital
Mr. Leo Siliamaa	Director, Lutheran World Service, Sudan, Malakal
Ms. Liisa Heikura	Health Extension Officer, LWS, Malakal
Mr. Michael O'Brien	Community Development Officer, LWS, Nadier
Ms. Justine Kasente	Admin. Secretary, LWS, Malakal
Ms. Mary	MCH Nurse (LWS) Dolieb Hill
Ms. Bianca Rosa	MCH Nurse (LWS) Lul
Sister Barbara	Mission Worker, Lul
Sister Flora Masiko	Mission Worker, Lul

UPPER NILE PROVINCE

Institutions Visited

Health Units

Provincial Health Headquarters, Malakal

Hospitals: Malakal

Kodho

Training Schools: CWH, Dolieb Hill

Village Midwives, Malakal

EPI Unit: Malakal

Dispensaries: Dolieb Hill

Medical Stores: Malakal Hospital

Dressing Station: Wau (not open)

Primary Health Care Units: Nagdier

Ogod

Akwabanyo (not open)

MCH Units (LWS): Dolieb Hill
Lul

Other Units

Provincial Headquarters, Malakal

Lutheran World Service, Malakal

Sacred Heart Mission, Lul

APPENDIX E(4)

REPORT OF THE FIELD TEAM TO BAHR EL GHAZAL PROVINCE

24 March - 1 April 1982

Submitted by:

Dr. A. Deria, WHO (Team Leader)
Dr. P. Marial, MOH
Catherine Beckley, UNICEF
Daniel Marwa, AMREF

I. Introduction

A. Team Members

The team consisted of the following:

1. Dr. A. Deris, WHO (Team Leader)
2. Dr. P. Marial, MOH
3. Catherine Beckley, UNICEF
4. Daniel Marwa, AMREF

B. Itinerary

The team left Khartoum for Juba by UNICEF plane on 24 March, 1982. After a night stop in Juba, the team proceeded to Wau, Bahr El Ghazal Province on 25 March, 1982 by UNICEF. At Wau, the team was met by the Provincial Commissioner, H.E. Col. Alfred Deng Aluk and other Senior Provincial Staff. The team had a brief meeting with H.E. the Commissioner regarding the purpose and objectives of the team's visit to Bahr El Ghazal Province. After the brief meeting with H.E. the Provincial Commissioner, the team was taken to the While Nile Brewery Factory Guest House for accommodations. The team returned to Khartoum on 1 April, 1982.

C. Plan of Work

The team adopted the following method for the evaluation inquiry:

1. Observations
2. Interviews
3. Inspection of Records

Out of the five working days (including the day of arrival, 25 March, 1982) two days were spent in the field visiting Complex Dispensaries and Primary Health Care Units (PHCUs). The other three days were spent in and around Wau Town interviewing health officials, visiting health care facilities and health personnel training institutions. The number of persons seen and interviewed and the number of training institutions and health care facilities visited are listed in D and E below.

D. Number of Persons Seen/Interviewed

1. Commissioner of B.G.P.

2. Acting Executive Director
3. UNICEF Representative
4. German Leprosy Relief Association
5. PHC Liaison Officer

Number and Type of Persons Interviewed

1.	Assistant Commissioner of Health	1
2.	Chief Public Health Inspector	1
3.	Provincial Medical Assistant	1
4.	Inspector of Primary Health Care	1
5.	Senior Medical Assistants	1
6.	EPI Province Operations Officer	1
7.	Health Visitors/Tutors	3
8.	Provincial VMW Supervisor	1
9.	CHW Tutors	2
10.	Provincial PHC Storekeeper	1
11.	Sanitary Overseers	2
12.	Statistical Clerks	3
13.	Laboratory Medical Assistant	1
14.	Opthalmic MA	1
15.	Complex MAs	1
16.	Certificated Nurse in Complex Dispensary	1
17.	Community Health Workers	4
18.	Village Midwives (VMWs)	6
19.	TBAs	7
20.	Traditional Healers	2
21.	Chiefs/Subchiefs	1
22.	SSU Secretaries	2
23.	School Teachers	2
24.	School Director	1
25.	Ordinary Community Members	10

E. Number and Type of Institutions

1. Training Institutions

1.1	CHW Training School	1
1.2	VMW Training School	1

2. Health Care Facilities

2.1	Health Center	1
2.2	Complex Dispensaries	2
2.3	PHCUs	4

II. BAHR EL GHAZAL PROVINCE: BACKGROUND INFORMATION

A. Georgraphy

Bahr El Ghazal is one of the six provinces of the Southern Region of the Sudan. The province is located in the Northwestern part of the Southern Region. It shares borders with the Central African Republic to the West, Southern Darfur and Southern Kordofan Provinces to the North, Upper Nile and Lakes Provinces to the East and Western Equatoria Province to the South. The province covers an area of 134,576 sq. km. The vegetation is mainly of the Savanah type with two seasons, the rainy and dry seasons - the rainy season being from late March to early November. The climate is tropical, generally hot and humid.

B. Administrative Divisions

Administratively, the Province is divided into four Districts, and the Districts are further divided into Councils of which there are two Town Councils and seven Rural Councils.

C. Demographic Characteristics

The estimated population of Bahr El Ghazal Province is 779, 921 (based on the Annual Review of the Regional Ministry of Administration, Police and Prisons 1981/82 Document). The population distribution and number of tax payers by district are shown in the table below.

Tabe 1: Population Distribution by District

District	Population	Tax Payer
Aweil	374,403	59,463
Gogrial	258,612	56,093
Raga	25,600	1,003
Wau	121,306	9,538
Bahr El Ghazal	779,921	126,997

There was no information on basic demographic data (e.g. infant mortality rate, crude death rate, crude birth rate and total fertility rate). However, the total number of births reported in Wau town for 1981 was 3,603

which implies a crude birth rate in Wau town of 56/1000.

D. Economic Activities

The main economic activities are subsistence farming and pastoralism. Dura, simsim, groundnuts and cassava are eaten. Cattle, goats and sheep are the animals reared. Some agricultural and dairy farming projects have been introduced in the province (e.g. the rice growing scheme in Aweil area and the dairy farm near Wau).

Small industries have been introduced in the province namely The Fruit Canning Factory, the Saw Meal and the Beer Brewing Factory in Wau Town (not yet in operation).

E. Communication

The main towns are linked by roads some of which are seasonal. There is a railway line linking Wau Town with the Northern Parts of the Sudan. Wau Town has air links with other major towns in the Southern Region and the rest of the country. However, the communication infrastructures within the province are not sufficiently developed.

F. Health Facilities and Personnel

1. Health Facilities

Table 2 shows the health care and training facilities in Bahr El Ghazal Province. The ratio of population per health facility is also indicated in the same table.

Table 2: Health Care Facilities in Bahr El Ghazal Province as of March, 1982.

Type of Health Care Facility	Number	Population Per Facility
Hospitals	5	155,982
Health Centers	1	779,921
Dispensaries	22	35,451
Dressing Stations	28	27,854
Primary Health Care Units	54	14,443

Note: One of the five hospitals is a national Leprosy Center for treating patients as well as for training health personnel on leprosy.

2. Health Personnel

The total number of health personnel by category in Bahr El Ghazal Province as of March, 1982, and the ratio of population per each category of health personnel are shown in the table below (Table 3).

Table 3: Number and Type of Health Personnel and Population Ratio Per Each Type of Health Personnel in Bahr El Ghazal Province as of March, 1982.

Type of Health Personnel	Number	Population Ratio
Medical Doctors	17	45,878
Medical Assistants	89	8,763
Health Visitors	13	59,994
Public Health Officers (including 1 EPI)	3*	259,331
Nurses	275	2,836
Laboratory Assistants	16	48,745
Theatre Attendants	8	97,490
Radiographers	2	339,951
Refractionist	1	779,921
Nurse/Midwives	13	59,994
Dispensers	3	259,331
Sanitary Overseers	11	70,902
*Village Midwives	17	
Health Workers	54	14,449
Vaccinators	-	-
Assistant Sanitary Overseers	21	37,139
Mosquitoman	24	32,497
Conservanymen	105	7,423

*Only Village Midwives in Wau Town are shown. The total number in the Province is more than 17.

Source: Office of A/Commissioner for Health.

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III. Findings

A. Coverage, Accessibility and Acceptability

1. Coverage

The rural population (526,589) of Bahr El Ghazal Province (BGP) is 67.5% of the total population (779,921) of the Province. The figure for rural population appears to be on the lower side. The numbers of functioning PHCUs, as of March 1982, is 54. The rural population is served by 54 PHCUs, 28 Dressing Stations and 22 dispensaries (total of 104 health units). Hence the average population per health workers is 5063.

To achieve the average ratio of 4,000 population per health worker, 132 health units are needed - which means that 28 more health units must be established by 1984. Of these additional health units, 5 will be dispensaries and 23 PHCUs. So, 5 more medical assistants and 51 CHWs (including 28 CHWs to replace the nurses at the dressing stations) have to be trained by 1984.

2. Accessibility

The services provided at the PHCUs and dispensaries visited are free of charge, therefore, there is no financial barrier on the part of the community. All the PHCUs and Dispensaries were said to be open all working days of the week.

However, based on the information provided by the CHWs and members of the community, certain sections of the community were not within walking distance to make use of the services provided. The distance factor also limits the home visiting and follow-up activities of those CHWs who do not have means of transport (e.g. bicycle).

3. Acceptability

Based on interviews of community members and the CHWs in the PHCUs visited and examination of daily attendance records, the PHCUs are utilized by all age and sex groups with an average daily attendance of 15 patients. The services provided were appropriate, judging by diagnosis and treatment records, and the

general attitude of the community members interviewed towards the services provided at the PHCUs was very positive.

B. Community Participation

In the areas visited the community members were involved in the planning of the PHC system. All the PHCUs visited were built on self-help basis and were being maintained by the community. Each of the CHWs was selected by his own community for training. The community has a role in the supervision of the CHWs. There are some mechanisms for dialogue between the community members and the CHWs providing the services. For example, each community had a Village Development Committee, Sudan Socialist Union (SSU) and the Parent Teachers Committee. The CHWs were members of all or some of these committees. In areas where the PHCus were away from the main road, members of the community assisted in carrying the drugs and other supplies to the PHCUs. And, those communities where the PHCUs were still under construction, the community members provided alternative facilities for CHWs to carry out their work.

It was also found to be a common practice in all the areas visited, that whenever the CHWs received a new supply of drugs the Chief and other community leaders were informed. The CHW's would open the new supply of drugs in the presence of the Chief and other community leaders for inspection. It appeared that the committees visited were aware of some of their health problems. For example, Malaria, measles, diarrhea and cerebro-spinal menengitis (CSM) were identified as major health problems.

There are some interactions between the various committees (e.g. the SSU, The Village Development Committee and the Parent Teachers Committee). The main activities of these committees are developmental and political administration.

C. Managerial Systems

At the Provincial level, the Primary Health Care approach is not well understood. Primary Health Care is viewed as a vertical programme. Primary Health Care functions separately from other health care services in the province.

Apart from the salaries of the health personnel involved in the Primary Health Care System, the Government has very little input in terms of resource allocation to support the services provided by the Primary Health Care System. All the PHCUs and Complex Dispensaries visited depend for their drugs, equipment and transport almost exclusively on external assistance. There is no coordination between Primary Health Care and other sectors at the Provincial Level. Similarly, there is no coordination of the activities of the International or Voluntary agencies and those of the Provincial Health Services.

D. Health Personnel and Training

1. Health Personnel

The total number of the different categories of health personnel in the Bahr El Ghazal Province is shown in Table 3. The distribution of different categories of health personnel by district was not available except for those working in hospitals. All the 17 Medical Doctors work in hospitals (one hospital, Gogrial Civil Hospital, did not have a Medical Doctor - it is run by a MA). The majority of the Medical Assistants and nurses work in hospitals as there are only 22 dispensaries, one health center and 28 Dressing Stations in the whole province (See Table 2). The type and duration of training of the different categories of health personnel available in Bahr El Ghazal Province are shown in Table 4.

Except for the CHWs, there are no written job descriptions for the different categories of health personnel. Because of the lack of clearly written job descriptions, there were some overlaps. For example, the work of the Senior Medical Assistant overlaps with that of the Senior Primary Health Care Inspector while one of the Sanitary Overseers was working as a "Mosquitoman".

2. Training

a. Community Health Workers (CHWs)

All Community Health Workers interviewed said that the training they received at the CHW Training School was adequate for them to carry out their duties. All

the CHWs spent one academic year (9 months) at the CHW Training School and they were all selected by their respective communities. Three of the four CHWs interviewed had attended one or more refresher courses since they graduated while the MA interviewed had never attended any refresher course at all.

The CHW students interviewed said that the training they were receiving was appropriate. However, some of the students felt that certain sections of the course were rather advanced for them. Some of the tutors felt that the materials taught to CHWs were appropriate except that the educational level of some of the CHWs was rather low.

The curriculum for CHWs is divided into Units and each unit covers a specific area of study. The methods used in teaching are lectures, practical (field work) and role playing.

b. Village Midwives (VMWs)

All the village midwives (VMWs) interviewed said that the training they received was adequate. The training included lectures and practicals. VMWs undergoing training are required to deliver a minimum of 20 women under supervision. All student VMWs make home visits with their tutors and are required to attend deliveries along with tutors at night and during the day. There is a mechanism for continuing education for VMWs. For example, any VMW found not keeping her kit in order, the HV supervisor takes the kit away and the VMW is called in for further training. All VMWs interviewed had had some form of refresher course.

Table 4: Type and Duration of Training of Health Personnel by Category

Category of Health Personnel	Type of Training and Duration	Qualifications
Medical Doctors	Six years training in Medicine (additional training for specialists)	University Degrees Medicine
Public Health Officers	3 years training in Public Health in the School of Hygiene	Diploma in Public Health
Medical Assistants	Usually 3 years in training in nursing plus 2 years additional training as MA	Medical Assistant Certificate
Health Visitors	3 years training in nursing, 1 year training in Midwifery and 2 years as Health Vistors	Health Visitor
Laboratory Assistants	3 years training in nursing plus 2 years in laboratory techniques	Certificate as Laboratory Assistant
Theatre Attendants	3 years nursing training plus 2 years training in theatre	Certificate as Theatre Attendants
Nurse Midwives	3 years nursing training plus 2 years training midwifery	Nurse Midwifery Certificate
Dispensers	3 years nursing training and some additional training in the dispensing of drugs	Certificate as Dispensers
Radiographers	Secondary schooling with science subjects plus 3 years training in radiology	Diploma in Radiology

Table 4: Type and Duration of Training of Health Personnel by Category (continued)

Category of Health Personnel	Type of Training and Duration	Qualifications
Refractionists	Secondary schooling with science subjects plus 3 years training in refraction	Certificate in Refraction
Nurses	3 years training in in nursing	Certificate in Nursing
Sanitary Overseers	9 months training in public health care (curative, promotive/ preventive)	Certificate
Community Health Worker	9 months training in Primary Health Care (curative, promotive/ preventive)	Certificate as CHW
Village Midwives	9 months training in midwifery	Certificate as Village Midwives

Source: Director of PHC, Southern Sudan.

c. Tutors of CHWs and VMWs

Community Health Worker Tutors are MAs with three months training as tutors. The training concentrates mainly on teaching methods, administration and re-orientation in regard to the Primary Health Care System (e.g. the promotive, preventive and community participation approach).

The VMW tutors are certificated nurses with additional training in midwifery and as health visitors. All the VMW tutors interviewed have had some refresher courses.

d. Statistical Clerks

The three statistical clerks interviewed had no formal training in statistics. They were simply employed as statistical clerks and received on-the-job training. Only one statistical clerk had a senior secondary education. None of the statistical clerks interviewed had had any refresher course in statistics. All the statistical clerks said that they were not adequately trained for their job and thus expressed a desire to have some training.

e. Supervisors and Administrators

The Provincial Medical Assistant, the Senior Medical Assistant and the Primary Health Care Inspector had no training in Managerial skills. With the exception of the Primary Health Care Inspector who had some orientation courses in Primary Health Care, the Provincial Medical Assistant (PMA) and the Senior Medical Assistant (SMA) had no training or orientation courses regarding the Primary Health Care System. However, the SMA did attend a short course on personnel administration and management a few years back.

On the other hand, the Chief Public Health Inspector had had some orientation about the Primary Health Care System and was involved in the planning and development of the Primary Health Care System. He felt that he was in a better position to supervise the CHWs, especially in promotive and preventive activities, because he was specifically trained in public health and the major activities of his staff were environmental sanitation and hygiene.

The Assistant Commissioner of Health had no training in Public Health or Community Health, nor did he have any training in managerial skills and had never attended any refresher courses on personnel administration and management. However, he was acting as the Assistant Commissioner (A/Commissioner) of Health and there were plans for him to go for further training in Community Medicine.

E. Health Information System

The basic information to be collected at the PHCU's and Complex Dispensaries was determined by the Ministry of Health in collaboration with the World Health Organization (WHO) and is specified in the Primary Health Care Programme (1977/78 - 1984) document published in February, 1976. The type of information to be collected is also specified in the same document referred to above. Community Health Workers, Nurses (in Dressing Stations and Dispensaries) and Medical Assistants in charge of Complex Dispensaries are the persons responsible for collecting the information required on Primary Health Care activities. Village midwives are also involved in collecting vital data. The records reviewed were complete and consistent, but accuracy could not be determined. On the basis of the records checked and interviews, the CHWs, MAs and Nurses had adequate skills to record the information required.

Data collected at the PHCUs and Complex Dispensaries are simply aggregated. No analysis is carried out at the District, Provincial and Regional levels. All CHWs and MAs in the PHCUs and Complex Dispensaries visited kept daily attendance, birth and death registers with complete entries. None of the CHWs and MAs kept any record on promotive and preventive activities. With the exception of one CHW and the CHWs and MAs interviewed claimed to send monthly reports to their supervisors (e.g. the CHWs claimed to send monthly reports to the MA in their complexes while the MAs claimed to send monthly reports to the Primary Health Care Inspector at the Provincial Headquarters). Two CHWs had copies of the latest reports (one for January and the other for February, 1982). One CHW had never submitted any monthly reports since 1980 while the other had not submitted any reports since January 1982 - the last report was submitted in December, 1981. There were no records in the Dispensaries visited to indicate the last date on which the latest reports were submitted. Health Visitors at VMW School kept records on births occurring in the school, hospital, Health Center and in the villages around Wau town. Village Midwives interviewed also kept records of all births occurring in their communities.

Although the CHWs and MAs in the PHCUs and Complex Dispensaries visited seemingly sent monthly reports, there were not records of systematic records at the Provincial level. Reporting was rather erratic and it was not clear

as to whether reports were sent to the Provincial MA, the Senior Medical Assistant or the Inspector of Primary Health Care. The reporting mechanism was rather unclear both to those collecting the data as well as to those processing the data. No reports on PHC activities were sent to the Regional Ministry of Health in Juba and Statistical Clerks did not exactly know what to do with the few reports received from PHCUs and Complex Dispensaries. The very little, if any at all, use of the data is made at the District, Provincial and Regional levels.

1. Types of Registers found at Primary Health Care Facilities

All the Community Health Workers (CHWs) but one and all Medical Assistants (MAs) in the Primary Health Care Facilities visited had an outpatient (daily attendance) register, a birth register, a death register and a visitor's book. None of the CHWs and MAs in the Primary Health Care (PHC) facilities visited kept any records on Promotive and Preventive Activities (e.g. none of the CHWs and MAs had a promotive and preventive activities register).

2. Details of Registers a) Outpatient Register.

Five of the six outpatient (daily attendance) registers reviewed had all the entries (e.g. they were properly completed). In one of the six registers reviewed referred cases were not indicated. The information recorded in outpatient registers appeared to be accurate. However, the accuracy of the diagnosis and treatment given could not be determined (e.g. it was not possible to determine from the outpatient registers whether or not the right diagnosis was made, especially the diagnosis made by CHWs. The information was consistent.

b) Promotive/Preventive Register

None of the CHWs and MAs in the PHC facilities visited had any records on Promotive/Preventive Activities. Hence the completeness and accuracy of information on promotive and preventive activities could not be determined.

c) Birth Register

All the birth registers were complete (e.g. all the entries were made). All the MAs in the Complex Dispensaries visited had birth certificate books and they issued birth certificates. The information provided appeared to be accurate and consistent, although it was difficult to determine whether or not all the births occurring in the community were being registered.

d) Death Register

All the death registers reviewed were complete (e.g. all had complete entries). The information on all the death registers appeared to be accurate and consistent. However, the ages of the deceased may not have been accurate.

3. Training in PHC Record System and Statistics

a) Original Training

All the CHWs interviewed had a one week lecture in PHC record systems and statistics during their training in the CHW Training School. One of the CHW tutors gave the lectures on PHC information. The CHWs Manual had a section on health information systems and one unit in the timetable was on administration and records.

The MA and the Nurse interviewed received training (while still undergoing training) on how to complete the outpatient, birth and death registers and on how to make referrals as well as making monthly reports. None of the Statistical Clerks interviewed had any training in PHC record systems and statistics. All the Statistical Clerks interviewed were recruited and received some training on the job. Only one Statistical Clerk had completed Secondary School.

b) Refresher Courses

None of the CHWs had had any refresher courses on the PHC record system/statistics since leaving the CHWs training school. Neither the Nurse nor the MA interviewed had had any refresher course(s) on the PHC record systems/statistics. Besides the original training in recording information in outpatient register, birth

register, dealth register and referral cards, the Nurse and the MA had no training in how to record information on Promotive/Preventive activities.

4. Monthly Reports

Three out of the four CHWs, the Nurse and the MA interviewed said they submitted monthly reports to their respective supervisors. One CHW had never submitted any report since 1980. One CHW submitted his latest report in December, 1981, one CHW submitted his latest report in January, 1982 and the other CHW submitted his latest report in February, 1982. The MA interviewed submitted his last report in February and the last report from the other Dispensary was said to be submitted in January, 1982. All the three CHWs and the MA in one of the dispensaries visited had copies of the latest monthly reports submitted. The Nurse at the dispensary could not locate a copy of the latest report submitted by the MA in charge of the dispensary (the MA was away, so it is possible that a copy of the latest monthly report was available except that the Nurse did not know where it was kept). All the information on the monthly reports, daily attendances, births and deaths recorded during the month were complete. There were no reports on Promotive/Preventive activities submitted by any of the CHWs and MAs in the PHC facilities visited. One of the CHWs had all the reports available but never submitted any.

5. Discussion of Monthly Reports with Village or Other Development Committees

All the CHWs and one MA discussed their monthly reports with members of the Village Development Committee or the Sudan Socialist Union (SSU) basic unit. Three CHWs discussed their monthly reports with the Parent-Teachers Committee.

The community members interviewed (which included school teachers, an Assistant Chief (sub-Chief) and the Secretary of the SSU basic unit) verified this.

6. Comments from Supervisors on Monthly Reports

Neither the CHWs nor the MAs and the Senior Nurse received any comments (e.g. feedback) from their

immediate or other supervisors. For example, the CHWs did not get any comments on their monthly reports from either the MA in charge of their respective complexes or from the Primary Health Care Inspector. Similarly, the MAs in the Complex Dispensaries did not get any feedback on their monthly reports from the Primary Health Care Inspector (PHCI), Senior MA, or the Provincial MA. It was also quite clear that there were no complex meetings in the areas visited, hence, the MAs did not discuss the monthly reports with the CHWs in the respective complexes. There is no feedback from high levels to low levels in the PHC Health information system.

7. Evidence of Monthly Reports from Primary Health Care Facilities Reaching the Appropriate Departments Within the PHC System.

The Statistical Clerks in the office of the Assistant Commissioner of Health (A/C of Health) did not receive any reports from PHC facilities. The only reports received were the weekly telegrams on communicable diseases sent by MAs or Senior Nurses in the dispensaries. The A/C of Health received no reports, regularly, on PHC activities. A few reports reached the PHC Inspector, the Senior MA and the Provincial MA. Hence, the system of reporting was not clearly understood by either those responsible for collecting the data or those processing and reporting the information at the Provincial level, and very little use (if any at all) of information on the PHC service was made in planning and supervision or monitoring the PHC activities.

F. Logistics and Supply

1. Transport

There are 10 vehicles assigned to the Office of the Assistant Commissioners of Health (A/C of H), 9 Land Rovers, two lorries and a Toyota and two Land Rovers were off road for lack of spare parts. These vehicles were provided by external agencies. In certain cases, the vehicles were not used for the purposes for which they were provided. Fuel shortage was a major problem in the province. Spare parts were not available and the vehicles were poorly maintained.

2. Drugs and Medical Equipment

As mentioned earlier, almost all drugs and medical equipment for the Primary Health Care System come from external sources. Drugs are packed in Regional PHC Stores and transported to the PHCUs and Complex Dispensaries via Provincial Medical Store. Drugs and equipment are usually stored in the PHCUs and Complex Dispensaries. However, in areas where the PHCUs were under construction, the drugs and medical equipment were stored in houses provided by the community. Drugs are supplied for a six month period and the CHWs had no part in ordering. The standard drug list includes most of the essential drugs. However, some of these essential drugs were out of stock (e.g. Aspirin, antibiotics and chloroquin were not available in some of the PHCUs).

G. Constraints

Some of the main constraints are:

1. Insufficient baseline data to allow calculations of such rates as infant mortality.

2. Senior health personnel responsible for planning and supervision of PHC services are not adequately trained in health management.

3. The background of the supervisors is curative medicine and they have difficulty in adapting to the new PHC approach wherein promotive and preventive services take precedence.

4. Inadequate training of personnel in translating health information collected into a useable form.

5. Lack of uniform procedures for the collection and processing of health information.

6. Inadequate supplies of essential drugs for PHC services.

7. Poorly managed transport couple with lack of spare parts and fuel.

8. Underdeveloped communications infrastructure.

9. The estimated rural population is 67.5 percent of the total population of the province. Rural population covered by each CHU is 5,063. Twenty-eight additional units will have to be established by 1984 to reach the CHW/population ratio of 1/4,000.

H. Coverage

Although there are barriers in terms of accessibility to the services provided at the PHCUs, certain sections of the community are not within walking distance from the PHCUs (e.g. some of the population is not within the 10 miles radius proposed in the Primary Health Care document, 'The Green Book'). Hence, some segments of the populations have no ready access to the services provided by the Primary Health Care System.

The Primary Health Care System is very well accepted in the areas visited. This is reflected in the degree of community participation and involvement in planning, selection of CHWs for training, building and maintenance of PHCUs and in assiting the CHWs in the transport and storage of drugs and equipment. The community members in all the communities visited had a very positive attitude towards the Primary Health Care System and the CHWs who are providing the services.

Some of the health personnel in the health services do not quite understand the concept of Primary Health Care as an approach towards a health service delivery system. The training of certain categories of health personnel is not geared towards the PHC Approach.

Those responsible for planning, implementation and monitoring the activities of the Primary Health Care System lack the necessary training in managerial systems. There is no proper coordination of Primary Health Care activities at the Provincial level and there is very little attempt to integrate certain health related activities into the Primary Health Care System. (e.g. there is almost no attempt to integrate the activities of the Chief Public Health Inspector and his staff into the Primary Health Care System.) The concept of Primary Health Care approach is not well understood and PHC is looked upon as a vertical programme.

A certain amount of basic information on the services

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provided at the PHCUs is being collected by the CHWs and MAs in the Complex Dispensaries. However, very little use is made of the information collected by CHWs, Village Midwives (VMWs) and MAs involved in the PHC system in the rural areas. There was no evidence that the Senior Health personnel at the Provincial level made any use of the information collected at the Primary Health Care Complex level for supervision and allocation of drugs. The reporting mechanism does not seem to work as reporting is erratic and statistical clerks do not quite know what to do with information on Primary Health Care activities.

There are logistics and supply problems. Poor vehicle maintenance and lack of spare parts and fuel create serious transport problems. Equipment and drug supplies are mainly from external sources. The personnel responsible for logistics and supplies lack the necessary training skills to enable them to carry out their duties effectively.

B. Recommendations

1. Accurate population figures should be established in those communities now having or proposed to have PHCUs in order to determine whether or not the ratio of 4,000 population per PHCU is being achieved.

2. The distances from the PHCUs to the Complex (referral) dispensaries should be established in order to facilitate accessibility and supervision.

3. Adequate enlightenment should be given to the communities now having PHCUs, as well as those proposed to have PHCUs, concerning the role of the community in the promotive and preventive components of the PHC system. This is particularly important in the planning of the PHCU and selection of the CHW (e.g. the community should be made to clearly understand that the main training and activities of the CHW will be promotive and preventive and the community should support these activities).

4. Training or retraining programmes should be

established for:

(a) Those responsible for planning, implementation and monitoring (or supervision) of PHC activities in the area of managerial and administrative skills, use of health information in planning, and monitoring PHC activities and resource allocations.

(b) Those responsible for collecting, analyzing, and reporting information on PHC activities, especially statistical clerks at the District, Provincial and Regional levels.

(c) Traditional birth attendants (TBAs).

(d) Public Health Officers or Sanitary Overseers with adequate experience as tutors in CHW Training Schools as these people have a better understanding in health promotion and disease prevention activities.

5. The activities of the Chief Public Health Inspector and his staff should be fully integrated into the PHC service delivery system and the Chief Public Health Officer and his assistants (e.g. Public Health Officers) should be actively involved in the planning, implementation and supervision of PHC activities at all levels.

6. Health related activities should be coordinated and integrated into the PHC system and the activities of the external agencies should be monitored and coordinated by the Minitry of Health, especially at the District and Provincial levels.

7. The information collected at the PHC service delivery facilities should be limited (e.g. only important and useful data should be collected) and the instruments for collecting and reporting information should be standardized.

APPENDIX E-5

THE RECURRENT COSTS AND FINANCING OF THE PRIMARY HEALTH CARE PROGRAM SOUTHERN REGION, SUDAN

Dayl Suzanne Donaldson

MOH/UNICEF/USAID/WHO PHCP EVALUATION

March 20 - April 10, 1982

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ABBREVIATIONS

ACH	Assistant Commissioner for Health
AID/W	Agency for International Development, Washington, D.C.
AMREF	African Medical Research Foundation
CHW	Community Health Worker
CHWTS	Community Health Worker Training School
GMT	German Medical Team
GOS	Government of the Sudan
HIS	Health Information System
MA	Medical Assistant
MOF	Ministry of Finance, Khartoum
MCH	Ministry of Health, Khartoum
NGO	Non-governmental Organization
NHP	National Health Programme, 1977/8 - 1982/3
PHCC	Primary Health Care Complex
PHCI	Primary Health Care Inspector
PHCP	Primary Health Care Programme
PHCP/RHQ	Primary Health Care Programme, Regional Headquarters, Juba
PHCU	Primary Health Care Unit

Provinces in the Southern Region:

EEP	Eastern Equatoria Province
WEP	Western Equatoria Province
BGG	Bahr El Ghazal Province
UNP	Upper Nile Province
JP	Jonglei Province
LP	Lakes Province
RMOF/EP	Regional Ministry of Finance and Economic Planning, Juba
RMOH/SW	Regional Ministry of Health and Social Welfare, Juba
RMOPA	Regional Ministry of Public Administration
SSU	Sudanese Socialist Union
USAID/J	United States Agency for International Development, Regional Office, Juba
USAID/K	United States Agency for International Development, Regional Office, Khartoum
UNICEF	United Nations International Children's Emergency Fund
VDC	Village Development Committee
WHO	World Health Organization

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The author also benefitted from the insights of all the other members of the Evaluation Team and thanks Dr. Mary Ann Micka, Health Officer of the USAID Mission in Khartoum, for the opportunity to participate in this Evaluation.

A paper entitled Cost and Financing of Primary Health Care, Southern Sudan Primary Health Care Programme, by Dr. Katja Janovsky of the AMREF staff in Nairobi was particularly useful in preparation of this report. Technical input and documentation from Dr. David Dunlop of AID/W and Dr. Susan Stout of the International Development Study Center of Battelle with respect to economic issues associated with the health sector in the Sudan were also important contributions.

SCOPE OF WORK

Several iterations of a Scope of Work for the Evaluation Team were prepared which contained a variety of references to the recurrent costs of the Primary Health Care Programme. The author's specific terms of reference were:

1. To participate as a member of the evaluation team for the North and/or South Primary Health Care projects in the Sudan under the direction of the Chief of Party of the Evaluation and the USAID/Sudan Health Division Chief.

2. To focus on the issue of recurring costs and other relevant financing issues associated with the Primary Health Project in the South.

3. To consider the adequacy of Sudanese government (national and regional), donor and community resources to cover these recurring costs.

4. To consider what might be areas for future inquiry and project effort to address the issue of recurrent costs.

5. To prepare a report as to the above for inclusion into the evaluation team report.

METHODS

Only three weeks were available in which to consider questions about the recurring costs of the PHCP in the Southern Region of the Sudan. Thus, this research had to rely on information from persons involved with the implementation and/or financing of PHCP activities and on printed government documents and other reports; rather than on new, untabulated data. A list of the persons contacted, aside from the evaluation team members or resource persons, is attached as Annex A. The printed materials which were reviewed are listed in the Reference section of this report.

The analysis presented is limited by the short time available to review and assimilate information on the costs and financing of the PHCP. Further, much of the information available is anecdotal or poorly documented and therefore open to

misinterpretation. Finally, Dr. Oliver Duku, the Key resource person on planning, budgeting and financing issues at the Regional Ministry of Health and Social Welfare (RMOHSW), was away during the author's field research in Juba.

The author would welcome any corrections of the information presented or criticism of the analysis made in this report.

FINDINGS

Recurrent Costs of the Primary Health Care Programme, Southern Region

When the detailed description and implementation plan for the Primary Health Care Programme (PHCP) for the Southern Region, Sudan was developed in 1975 and 1976, efforts were made to calculate the recurrent costs of the PHCP considering such factors as inflation (6.5 percent), personnel turnover (10 percent) and the depreciation of vehicles and supplies (20 percent per year). In Table 1 the left hand column shows the estimated recurrent costs in the "Green Book" for facilities, personnel and supplies associated with the PHCP for 1980/81.

However, re-estimation of the recurrent costs of the PHCP in 1980/81 is required because:

--Inflation in the Sudan has been at 25 to 40 percent instead of at 6.5 percent.

--The construction and renovation of the PHCP facilities, the training of Community Health Workers (CHWs), the development of the Health Information System (HIS) and the acquisition of vehicles has not followed the schedule laid out in 1975/76 (see Table 2).

--Salaries and allowances for government service employees were increased by 50 percent in 1978 and again by 100 percent in 1980.

--The prices of imported building materials, vehicles, petrol, and drugs and equipment have increased internationally and require foreign exchange, which the Sudan can little afford in light of balance of payments problems.

--The Sudanese pound has devalued from US$2.90 in 1976 to US$1.10 in November, 1981.[2]

--The "Green Book" did not estimate the recurrent costs of the PHCP headquarters or provincial offices, nor several of the recurrent costs associated with the maintenance of or services to the CHW training schools (CHWTS), dispensaries and PHCUs.

--The value of the medical kits, instruments and supplies provided to the dispensaries and PHCUs has decreased.[3]

A study by AMREF and the RMOHSW in 1980 provided more recent estimates of the recurrent costs of service units in the Southern Region (Table 1, right hand column). When these facility-based costs are multiplied by the number of units AMREF/RMOHSW stated were operating in 1980, the total annual recurrent costs of the PHCP, exclusive of expatriot technical assistance, was estimated to be ŁS 1,040,385.

TABLE 1

PHCP RECURRENT COSTS ESTIMATES
(ST) FOR SINGLE FACILTIES
SOUTHERN REGION, SUDAN
1980/81

RMOHSW/PHCP	"Green Book"[1]	AMREF Report[2]
Salaries	-	30,831
Travel Allowances	-	3,600
Bldg. Maint.	-	870
Office Rental	-	2,500
Vehicle Maint. & Petrol	3,971[3]	7,000
Office Supplies	-	350
Total	3,971	45,151
Provincial PHC Office		
Salaries	-	4,535
Travel Allowance	-	450
Office Rental	-	300
Vehicle Maint. & Petrol	3,971[3]	2,000
Office Supplies	-	350
Total	3,971	7,636
CHWTS		
Salaries[4]	2,214	15,565
Travel Allowance	-	450
Bldg. Maint.	-	1,500
Vehicle Maint. & Petrol	-	1,800
Food	-	12,000
Teaching Supplies	-	825
Total	2,214	32,140

Dispensary	"Green Book"[1]	AMREF Report[2]
Salaries	643	1,160
Bldg. Maint.	-	2,000
Vehicle Maint. & Petrol	-	600
Drugs & Supplies	4,793[5]	1,155
Total	5,436	5,415
PHCU		
Salary (CHW)	320	590
Bldg. Maint.		
New	-	1,100
Tukul-type	-	135
Bicycle Maint.	-	25
Drugs & Supplies	1,629[5]	729
Total		
New	1,949	2,444
Tukul-type	-	1,479
Information System	73,200	

Table 1: Notes

1. Data from: Democratic Republic of the Sudan, UNICEF and WHO, (1976).

2. Data from: AMREF (September, 1980).

3. Data from: the "Green Book", p. 117. It was assumed that the RMOHSW/PHCP acquired one of the vehicles and each of the provincial offices one of the remaining six.

4. The "Green Book" salary figure considers only the salary of the tutors. The AMREF figure contains figures for other staff and possibly students.

5. The "Green Book" (pp. 115-6) figures for the drugs and supplies of dispensaries and PHCUs seemed to be too low. Thus, the higher figure for 1979/80 for dispensary drugs was used for 1980/81 and the 555.0 LS figure for PHCUs was changed to equal 655.0 LS.

TABLE 2

ESTIMATED AND "ACTUAL" NUMBERS OF PERSONNEL AND FACILITIES OF THE PHCP, SOUTHERN REGION, 1980/81

	"Green Book" Estimates	PHCP/RMOHSW Annual Report[1]	AMREF Report
CHWTS	7	4	4
CHWs			
Trainees	143	45	-
Trained[2]	468	287	-
Dispensaries[3]	141	164	65
PHCUs			
Total	402	287	257
New		122	92
Tukul	-	165	165

Table 2 Notes:

1. PHCP/RMOHSW (1980/81)

2. The "Green Book" figures were recalculated to eliminate the correction for "drop-outs," since this correction was not possible with PHCP/RMOHSW data.

3. The disparity between the PHCP/RMOHSW reported number and that of AMREF is significant. This discrepancy should be clarified for the following reasons:

   a. The recurrent costs are higher for a greater number of dispensaries.

   b. If the RMOHSW figures are correct, then the ratio of dispensaries to PHCUs is only 1:1.9, instead of the 1:4 envisionsed in the "Green Book." This "imbalance" should be considered in plans for future construction of dispensaries, particularly by NGOs.

The 1980 figure, estimated from the AMREF/RMOHSW study, seems to underestimate certain recurrent costs. For example:

1. The total amount included for vehicle maintenance and petrol in the AMREF estimate is as follows:

Facility	RC x # of Facilities	- Total RC (SŁ)
RMOHSW	7,000 x 1	7,000
Provincial Offices	2,000 x 6	12,000
CHWTS	1,800 x 4	7,200
Dispensaries	600 x 65	39,000
		65,200 (or US $48,900)

However, AMREF staff in April 1982 estimated that it cost US$1.00 per mile to cover the depreciation, spare parts and petrol of a landrover, and that AMREF/AID donated landrovers were being driven between 6,000 to 12,000 miles per year. If all of the 24 donated landrovers were driven only 6,000 miles per year, a total of US$144,000 or 194,400 ŁS would be required to cover their recurrent costs. Even if only the costs of spare parts and petrol ($0.67/mile) were considered, at the minimal mileage per year (6,000 miles/landrover), US$96,480 (or ŁS 130,248) would be required to cover the recurrent costs of all of the AID funded vehicles given to the PHCP program. Thus, the AMREF/RMOHSW estimate above for the recurrent cost of PHCP vehicles is low by at least 50 percent.

2. The cost of the PHCP refresher courses is also not included in the AMREF estimate. In 1980/81, 19 courses were given to 98 MAs, 165 nurses, 7 health visitors, 9 village midwives, 62 public health inspectors (or sanitary overseers), 100 CHWs and 35 others. The estimated average cost per 5 day course is ŁS 500, which covers the cost of food, stipends and allowances for students and preparation of teaching materials. This estimate does not include the transportation costs of the training team, which would be high since an AMREF plane is often involved. The known recurrent costs of

the refresher courses for 1980/81 are thus:

3 PHCP/RMOHSW Staff = already included in RMOHSW estimate

19 courses x £S 500/course = £S 9,500

Transportation = unknown to author

3. The recurrent cost of expatriot technical assistance to the PHCP was estimated by AMREF/RMOHSW at £S 2,174,192 (see Table 3). However, this estimate does not include NGO inputs with respect to drugs, vehicles or petrol. Although the regional GOS does have a record of the external assistance to the PHCP (see Table 4), it is not clear what kinds of assistance these figures represent, since they are at variance with the AMREF/RMOHSW estimates (Table 3) for technical assistance.

The above discussion illustrates the difficulty of estimating the recurrent costs of the PHCP for a current or future point in time. However, for the purpose of considering the adequacy of the current sources of recurrent financing, the AMREF/RMOHSW estimate of S£ 1,040,385 for the recurrent costs of the PHCP in 1980 (exclusive of technical assistance) will be utilized.

TABLE 3

ANNUAL RECURRENT COST OF TECHNICAL ASSISTANCE PERSONNEL AND ADMINISTRATION OF NON-GOVERNMENTAL AND INTER-GOVERNMENTAL ORGANIZATIONS TO THE PHCP, SOUTHERN REGION

African Medical and Research Foundation (AMREF) (8 health plus project administration staff)	US$	441,780	S£	345,959[1]
Norwegian Church Aid (NCA) (6 health staff and 9 administrative staff)	Nkr.	902,200	S£	148,842[1]
UNICEF (2 administrative staff)	US$	100,000	S£	78,309[1]
African Committee for Rehabilitation of Southern Sudan (ACROSS) (14 health staff, 2 engineers 17 administrative support staff)			S£	288,298[1]
German Medical Team (GMT) (7 health staff, 2 engineers 2 administrative staff)	DM	2,458,950	S£	962,784[1]
Save the Children Fund (SCF)				
Sudan Council of Churches (SCC)			S£	350,000[2]
Lutheran World Service (LWS)				
World Health Organization (WHO)				
Dutch Technical Aid (DTA)				
Estimated Total of Annual Recurrent Cost			S£	2,174,192

[1]Estimates provided by the organization.

[2]Estimates based on size of operation and level of expenditure of comparable organizations in Southern Sudan.

Source: AMREF/RMOH (September, 1980) Cost and Financing of PHC Southern Sudan Primary Health Care.

TABLE 4

EXTERNAL ASSISTANCE TO THE PHCP,

Southern Region

Organization	Up to June, 1980	FY 1980-1981
AMREF/USAID		
Norwegian Church Aid	SŁ 1,010,000	SŁ 234,000
ACROSS (Tiber,Mandri)	SŁ 59,824	SŁ 172,875
Federal Republic of Germany (GMT)	SŁ 10,417	-
German Voluntary Service (GVS)	SŁ ?	SŁ 49,193
Save the Children (SCF)	SŁ 13,000	SŁ 25,000
Voluntary Service Group		
Medicine	SŁ 2,850	SŁ 2,000
Construction materials	SŁ 9,500	SŁ 9,220
CUSO	SŁ 50,000	SŁ 6,000

Source: Directorate of Planning, Regional Ministry of Finance and Economic Planning, Southern Regional Government, Sudan (June, 1981) Report on External Assistance, 1980/81.

Government Policy on the Financing of the PHCP

The "Green Book" clearly states the policy of the Government of the Sudan with respect to the financing of health services and the PHCP:

> "It is the policy of the Government to render free health services to all people in the Sudan. This is a socio-political commitment. In the Southern Region, financial resources can only meet the cost for minimum health care at the peripheral level to a certain extent. This situation calls for complementary sources such as self-help, if the rural population is to have satisfactory coverage.
>
> ...The South, as indicated by its budgetary composition, contributes very little from its local resources to the development and recurrent budgets...This means that such important projects like the PHC Programme would not succeed if reliance is wholly placed on internal sources of financing.
>
> ...If reliance is wholly put on external aid, the Region will suffer the burden of foreign debts which it cannot shoulder. On the other hand, without external aid the Region cannot stand on its own feet and should there be a stop in the flow of these aids, it is clear that the projects for which such assistance has been sought will automatically come to a halt. Therefore, it is recommendable that both the internal plus external sources of financing should jointly be made use of but on the background of an increasing self-reliance through self-help of the communities at the peripheral level." (pp.65-66).

This section of the paper will examine available information about the contributions of various levels of the Government of the Sudan, the contributions of villages through self-help and the external sources of finance for the PHCP in the Southern Region.

Government of Sudan Contributions for the PHCP, 1978-1982

The recurrent budget of Sudan is principally divided into two parts:

Chapter I - Salaries and Allowances

Chapter II - Services of (e.g. all other recurrent costs, maintenance of buildings, vehicles, etc.)

Several administrative levels in the GOS have responsibility for meeting the recurrent budget of the PHCP. Responsibility for payment of salaries (Chapter I) lies with the Central MOH, regional and district governments for their respective employees. In the Southern Region the CHW salaries have been paid from the RMOHSW budget. The regional, provincial and local councils are responsible for payment of other recurrent expenses (Chapter II).

Information about the budgeted and actual development and recurrent expenditures for health and PHCP activities in the Southern Region between 1978/79 and 1981/82 appear in Table V. This summary includes only central and regional government contributions. The provincial and local government recurrent budgets do not have separate accounts for the PHCP but funds are drawn from their general health accounts (see Annex B, Tables B.1 and B.2). The contrast between the budgeted and actual expenditure figures in Table 5 illustrates the necessity of examining actual expenditure figures when considering the ability of funds to meet recurrent costs.

The "Personnel Pay and Allowance" budgeted expenditures (Chapter I) for all health activities in the Southern Region decreased from 2.7 million SŁ in 1978/9 to 1.9 million SŁ in the 1981-82 budget. (It is difficult to account for this trend in budgeted expenditures since it would be expected to increase, unless some of the regional expenditures were transferred to provincial or local governments.) Actual expenditures, however, increased from 0.7 million SŁ to 1.0 million over the same period. However, only 68 percent of the actual funds required to pay health personnel in the Southern Region were available in 1980/1.

Budgeted expenditures for PHCP personnel increased from SŁ 195,384 in 1978/79 to SŁ 567,488 in 1981/82. However, over this period, actual expenditures for PHCP personnel were only 10 percent to 20 percent of the budgeted expenditures. The shortfall

in salary payment for PHCP personnel is not quite as large as it appears in Table 3 because the budgeted expenditures are based on all staff positions being filled which is not the case (e.g., two of the CHWTS were not in operation and the salaries of staff and students are included in the budgeted figure). However, the discrepancy between approved and actual salary payments complements the anecdotal reports that salary payments and CHW trainee stipends can be up to 10 months late. One source indicated that salaries are paid on a rotating basis, i.e., different personnel get their salaries each month and almost everyone is owed some pay and salary increases are in arrears.

Comparison of the percent of actual to budgeted expenditures for PHCP personnel (10 percent to 20 percent) with that for all health personnel in the South (26 percent to 80 percent) shows that the PHCP personnel budget is less well supported than are salaries of other health sector personnel. However, the percent of actual total health personnel expenditures which is attributable to PHCP personnel has remained fairly constant over the 4 year period at 6 percent.

Unfortunately, fewer years of information were available with respect to actual service expenditures for health and the PHCP. The approved services' budget for the PHCP increased from SL 96,000 in 1979/80 to SL 139,450 in 1981/82. The approved expenditures for PHCP services were projected to increase by over 200 percent between 1980/81 and 1981/82. However, the proportion of approved expenditures finally covered by actual expenditures ranges from only 8 percent to 15 percent. Anecdotal information supports this shortfall: CHWTS do not receive funds with which to purchase food; petrol for vehicles is in short supply; spare parts for vehicles are non-existent; vehicles which have only simple mechanical problems are quickly "cannibalized" for their tires and other spare parts.

The comparison of the approved services budget for PHCP, in contrast to that for the entire health sector, shows a commitment of 6 to 14 percent of the total. Unfortunately, data were not collected which would allow assessment of the percent of funds actually released.

However, it is well known that budgets are inflated in the hopes of attracting the maximum amount of actual revenues available. Thus, a comparison of the AMREF/RMOHSW estimated recurrent costs of the PHCP with the actual funds available may give a more

TABLE 5

BUDGETED AND ACTUAL EXPENDITURES (S£) ON HEALTH AND THE PHCP,
SOUTHERN REGION, SUDAN
1978/79 - 1981/82

EXPENDITURE ITEM	1978/79	1979-80	1980/81	1981/82
A. DEVELOPMENT BUDGET				
1. Total Health				
(a) Approved	2,157,458	2,255,496	2,732,490	2,150,000
(b) Actual Release	190,777	357,815	455,620	-
2. Primary Health Care				
(a) Approved	1,400,642	998,996	834,042	635,000
(b) Actual Release	22,571	110,000	20,000	-
3. PHC as % Total				
(a) Approved	64.9%	44.3%	30.5%	29.4%
(b) Actual Release	11.8%	30.7%	4.4%	-
B. RECURRENT BUDGET				
1. Personnel Pay and Allowances (Chapter I)				
1. Total Health				
(a) Approved	2,585,695	903,242	1,265,331	1,957,847
(b) Actual Release	690,850	730,530	855,884	980,970
(c) Actual as % Approved	(25.7%)	(80.9%)	(67.6%)	(49.8%)
2. PHCP				
(a) Approved	195,384	282,255	306,702	567,488
(b) Actual Release	38,650	49,810	50,160	60,590
(c) Actual as % Approved	(19.8%)	(17.6%)	(16.4%)	(10.7%)
3. PHCP as % Total				
(a) Approved	6.4%	28.1%	8.4%	28.8%
(b) Actual Release	5.6%	6.8%	5.9%	6.2%

TABLE 5
(continued)

BUDGETED AND ACTUAL EXPENDITURES (S£) ON HEALTH AND THE PHCP,
SOUTHERN REGION, SUDAN
1978/79 - 1981/82

EXPENDITURE ITEM	1978/79	1979/80	1980/81	1981/82
2. Services (Chapter II)				
1. Total Health				
(a) Approved		1,530,662	794,490	1,746,290
(b) Actual Release*		-	-	-
2. PHCP				
(a) Approved		96,000	114,645	139,450
(b) Actual Release		-	8,771	20,517
(c) Actual as % Approved			(7.7%)	(14.7%)
3. PHCP as % Total				
(a) Approved		6.2%	14.4%	8.0%
(b) Actual Release		-	-	-
				2,107,297

*Data not collected from RMOF/EP

Sources: Ministry of Health (November, 1981) Information Document for WHO/UNICEF Mission, 14-28 November, 1981, Sudan.

RMOF/EP, conversation with Mr. John Russie, March 31, 1982.

accurate estimate of the shortfall of government revenues relative to the PHCP's recurrent costs.

AMREF/RMOHSW Estimated PHCP Recurrent Cost, 1980-81 = SŁ 1,040,385 (exclusive of technical assistance).

GOS Actual PHCP Expenditures	Chapter 1	SŁ 50,160
	Chapter 2	SŁ 8,771
	Estimated Provincial*	SŁ 836,206
	Total	SŁ 895,137

Thus, the shortfall of government expenditure to PHCP recurrent costs given this overestimate of revenues available and underestimate of costs was at least 14 percent in 1980/81.

Likelihood of Increasing GOS Revenues for the PHCP

As a consequence of failure of Sudan's development program in the 1970's to increase export production, increases in the prices of petroleum and other imports and increase in the numbers of persons in the civil service, the GOS has become increasingly indebted to domestic and foreign creditors. Given the need to make payments to service this debt, it is unlikely that the GOS will be able to increase the revenues available for government programs in general and for health services in particular. In fact, in the early 1970's, before the PHCP program was instituted, the proportion of the national budget allocated to health had fallen from 5.2 percent in 1972 to 1.5 percent in 1975 and had not significantly increased by 1978 (see Table 6). Thus, the introduction of the PHCP, while attracting external resources to the Sudan, increased the demands on a "shrinking pie."

It is beyond the scope of this paper to describe what means

*It was assumed that all of the provincial public health and hospital budget (SŁ 7,601,869, Table B.1) was released and that 11 percent of these were used for the PHCP. This percentage was selcted because it represents the proportion of Chapter I funds actually available for health which were used for PHCP at the regional level.

Chapter I Actual Health Expenditures (1978/82)	1,838,274
Chapter I Actual PHCP Expenditures (1978/82)	199,210
PHCP As Percentage of Total Health Expenditures	11%

TABLE 6

HEALTH EXPENDITURES AS A PERCENT OF THE TOTAL CENTRAL GOS BUDGET

	1972	1973	1974	1975	1976	1977	1978
Health Expenditures (SŁ millions)	8.6	8.7	4.3	5.2	6.5	7.5	9.5
Total Central GOS Expenditures (SŁ millions)	166.7	192.5	205.9	347.6	379.6	538.5	556.5
Health as a % of TOTAL EXPENDITURES	5.2%	4.5%	2.1%	1.5%	1.7%	1.4%	1.7%

Source: International Monetary Fund (1981) Government Statistics Yearbook, 1981, pg. 563.

have been considered for increasing government revenues at all administrative levels in the Sudan. The interested reader might pursue this topic by referring to documents pertaining to the IMF/World Bank Economic Recovery Program. The difficulty of considering improvements in public revenue generation is further complicated by the present and continuing changes in public administration resulting from Sudan's Regional Government Act, 1981. The implementation of this act will shift provincial administrative and budgetary responsibilities to the regional government or to district councils. The author is unaware of documentation which explains how the collection and utilization of tax revenues at different levels of government will also change.

RECOMMENDATIONS FOR IMPROVING FINANCING OF THE PHCP'S RECURRENT COSTS

Those associated with the health sector in the Sudan are not likely to significantly influence decisions about public finance. They could more successfully consider 1) how available government resources for the health sector could be most cost-effectively and equitably allocation, 2) how to increase revenue from individuals or communities for health services as part of "self-help," 3) how to increase and utilize revenues from interested donors, and 4) how to minimize PHCP recurrent costs.

Improvement of the Allocation of Health Sector Resources

In order to accomplish this task, further information, such as that outlined below, is needed.

A. An updated compendium of available basic epidemiologic and health services related data is critically needed. Without such data, it will be impossible to consider issues of cost-effectiveness. The 1983 Census, the Social Monitoring Project in the Southern Region, and the institution of the national health information system will help to fill some of the information gaps. Sufficient resources should be available to tabulate, analyze and publish these data. Efforts to upgrade the quality of information about the health services' infrastructure (i.e., number of facilities and personnel) in the Southern Region should also be made.

B. The actual allocation of GOS and donor resources within the total health sector by type of service and

geographical distribution should be studied. However, currently, budget information for the PHCP is not available at the provincial level or lower. Further, the Southern Regional budgets show only approved not actual expenditures. Improvement of the budgetary records for the PHCP is required in order to fully assess the government's contributions to the PHCP. Further, an attempt to develop a standard form whereby donors would report on the type, number, and cost of their inputs (including technical assistance) into the PHCP, would help health and financial analysts determine the magnitude of donor resources supporting the PHCP and thus their recurrent cost implications. Government and donor revenues to other health sector activities may also be poorly accounted for and similar improvements in budgetary records may be required in order to get a complete picture of the actual allocation of funds to different parts of the health sector.

C. Utilization rates for various rural providers should be assessed. Though the PHCP is an attempt to more equitably distribute health resources and deal with health problems of the rural poor in the Sudan, health planners have assumed that this can be most cost-effectively achieved by distributing low cost services over the widest geographic area. However, little thought has been given to what diseconomies of scale occur when services are delivered to low-density populations where the demand for services may be low for a number of reasons including preference for other providers or that the opportunity costs for seeking care are too high.

D. Assessment should be made of the productivity of different PHCP workers against the costs of training and maintaining such workers.

E. Assessment of the effectiveness of the current PHCP refreser courses should be undertaken given the amount of donor (AID) resources committed to this activity.

Increase Revenues from Individuals or Communities

The financial contributions of individuals and communities to the PHCP orginally included 1) payment of taxes, 2) purchase of tools, special materials not available locally, 3) basic furniture for the PHCU and soap, and 4) payment for transport of

patients to distant hospitals. However, a number of new self-help schemes are being implemented, e.g., the payment of small fees for out-patient tickets at hospitals to create a "liquidity fund" and drug cooperatives, and have the endorsement of the GOS.

> "The Regional Ministry of Health invites interested councils to contact them with a view to developing a coperative society for the supply of drugs. Drugs will be purchased through the RMOH. This is a self-help effort designed to deal with shortfalls and is not in conflict with the government's ideal of free medical supplies."[6]

The institution of such schemes might be better accepted by the population if the monies generated are spent locally rather than being brought to a more central administrative level.

Given that the MOH and RMOHSW have laid out policies which would allow for collection of "recipient contributions," studies of the experience of experiments in local financing[9] should be undertaken to assess the net revenues generated by the collections as well as determine if the scheme has any positive or negative impact on the utilization of services. Further, those conducting the Social Monitoring Project in the Southern Region should be encouraged to add a question about the cost of medical care sought, to the questions about households' sources of medical care.

Increase and Target Donor Contributions

As discussed in the section of this paper on recurrent costs, foreign assistance for technical assistance to the PHCP in the Southern Region of the Sudan was estimated to equal SE 2,174,192 (Table 4) in 1980/81. This amount is two times the recurrent cost of the PHCP exclusive of this technical assistance. What proportion of the other recurrent costs of the PHCP (petrol, drugs, vehicles) are provided by the 10-plus NGO groups in the Southern Region is unknown. Needless to say, the contributions of these donors are critical to the current operations of the PHCP (e.g., the provision of drugs by UNICEF, the maintenance of vehicles by AMREF, etc.).

Whether donor contributions should be increased to further the distribution or enlarge the scope of PHCP services in light of the GOS' current inability to cover recurrent costs is a difficult question. This author would second the recommendations of the AMREF Assessment Team in the 1981 Health Sector

Assessment Studies of Upper Nile, Lakes, Bahr El Ghazal and Jonglei Province which stress the need to use resources to improve existing physical structures, and human resources for rural health in the Southern Region of the Sudan at the expense of developing new structures or new personnel as has been proposed by WHO.[7] It would be expected that donors would be more likely to increase their assistance to the PHCP if the GOS and people of the Sudan can demonstrate that they are able to sustain the system which currently is in existence. In the short run, donors may wish to provide those PHCP commodities which require foreign exchange. In the case of AID, this could be done with Development Assistance monies or with the means available in the Commodities Import Program.

Reduce PHCP Costs

Since a reduce in program costs often results in a reduction in the quality of the program's output, the following recommendations are intended to suggest ways to reduce costs while minimizing negative effects on the quality of the program.

A. Drugs

Studies should be undertaken to determine what should be the content of the drug kits based on the actual needs of dispensaries and PHCUs in the Southern Region, controlling for the size of the population which the facility serves. The NGOs in the Southern Region who distribute drugs and supervise PHCP facilities would be in the best position to provide information on the actual drug requirements in these units.

B. Vehicles and Petrol

Purchase of robust vehicles with high mileage per gallon is recommended.

Development of incentives or sanctions to reduce the use of PHCP vehicles for personal reasons and to increase the attention of drivers to vehicle maintenance should be undertaken.

The contracting of vehicles for the intermittant transport of materials (e.g., construction) should be considered.

Consideration should be given to ways that

transportation for distribution of materials or drugs can be reduced.

C. Construction

Donors financing the construction of PHCP facilities should develop construction requirements which minimize the use of materials which require foreign exchange for their maintenance.

New construction should only be undertaken when the long term need for such a facility has been determined and no existing structure could be less expensively modified or expanded for the purpose intended.

Construction of facilities near, rather than far, from transportation routes is recommended in order to reduce transportation expenses for bringing in supplies.

D. Health Personnel

The training of traditional healers and TBAs on the basics of PHC should be tried on an experimental basis. Since these health care providers are currently in the "private sector," this training will not result in the recurrent costs of salaries.

NOTES TO THE TEXT

1. To determine the recurrent costs of the PHCP, both fixed and variable recurrent costs must be considered.

   Fixed: Cost which do not vary with the amount of service performed, e.g., salaries, rent, building maintenance.

   Variable: Costs which vary depending upon how much the service is utilized, e.g., cost of drugs used, petrol for supervision.

   However, given the paucity of data on costs of different PHCP inputs and/or utilization of them, the items of expenditure are all treated as though they were fixed costs.

2. WHO, Country Resource Utilization Review, Sudan, 15-28 November, 1981, HRG/CRU.5 (WHO: Geneva, 1981), p. 15.

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3. The value of drugs, supplies and equipment to dispensaries decreased by 76 percent in S£ (or 94 percent in US$), and to PHCUs by 55 percent in S£ (or (88 percent in US$), between 1975/6 and 1980/1.

	1975/6 "Green Book" Estimate	1980/1 AMREF Report Estimate	Percentage Decrease (S£)	Percentage Decrease (US$)
Dispensary	4,793, ($13,900)	1,155 ($866)	76%	94%
PHCU	1,629 ($ 4,724)	729 ($547)	55%	88%

Rates of Exchange:

1975/76: 1 S£ = US$2.90
1980/81: 1 S£ = US$0.75

The US dollar value of the UNICEF inputs per PHCU as of October 1981 is as follows:

Equipment	$ 427.79	$ 85.45
Instruments	$ 468.24	$ 135.17
Drugs (6 mos)	$ 801.57	-
(3 mos)	-	$ 250.58
(12 mos)	$1,603.14	$1,002.32

Thus the AMREF/RMOH report is an underestimate of what will be the recurrent cost of PHCP drugs and supplies for 1981/82.

4. Merely considering ways to decrease costs of the PHCP (as it is conceived of in the "Green Book") and of increasing revenues in support of the PHCP puts aside a very important issue for the Sudan, i.e., given increasingly scarce financial resources, both Sudanese and external (in terms of credit, grants, or loans), what investments would improve the long-run quality of life in the Sudan? Investments in "productive" enterprises (e.g., agricultural or industrial development) or in improving the "stock of human capital" (e.g., health and educational status of the population)?

5. Democractic Republic of the Sudan, 1976, p. 122.

6. Warille, N. Visit of Torit and Kapoeta District, 30 March-3 April, 1981, Some Problems of Health Services and their

Resolution, 1981.

Note: The development of drug cooperatives may be more desirable than charging for drugs at the PHCUs for the following reasons:

--It may not be possible to keep RMOHSW and UNICEF stocks separate at the PHCU, and if it is not possible to charge for UNICEF drugs, it will be difficult to charge for the others;

--Even if the CHW is away from the area, the people can purchase drugs at the drug cooperative.

However, when these cooperatives attempt to purchase drugs from the Central Medical Store, the store may not have drugs because of a lack of foreign exchange. Thus donors (UNICEF, AID and others) should consider providing drugs in exchange for Sudanese currency, which the donors could then utilize to maintain their staff within the Sudan. AID is currently doing this to a limited extent with ESF monies, but might consider utilizing DA monies in the Sudan in this way as well.

7. This author, in light of the GOS' economic difficulties, would not endorse the funding proposal #1 in WHO, Country Resource Utilization Review Sudan, 15-28 November, 1981 (HRG/CRU.5, 1981), unless the interested donor would be willing to pay for the recurrent costs of such a project over the next two decades. (This proposal would increase the number of PHCP workers so as to have a ratio of 1/1,000 and create Rural Health Centres with 1 bed/500 population; however, the existing in-patient capacity of existing rural hospitals is only 20 percent utilized because the facilities do not have food for patients for lack of recurrent funds.

8. Research sponsored by the GMT found since these PHCUs are supervised by the GMT they presumably have better supplies of drugs and other support than GOS units and thus utilization of GOS facilities would be expected to be even lower. Further, issues of competition between different types of rural health personnel have generally been overlooked in PHC planning. In the case of the Sudan, competition between CHWs and MAs, CHWs and Nurses, and CHWs and VMWs (as VMW role expands) may be an economic issue which requires further attention.

9. Experiments known to the author include:

--Visitors' fees at hospitals

--Contribution boxes at PHCUs

--FP/MCH project in Khartoum

--Drug cooperatives of the Sudan Council of Churches.

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Annex A

List of Persons Contacted

Juba

Dr. Noel Warille, Director, RMOH/SW
Bona Thiang, Director, Sectoral Planning, RMOF/EP
John Russie, Acting Director of Budget and Revenue, RMOF/EP
Dr. Alec Khoc, Medical Training Offices, PHCP/RHQ
Emmanuel Leila, Senior Medical Inspector, PHCP/RHQ
Allam Caesar Georgeson, Accountant, PHCP/RHQ
Aquilino Mike Oduma, Survey and Evaluation, PHCP/RHQ
Eban Taban, Statistics, Regional Medical Commission
Pons Otto Loduma, Regional Warehouse, PHCP
Jefrey Ocan Moring, Regional Warehouse, PHCP
Robert McCandliss, Area Coordinator, USAID/Juba
James Paton, Project Manager, AMREF
James Rosenberry, Operations Officer, AMREF
Joyce Naisho, Public Health Nurse, AMREF
Tom Ateka, Public Health Officer, AMREF
Stephen Allen, UNICEF
P. Bala Subramarian, UNICEF
Dr. Winfred Zacher, GM

Khartoum

Don Dembowski, Economist, Program Office, USAID/K
Peter Kranstover, Economist, Projects Office, USAID/K

Washington, D.C. or USA

Abby Bloom, PPC, AID/W
David Dunlop, PPC, AID/W
Alex Newton, AFR/DR
John Wooton, AFR/EA
Susan Stout, IDSC, Battelle
Dr. Michael Gerber, AMREF, New York

Annex B

Table B.1

PERCENT OF PROVINCIAL BUDGETED EXPENDITURES TO HEALTH
SOUTHERN REGION

1980/81

Province	Public Health and Hospitals (%)	Total Provincial Expenditures (SL)
Bahr El Ghazal	25.9	6,757,812
Eastern Equatoria	17.9	7,383,749
Jonglei	19.0	3,702,712
Lakes	21.8	3,847,660
Upper Nile	26.3	6,375,076
Western Equatoria	30.4	4,314,168
Total	7,601,869	32,381,177

Source: Democratic Republic of the Sudan, Southern Region, People's Executive Councils, Annual Budgets, 1980/81.

Table B.2

LOCAL COUNCIL'S BUDGETED EXPENDITURES (SŁ)
SOUTHERN REGION
1980/81

Province	Total Expenditures (SŁ)
Bahr El Ghazal	1,106,787
Eastern Equatoria	1,186,412
Jonglei	628,695
Lakes	648,875
Upper Nile	1,364,135
Western Equatoria	497,038
Total	5,431,942

Note: The figures for determing the proportion of local council revenues for health or the PHCP are not available.

Source: Democratic Republic of the Sudan, Southern Region, People's Executive Councils, Annual Budgets, 1980/81.

Appendix F

PHCP REPORTING FORMS:
HIS DATA FORMS TO BE USED BY PHCUs

سجل نشاط تطوير الريف والارتقاء بالحالة الصحية

PROMOTIVE AND PREVENTIVE ACTIVITIES REGISTER

تاريخ نهاية النشاط DATE ACTIVITY ENDED	نوع النشاط NAME OF ACTIVITY	تاريخ بداية النشاط DATE ACTIVITY BEGAN

عمر الأم AGE OF MOTHER	اسم الأم NAME OF MOTHER	تاريخ التبليغ عن الولادة DATE BIRTH REPORTED	تاريخ الميلاد DATE OF BIRTH	TYPE BIRTH نوع الولادة		الجنس SEX OF CHILD	اسم المولود NAME OF CHILD	رقم مسلسل SERIAL NUMBER
				مولود ميت BORN DEAD	مولود حي BORN ALIVE			
9	8	7	6	5	4	3	2	1

DEATH REGISTER سجل الوفيات

تاريخ التبليغ عن الوفاة DATE DEATH REPORTED	السبب المشتبه للوفاة SUSPECTED CAUSE OF DEATH	تاريخ الوفاة DATE OF DEATH	العمر عند الوفاة AGE AT DEATH	الجنس SEX	اسم المتوفى NAME OF DEAD PERSON	رقم مسلسل SERIAL NUMBER
7	6	5	4	3	2	1

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OUTPATIENT REGISTER

رقم مسلسل SERIAL NUMBER	اسم المريض NAME OF PATIENT	الجنس SEX		العمر AGE OF PATIENT						مكان الاقامة RESIDENCE	الشكوى أو المرض COMPLAINT OR DISEASE	نوع الشكوى TYPE COMPLAINT		العلاج أو الاجراء الذى اتخذ TREATMENT AND ADVICE	التحويل REFERRAL
		ذكر M	أنثى F	أقل من سنة Under 1	١-٤ 1-4	٥-١٤ 5-14	١٥-٢٤ 15-24	٢٥-٤٤ 25-44	٤٥+ 45+			جديد NEW	قديم OLD		
١	٢	٣	٤	٥	٦	٧	٨	٩	١٠	١١	١٢	١٣	١٤	١٥	١٦
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

DEMOCRATIC REPUBLIC OF THE SUDAN-MINISTRY OF HEALTH-DEPARTMENT OF HEALTH STATISTICS AND RESEARCH

PRIMARY HEALTH CARE UNIT MONTHLY REPORT

Name and Type of Unit ________ Report Month and Year ________ Village Where Unit is Located ________ Province ________ District ________

I. COMMUNITY DEVELOPMENT AND PROMOTIVE ACTIVITIES

TYPE ACTIVITIES	Number Active Projects During Month	Number New Projects During Month
ENVIRONMENTAL AND COMMUNITY DEVELOPMENTAL PROJECTS:		
1. Protection and Development of Water Supplies		
2. Teaching and Assisting in Proper Refuse Disposal		
3. Teaching and Assisting in Proper Latrine Construction		
4. Building New Roads, Bridges and other Buildings		
5. Health Inspection of Markets and Shops		
6. Control of Insects, Animals and other Pests		
FARMING, FOOD AND NUTRITION ACTIVITIES:		
1. Teaching and Assisting in Proper Food Protection		
2. Teaching and Advising on Proper Nutrition		
3. Teaching and Advising on New Farm Crops		
4. Teaching and Advising on New Breeds of Cattle and Animals		
HEALTH EDUCATION TALKS AND MEETINGS:		
1. Meeting with Community Leaders		
2. Health Education Talks with Families		
3. Health Education Talks to Schools		
ASSISTING OTHER HEALTH PERSONNEL:		
1. Vaccination Campaigns		
2. Midwives, Health Visitors in Maternal and Child Health		
ACTIVITIES NOT LISTED ABOVE:		
1.		
2.		
3.		

NUMBER OF DAYS DURING MONTH YOU PARTICIPATED IN COMMUNITY DEVELOPMENT AND PROMOTIVE ACTIVITIES ________ DAYS

II. DEATHS REGISTERED.

AGE OF DEAD PERSON	NUMBER OF DEATHS M	F	Total
Under 1 yr.			
1-4			
5-14			
15-24			
25-44			
45+			
Unkn			
Total			

III. VACCINATIONS PERFORMED

TYPE VACCINATION	NUMBER
MEASLES	
BCG	
TRIPLE	
POLIO	

IV. OPERATIONS PERFORMED

TYPE OF OPERATION	NUMBER
Removal of Foreign Body	
Abscess	
Tooth Extraction	

V. BIRTHS REGISTERED

AGE OF MOTHER	BIRTHS Born Alive M	F	Born Dead M	F	Total Births M	F
10-14						
15-19						
20-29						
30-39						
40+						
Unkn						
Total						

VI. MATERNAL AND CHILD HEALTH ACTIVITIES

NAME OF ACTIVITY	NUMBER
Pregnant Women Seen	
Pregnant Women Seen with Toxaemia	
Pregnant Women Seen with Anaemia	
Difficult Deliveries Referred to Hospital or Health Center	
Women Attending Post Natal Clinics During Month	
Women Died as Result of Child Birth	
Children Less Than 5 Attending Clinic	
Children Less Than 5 Referred to Hospital or Health Center	
Children Given Oral Rehydration Salt	
Doses of Oral Rehydration Salt in Stock at End of Month	

VII. LABORATORY INVESTIGATIONS

TYPE LAB INVESTIGATION	NUMBER
Malaria	
Bilharzia	
Urine	

VIII. OUTPATIENTS FOR THE MONTH

COMPLAINTS OR DISEASES	NEW CASES BY AGE BY SEX: Under 1 M	F	1-4 M	F	5-14 M	F	15-24 M	F	25-44 M	F	45+ M	F	Total M	F	Number Revisits	Number Referred
Malaria																
Chest Infections																
Tonsillitis																
Diarrhoea																
Dysentary																
Infectious Hepatitis																
Measles																
Nutritional Diseases																
Injuries, Wounds, Bites																
Purulent Conjuntivitis																
Skin Diseases																
Gonorrhea																
Worm Infestation																
Tetanus																
TOTAL																

NUMBER OF DAYS DURING MONTH CLINIC OPEN FOR TREATING PATIENTS ________ DAYS.

IX. COMMENTS

CHW OR M.A. ________

SUPERVISOR ________

____
Signature (preparer of report)

____
Date Report Prepared

Best Available Document

Appendix G

FIELD TEAM ASSIGNMENTS FOR INTERVIEW GUIDES AND FIELD VISITS; RECOMMENDED NUMBER OF INTERVIEWS; AND INTERVIEW GUIDES

APPENDIX G

ASSIGNMENTS FOR INTERVIEW GUIDES

Accessibility/Coverage/Acceptability and Community Participating

Dr. Deria, Chairman
Dr. Nyanzi
Dr. Bermany
Dr. Parmena

Health Personnel
Dr. Youssef, Chairman
Dr. Ryder
Dr. Musbah

Managerial Systems
Dr. Yacoob, Chairman
Dr. Biely
Dr. Eisa
Dr. Markarian

Health Information Systems
Tony Carter, Chairman
Dan Marwa
Hillard Davis
Dr. Balla

Logistics Vic Evans, Chairman
(Ski) Bernard Wisniewski
Mark Taban
Catherine Beckley
Gary Leinen
Mick Campbell

Costs
Robin Barlow
Dayl Donaldson

TEAM ASSIGNMENTS FOR FIELD VISITS

Kordofan	Kassala	Wau	Malakal
Youssef Barlow	Yacoob	Deria	Carter Campbell
		Beckley	Nyanzi Taban
	Ski Bermany Musbah	Parsmena	
Eisa Ryder Balla	Davis	Marwa	Juba Donaldson

RECOMMENDED NUMBER OF INTERVIEWS BY EACH TEAM BY CATEGORY OF INTERVIEWEE

Category	Number
Village Leaders	3-4
CHW or NCHW	5-6
Village Midwife	1-2
MA	2
SO	2
Tutors and other trainers	4
Provincial officials, such as Commissioner/Deputy	2-3
Statistical Clerk, Sr; District Hosp. Statistical Clerk	2
Senior MA/Senior PHC Inspector/Medical Inspector	4-5
Storekeeper (regional/provincial)	2
Central MOH	4

What is the total population in the area?

How many people are served in this area by MOH Health Services?

KEEP YOUR EYES AND EARS OPEN!

INTERVIEW GUIDE

I. Village Level

SSU Leader
Village Development Leader
Parent teacher committee
Sheik
Heads of families (located close to and far from health unit)
Health unit committee (council)? (by whatever name)
School teacher
TBA
Traditional healer

Rural Council HQ/District HQ

-Local government officers
-Community leaders
-SSU Leaders
-Large development schemes management

A. Questions

Have you had any contact with health workers?

With which category of worker?

What are his activities?

Describe the nature of your contact with this health worker.

Do you go to the dispensary for care, does a villager have to go to the CHW first?

B. Do you participate in planning for the health care in the area?

Did you contribute to the establishing of the PHCU and how?

Does the community share in maintaining the PHCU? and how?

How is the CHW selected for training?

Records (documents): Review for community contribution, e.g. land, building, money and animals donated, voluntary labor.

C. Where do you go when you are sick?

Where else can people go when sick?

Why do you prefer to go there when sick?

Why don't you go to the health unit when sick?

Are you satisfied with the services provided?

Are there major health problems of your community?

Is the health unit open every time you attend?

Do you know why it is closed?

What gifts/money/ other rewards do you give the healer for their services?

Villager (not a patient) Location_____Age_____Sex_____HH Size_____Position in HH_____

1. When you are sick from whom/where do you seek care?

   -PHCU, NHCW

   -dispensary

   -provincial/regional hospital

   -drug shop

   -traditional healer, midwife

   -other

2. Do you pay anything for your treatment?

   Yes_____, what? To whom?_____

   _____pts., # of_____

   _____goods, describe_____

   _____ No

3. What is the payment for: _____fee of healer _____drugs _____injections

   _____dressing?

4. Have you ever gone to a government facility (PHCU, Dispensary)?

   Yes_____, Do you pay a fee/something in kind?

   Yes_____How much, what?_____ How collects the money?_____
   How is it collected?_____

   No_____

5. During one month, how much money or goods does your household spend for medical services or drugs?

   _____pts. #_____

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INTERVIEW GUIDE FOR COMMUNITY HEALTH WORKER

Where did you receive your training as a CHW?

How many years ago were you trained?

What was the duration of training?

Was your training adequate to meet the kinds of problems you encounter in your village? Describe.

Have you had any refresher or continuation courses since you graduated?

How many households do you cover?

How large is the population you cover?

Supervision

How frequently are you visited by your supervisor?

When was the last visit?

What does the supervisor do during his visit?

How many have you referred in the past month? Why? Where?

How do you travel around the community (what sort of transport)?

Do you have a trip record? How often do you use it?

PHCU

How many persons work in the unit?

What is daily attendance at this unit?

Records: Review daily attendance; characteristics of attendance - age/sex.

Observations: Check sanitation in and around the unit; availability of water, state of building, drugs available and the main types.

For CHW students: How do you like your training? How could it be improved?

How do you help in the health programs for the following: malaria, EPI, MCH, Environmental sanitation, Health education, Other?

Do you know the malaria worker?

How many times did you help him during the past year?

What services do you give to people for malaria? Immunizations? Sanitation?

Do you think the health services offered here have casued any change in the health status of the community?

What health problems have been identified by the community?

How many days in the week is the PHCU open?

If the unit is closed on certain days, what is the reason for that?

(Observations: Record whether all the health units you chose to visit were open and function.)

Is there a health committee? When did it last meet?

What are the activities of the committee?

What other committees exist in the area?

Facilities and Supplies

What supplies are on hand?

Do you order drugs and supplies for the unit?

How often and for what period of time?

From whom do you receive your supplies?

When ordering, do you use the standard list of drugs?

If drugs are not available at the unit, what happens?

Where do patients go to get drugs/receive treatment if drugs are not at the unit?

When you receive the drugs/supplies that you request, what proportion of the order is actually received?

Are the drugs/supplies adequate for a two-month period?

Do you complete the Monthly Drug Consumption Form and Drug Supply Card?

When did you last order supplies and when were they received?

(Observation: Does the CHW comment on the drug situation in his monthly reports?)

Do you discuss drugs with the Village Council?

Has the community considered establishing a Community People's Drug Store/Pharmacy?

Has the community participated in the storage and transportation of drugs/supplies?

Are supplies received in good condition when they reach the PHCU?

(Records: At the Prov. and at local level look for any relevant documents or letters.)

How do you travel around the country? What kind of transport?

Cost Information

CHW/ _

Is any money/goods collected from patients at the PHCU/dispensary?

_____Yes, How is the money collected? Are there variable rates for different patients? Elaborate.

What is the money spent for?

_____salaries

_____drugs

_____petrol

_____repair of facility

_____No, Why not?

_____government policy

_____other, explain_____

_____don't know

Do you think money/goods should be collected?

_____Yes, why?_____

_____No, why not?_____

Do you think people would be willing to pay for the services they receive?

_____Yes, why?_____

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Is there a collection box at this facility?

_____No

_____Yes. How is it managed?

How much on average is collected?_____per person?

_____per week?

Do you receive any money from other levels in the health system?

_____Yes, Which level(s)?

_____MOF, etc.

_____Regional MOF

_____Provincial

_____District

Do you usually receive your salary on schedule?

_____Yes. _____No, why not?_____

How many other healders are in a few miles radius of your facility?_____#

Who are they? *_____pharmacists

*_____TBA's

*_____traditional healers

Try to look for budgetary records or any inventory or salary receipts in the units.

Report what kind of information is available or not.

Job Description for CHW

Definition

A CHW is an indigenous member of the community, selected by that community and paid by the Rural Council, to provide PHC services to a population of approximately 4000 people.

He is supervised technically by the MA, and politically and administration by the community, through the village development council, and the SSU basic Unit. The institutions are together responsible for his discipline and can recommend punishment or dismissal, through the M.A., to the Assistant Commissioner for Health for the province

Promotion Activities

The CHW is required:

- to maintain constant contact with the members of the community and with their leaders, as well as with other community development workers
- to participate in community projects
- to advise the community on water supplies; collection and disposal of refuse;good nutrition based on local food; health education e.g. demonstration of food and diet; and use of latrines

Health Care Activities:

Taking into consideration the limited education and training of the CHW, a carefully selected number of diseased considered as highly prevalent in most communities has been drawn up, and appears as list(1) below. For these the CHW is to offer ambulatory treatment and preventive advise. He will refer to the M.A. in the area of his Primary Health Care Complex, all complicated cases and all cases where he suspects any of the diseases given below in List (2)

List (1)

1. Malaria
2. Gastroenteritis dysentry and diarrhoea
3. Respiratory disease upper and lower,including asthma and diphtheria
4. Measles
5. Wounds including minor burns
6. Abscesses
7. Skin diseases, including scabies

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8. Malnutrition and anaemia
9. Eye infections
10. Bites and stings: snake, scorpion, and dog (emergency first aid only)

List (2) : (to be referred to the dispensary)

1. leprosy
2. Tuberculosis
3. Suspected worm infestation
4. Bilharzia
5. Ear diseases
6. Kalazar
7. Bites and stings: snake, scorpion and dog
8. Cerebrospinal meningitis (reported to MA, not necessarily referred)
9. Any other condition

Information System

The CHW is responsible for:

- daily registration of all activities carried out in PHCU, making appropriate use of the forms, cards and registration book
- monthly reports or activities, to be discussed by the village council before being sent to the MA
- keeping records of his work for a period of at least give years and
- registering all births and deaths as well as issuing birth and death certificates

Drugs and Supplies

The VHW is responsible for:-

- a monthly report on the consumption of drugs and supplies, recording the quantities remaining; and
- a six monthly report requesting replacement of perishable equipment

Training and Status

A CHW is to be given refresher courses to increase his professional knowledge. These whose educational standard is reasonably good, that is, who have full junior secondary scholing, will have the opportunity of being selected to join the general training course for Medical Assistants, after four years' of service in a PHCU. This opportunity, associated as it is with benefits for the worker, serves, serves as an incentive.

STATISTICS - CHW

(1) Types of Registers existing at PHCU/Dispensary (Tick appropriate box.)

- (a) Outpatients (daily attendance) ☐
- (b) Promotive & Preventative ☐
- (c) Births ☐
- (d) Deaths ☐
- (e) Visitors Book ☐

(2) Details of Registers.

(a) Is item recorded (Y:Yes; N: No)
(b) Do records appear to be complete (Y,N)
(c) Does information appear to be accurate (e.g. is it consistent (Y,N)

	(a)	(b)	(c)	Comments
(a) Outpatients Names Sex Age Residence Complaint New/old case Referred (Yes/No)				
(b) Promotive/Preventative Project name Date started Date ended				
(c) Birth Register Name of child Date of Birth Mothers name Baby alive/died Sex				
(d) Death Register Name of deceased Date of death Sex Suspected cause Age at death				

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3. Training Courses - PHC record systems/statistics

	(a) Original courses	(b) refresher courses
(i) Name of course		
(ii) Where held; when (year)		
(iii) Length of course		
(iv) Proportion of time on records/statistics(%)		
(v) Post of statistics instructor		
(vi) Manuals/textbooks		

4. Monthly Reports.
   (i) Which was the month of the latest report submitted?_____
   Observe copy & fill in (ii) tick if complete, otherwise comment.
   (ii) Sections completed:
      a. Outpatients (daily attendance)_____
      b. Promotive & Preventative_____
      c. Births_____
      d. Deaths_____

5. Have you discussed the latest report with your village health committee?
   Yes/No:_____(If no, why not?_____)

6. Do you get any comments from your supervisors on the monthly reports?
   Yes/No:_____ (If yes, in what form_____verbal; _____written?)

INTERVIEW GUIDE

VILLAGE MIDWIVES

When were you last visited by your supervisor?

How frequently do you get visited by your supervisor?

What does a supervisor do when they come to see you?

How many people work in this PHCU? Who are they?

How were you selected?

What kind of training did you receive?

Was your training enough to carry out your job in the community?

Have you had any refresher courses or continuing education? What was content?

What further training do you think you need?

Describe a typical day of your work: what percentage of your time is devoted to preventative, promotive, curative?

Have you been involved in antenatal care?

How many pregnant women do you see per week?

How many deliveries do you do per week?

When do you refer cases to MA or Dispensary/hospital?

Do you do any post partum care?

Are you involved in child immunization?

What health education classes are given to mothers about child feeding?

What supplies (drugs/supplies) are on hand? How are new supplies requested/delivered?

How do you travel around the community (what sort of transport)?

Do you have a trip record? How often do you use it?

How many babies have you delivered dead in the past month?

How many mothers have you delivered who died either during or after delivery?

INTERVIEW GUIDE FOR MEDICAL ASSISTANTS

What work do you do and who is your supervisor? (Post, not here)

When were you last visited by your supervisor? (Check visitors book)

How frequently do you get visited by your supervisor?

What does the supervisor do during his visit?

How many people work in this Dispensary/Health Center? Who are they? (Posts & Numbers)

How many CHU are responsible to you? VMW? Sanitary Overseers?, Asst. Sanitary Overseers?

How were you selected for this job and what kind of training did you receive?

Was your training enough to carry out your job?

Have you had any refresher courses or continuation courses? What was its content?

What further training do you think you need?

Describe a typical day of your work? (What proportion of time is devoted to preventative, promotive, curative? Interviewer to estimate percentages).

How many cases have you referred in the past month? Why? Where? Do you normally get reports from the doctor on these cases?

How often do you seek help from a doctor? For what sort of reason?

What supplies (drugs/supplies) are on hand? How are now supplies requested/delivered?

What supplies or drugs do you feel are needed and are not at hand?

What role do you play in requisitioning of drugs/supplies for the PHCU?

Do you distribute the drugs to the PHCU? How often?

What form of transportation is utilized?

How do you travel around the community (what sort of transport)?

Do you have a trip record? How often do you use it?

How many days in the week is the dispensary open?

If the Unit is closed on certain days, what is the reason for that?

What is the daily attendance at this unit?

Records: Review daily attendance, comments on characteristics of attendance (age/sex).

Do any patients pay for treatment? Cash/kind?

What happens to the money so collected?

What other contributions are made to the Dispensary/Health Unit in cash/kind; how used?

What records do you keep about supervisory visits?

If no supervision is going on, what would help you to do supervision?

STATISTICS - MA

(1) Types of Registers existing at PHCU/Dispensary (Tick appropriate box.)

- (a) Outpatients (daily attendance) ☐
- (b) Promotive & Preventative ☐
- (c) Births ☐
- (d) Deaths ☐
- (e) Visitors Book ☐

(2) Details of Registers.

(a) Is item recorded (Y:Yes; N: No) / (b) Do records appear to be complete (Y,N) / (c) Does information appear to be accurate (e.g. is it consistent? (Y,N)	(a)	(b)	(c)	Comments
(a) Outpatients				
Names				
Sex				
Age				
Residence				
Complaint				
New/old case				
Referred (Yes/No)				
(b) Promotive/Preventative				
Project name				
Date started				
Date ended				
(c) Birth Register				
Name of child				
Date of Birth				
Mothers name				
Baby alive/died				
Sex				
(d) Death Register				
Name of deceased				
Date of death				
Sex				
Suspected cause				
Age at death				

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3. Training Courses - PHC record systems/statistics

	(a) Original courses	(b) refresher courses
(i) Name of course		
(ii) Where held; when (year)		
(iii) Length of course		
(iv) Proportion of time on records/statistics(%)		
(v) Post of statistics instructor		
(vi) Manuals/textbooks		

4. Monthly Reports.
   (i) Which was the month of the latest report submitted?_____
   Observe copy & fill in (ii) tick if complete, otherwise comment.
   (ii) Sections completed:
      a. Outpatients (daily attendance)_____
      b. Promotive & Preventative_____
      c. Births_____
      d. Deaths_____

5. Have you discussed the latest report with your village health committee?
   Yes/No:_____(If no, why not?_____)

6. Do you get any comments from your supervisors on the monthly reports?
   Yes/No:_____ (If yes, in what form_____verbal; _____written?)

INTERVIEW GUIDE SANITARY OVERSEER

Where do you work?

How large is the population you serve?

How big is this in terms of distances - from one end of your area to the other?

Describe a typical days activities.

What kind of training did you have? Where? Duration?

Have you had any refresher courses or continuating courses? Where? Duration? Content?

How far do people have to travel to collect water?

What are the major sources of water? Dug wells, Streams/springs, Other?

Do you recommend that water be boiled?

What percentage of households do boil drinking water?

What percentage of your population have pit latrines in their households?

How many latrines are in the area you serve?

How many latrines were dug during the last year?

Describe your activities directed to the control of mosquitoes, flies, rodents.

How do you handle refuse disposal problems?

How do you travel around your area? Foot, bicycle, donkey, other?

Who is your supervisor?

How frequently do you see him each month (year)?

What does your supervisor do during his visit?
(Group responses: review records, etc.,make visits to households, meet with community leaders, discuss problems/solutions.)

Do you work with the CHW or with the MA?

How often do you see him? (per week)

Describe your contacts with him.

Does the CHW come to you to discuss solutions to problems of sanitation?

What kind of additional training would you think would help you in your work?

INTERVIEW GUIDE

TRAINING CENTERS

1) For use in community training center/or village midwife school.

How old is this school?

How many CHW's are supposed to be trained at this school by 1984?

How many have already been trained? 1982, 1981, 1980 - Total.

What is the length of training?

How many students per class?

What subjects are taught? By whom?

What teaching methods are used - lectures, discussions, observation, role playing, other?

What supplies and equipment, A-V materials or printed materials are available?

Do students live in?

What are physical facilities - classrooms, dormitory?

What percentage of teaching time is practical work - classroom work?

Where are students sent for experience (practical) hospital, dispensary? Community, other?

How are students recruited and selected?

How many instructors do you have - full time teachers, part-time teachers?

Of tutors, what was the background? How were they selected? How were they prepared to be a tutor? Where? How long?

Have you ever visited one of your trainees who has graduated in his new job?

Do your graduate CHW's go back to their own communities to work? All of them?

Has the CHW received training in ordering drugs/supplies?

Notes: Collect materials available.

Interview students and try to observe and ask questions on teaching methods used.

INTERVIEW GUIDE

ASSISTANT COMMISSIONER OF HEALTH/REGIONAL DIRECTORS

Vehicle Use

Each province has been provided 8-9 vehicles for supervision. Who is assigned a vehicle?

What are they used for?

Are the vehicles running?

Why not?

Health Personnel

What are the different categories of health personnel in the province?

Where are they working?

What are their qualifications?

What is the ratio of personnel (different categories) to population?

What is the budget for drugs/supplies/equipment at the regional level?

What is the actual expenditures for drugs/supplies/equipment at the regional level?

Are there job descriptions for each category of personnel?

How were these job descriptions made?

How are trainees selected and by whom? CHW's, VMW's, MA's, Sanitary Overseers?

How are training programs evaluated?

What is the cost of training a CHW,Nurse, VMW, MA?

Who decides how and where those who have completed training will work?

Is there a career structure and what possibility exists for advancement within service?

How do you plan for the development of your health care facilities?

At village level, does the community participate in such planning? How?

How and what does the community contribute to the construction and/or maintenance of the PHCU?

How do you select the CHW?

Has the community any role in supervising the work of the CHW? What?

What health problems are identified by the community?

Is there any inter-sectorial committee at the Prov. level?

When was your last meeting with the health council/committee?

What was discussed?

Who participated in the planning process for the province other than health personnel?

Who builds the facilities and who furnishes them?

Who pays for them?

What is your role in the supply and distribution of drugs?

Allocation of Funds?

What % of the budget is actually spent on drugs/supplies?

Do you determine priorities and establish allocations for drugs/supplies in your area of supervision?

Do you approve and sign the requests for supplies/drugs?

Do you review the items and quantities ordered?

On what basis are external resources requested and used?

Have you evaluated the impact of external resources?

VEHICLES: For Regional/Provincial

Who has overall responsibility and control of vehicles at the regional level?

How many vehicles are available?

Who supplied them? MOH, UNICEF, USAID? Other agencies, EPI?

How many are operative?

What are the reasons for "off the road" inoperative vehicles? a) petrol b) spare parts?

Are trained personnel available to repair vehicles?

How many drivers have attended the three month driver/mechanic training course in Khartoum? _____

Are spare parts for vehicles available at the regional/provincial level?

Are there procedures established for the ordering of spare parts?

Are vehicles repaired at the regional/provincial level using local resources, mechanics, garages, spare parts, etc?

If vehicles require repair beyond the local capability, how are they eventually repaired?

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Are there procedures established for the repair of vehicles beyond the

Are vehicles being used for their intended purposes?
a. Transport of students for training in the various courses;
b. MCH activities;
c. EPI
d. Delivery of drugs/supplies?

Are records being maintained for vehicles, for example, monthly vehicle control reports. Operator's checklist, Dispatch Log?

What is the cost of vehicles spare parts and repairs?

Last year, what % of alloted budget used. Any constraints?

What can be done at this level to improve the logistics system?

Do you hold meetings to decide who will be trained among your staff?

If so, who participates?

Reporting: When were you last visited by your supervisor?

Did you have any formal training in management and supervision?

How did this training help you in your job? (More meetings, more discussions with colleagues, better planning, supervision?)

Do you have a work plan?

Do you receive additional rewards (incentives, etc.) for participating on any committees? If so, which committees and what incentives?

Please explain the budgetry cycle for health, particularly PHC activities, (discuss the following steps or lack there of)
*collection/calculation of cost data
*program preparation
*budget preparation
*budget submission
*budget approval
*receipt of funds
*dispersement of funds to lower levels
*compensation for underfunding the budget

Are you concerned with donor projects and resources in your province/region?
Yes, explain_____ No_____

The PHCP required the establishment of PHC complexes. The main functions of which are referral of patients, support and supervision of CHWs by the MA. How many have you established in your province?

a)_____# b)_____

Are they functional?
(check reports, etc.)

1. Do you intend to establish them?
If not, why?

A Rural Health Complex has been suggested as a suitable organization structure for the functions of the RHX for the next planning period. Do you agree that it is a

How does the PHCP relate to the programs of the MOH in: malaria, EPI, MCH, Sanitation, Health Education?

Interview Regional and/or Provincial & District directors of programs listed above re:
Coordination of programs activities with PHCP - especially at CHW's and MW's level.
Training of health workers on program activities:
*Who was trained?
*Where?
*Where are they posted now?

STATISTICS

(1) What statistical reports do you get from your staff regularly on the PHC program?

	Title of Report	Frequency	Period covered by latest report Received
(a)			
(b)			
(c)			
(d)			
(e)			

(2) How useful do you find these reports and for what purpose?

	Title of Report	Comments: Usefulness/Purpose
(a)		
(b)		
(c)		
(d)		
(e)		

(3) Do you get feedback from the Regional MOH or Central MOH on the PHC Program data which you submit?

Yes/No:_____

Comments, if any:_____

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FORM FOR STATISTICAL CLERKS

Province_____ Location_____

Interviewee_____ Date of interview_____

Length of service_____ Type of Facility_____

1. Reports Reviewed What statistical or related reports do you get from PHCU or Dispensaries?

Type of Report	How often Received (Frequency)
(a)_____	_____
(b)_____	_____
(c)_____	_____
(d)_____	_____
(e)_____	_____

2. Reports Submitted: What statistical reports based on PHCU/Dispensary data do you submit regularly and to whom?

Type of Report	Frequency	To Whom	Period Covered by latest report submitted
(a)_____	_____	_____	_____
(b)_____	_____	_____	_____
(c)_____	_____	_____	_____
(d)_____	_____	_____	_____
(e)_____	_____	_____	_____

3. Training Courses in Statistics

	(a) Initial/original Course	(b) Refresher Courses
(i) Name of course		
(ii) Where held; when(year)		
(iii) Length of course		
(iv) Proportion statistics (%)		
(v) Past training of statistics instructor		
(vi) Manuals/textbooks		

4. What adding machines or calculators do you have in your section?

5. Collect one copy of each blank form available at the unit and by reviewing available documents develop an impression of what data is usually recorded.

6. Collect from records - monthly and/or annual utilization of the facility and data available on the cost of salaries, drugs and supplies, transport.

Best Available Document

INTERVIEW GUIDE

Medical Inspector Senior Medical Assistant District level

(South) Senior Primary Health Care Inspector

What are your responsibilities?

Did you have any formal training in management and supervision?

Do you have a work plan?

How involved are you in the supply and distribution of drugs/supplies?

Do you establish priorities for the issue of drugs/supplies?

Do you determine allocations of drugs/supplies to the medical units under your supervision?

Is the community getting involved in the storage and transportation of drugs and supplies?

Who participated in the planning process other than you and other health personnel?

Training

What are the factors upon which you select trainees?

Who selects a trainee?

How frequently do you go for help and for what?

What supplies (drugs, supplies) are on hand? How are new supplies requested/delivered?

How do you travel around the community (what sort of transport)?

Supervision

What are the different types of health personnel you supervise?

Do you hold meetings in your department?

Are there job descriptions for each category of personnel?

When did you last visit a PHCU?

Did you write a report?

Whom did you report to?

INTERVIEW GUIDE
PROVINCIAL/REGIONAL STOREKEEPER
DISTRICT/RURAL HOSPITALS

Does the provincial/regional storekeeper order supplies/drugs? If not, who does?

How are items and quantities determined?

From whom does the provincial/regional storekeeper receive his supplies?

Are schedules established for the requisitioning of supplies?

How many months of stocks are ordered at this regional/provincial level?

When did the storekeeper last order supplies and when were they received?

What are the reasons for the delay (if any) between the ordering and receipt of supplies?

Are supplies received in good condition versus broken units, outdated drugs or otherwise unservicable when received?

Are there any records of stocks on hand, on order and when received?

If so, are they complete; are they referred to when ordering?

Are there separate storage facilities for drugs for use at the regional/provincial level versus the dispensary/PHCU?

What is the source of supply for drugs, that is, Central Medical Stores, UNICEF, or other donor agencies, are NGO contributions increasing/decreasing?

Do drugs/supplies reach their intended destinations, that is, dispensaries/PHCU's ?

If not, what are the reasons for the delays?

Have you received training as a storekeeper?

Where did you receive your training?

Duration of training?

Who is your supervisor?

How often do you see him?

What are the major problems for a storekeeper in this area?

When equipment is damaged or broken, what is done with it?

Are spare parts available at PHCU/Dispensary level?

Are spare parts available at provincial/regional level?

Observations made by interviewer: Describe building, Record system, Storage facilities, procedures for distributing supplies to peripheral units,

Are facilities "adequate" (why or why not)?

Are there facilities (refrigerators, freezers) for storing of vaccines, etc. (if not, are they expected to be provided?)

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What is in refrigerator besides vaccines?

Review temperature record for times when internal temperature is above 40° F.

INTERVIEW GUIDE
CENTRAL MINISTRY OF HEALTH

Who plans programs in your department?

How do you communicate with the provinces?

What do you communicate with the provinces about?

How often do you supervise?

Who do you supervise?

How many trained in managerial skills do you supervise?

Who and how were resources (manpower, money, facilities) transferred and allocated to the provinces?

Has action been taken to procure items listed on the essential drug list?

Are procedures established to procure drugs when an "out-of-stock" position is reached or for emergency purposes?

What is the cost of procuring drugs/supplies/equipment?

How are priorities for the procurement of drugs/supplies/equipment determined?

What percent of the budget is expended for drugs/supplies/equipment in support of health system?

How does CMS distribute items which must be refrigerated/frozen while in transit?

Has an equipment committee been established in an attempt to standardize the range and type of instruments and equipment to be purchased and stocked?

What can be done to maximize use of available storage space at CMS?

How are dated items controlled within CMS?

Have schedules for ordering and distribution of supplies to the provinces been established?

Has the movement of supplies from Port Sudan to CMS improved during the last year?

What can be done to improve the logistics system from Port Sudan to Khartoum to provinces?

How many vehicles are assigned to Central Medical Stores?

How many are operational? Are spare parts for vehicles available?

How are the vehicles utilized?

Is there training being conducted within CMS to train employees in the procurement, storage, distribution, transportation and control of supplies?

Are there established procedures for the repair of medical equipment?

Are there trained personnel available to repair medical equipment; such as, X-ray units, microscopes, sterilizers, etc.

Are spare parts available for the repair of medical equipment?

Is there a "loaner" system established to replace an item pending its repair?

Are responsibilities clearly defined for CMS personnel?

Are job descriptions available?

Is there adequate supervision of personnel at all levels within the organization at CMS?

Have standard lists of supplies relevant to each level of health care being prepared?

How many have taken management training/planning/evaluation training?

How did this training help you in your job? (More meetings, more discussions with colleagues, better planning, supervision?)

Weekly Meetings of the Departmental Board

Did you discuss:

MCH
TB
Control of Endemic disease
EPI
Nutrition
Health Education

Did discussion indicate approach for program?

What was on your agenda last week?

Next week?

Do you allocate resources? On what basis?

What coordination mechanism exists between MOH, international and other agencies?

Who participated in the planning other than health personnel, i.e. inter-sectorial personnel?

On what basis are external resources requested and used?

Have you evaluated results of external resources?

How are the results of this evaluation used in the planning process?

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