

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

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THE MINISTRY OF HEALTH AND POPULATION  
THE GOVERNMENT OF THE REPUBLIC OF MALAWI

**MASTER PLAN STUDY  
ON  
STRENGTHENING  
PRIMARY HEALTH CARE SERVICES  
IN  
THE REPUBLIC OF MALAWI**

**FINAL REPORT**

**VOLUME 4  
SUPPORTING REPORT**

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**December 1999**

**ST. MARY'S HOSPITAL  
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In this Report, project cost is estimated at August 1999 price and at an exchange rate of  
US\$1.00 = 45 Malawi Kwacha (MK).

# **Part 1**

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***STUDY RESULTS OF THE FIRST CYCLE***  
***( CENTRAL REGION )***

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## CHAPTER 1: DISTRICT HEALTH POLICY, ORGANISATION AND MANAGEMENT

### 1.1 BACKGROUND AND OBJECTIVES

The study in this section was conducted through document review and structured interviews with key actors at the central and regional level including DHO with the questionnaire prepared based on the Kfelmann's "Assessing District Health Needs, Services and Systems", 1991. This section examines the MOHP and District's organisation and management structure in order to understand (1) the change of functions and responsibilities of the District Health Office (DHO) in line with the MOHP's reform/decentralisation process; (2) the degree of supervision provided by the district health office to health facilities; (3) the inter-relationship between MOHP, CHAM, NGO and other health facilities within the district to increase the overall capacity of health services in the district.

### 1.2 REVIEW AND STUDY RESULTS

#### 1.2.1 National Health Sector Reform

##### 1) Health Organisation and Management Structure in Malawi

Health services in Malawi are provided by four distinct sources: the Government of Malawi (GOM), through (a) the MOHP; (b) the Ministry of Local Government (MoLG); (c) the Christian Health Association of Malawi (CHAM); and (d) private health care providers. Contribution by the private providers is relatively small and reliable records are not available.

The MOHP is the largest health service provider followed by CHAM. MOHP plays a central role in the country's health care system. It has the primary responsibility for the development of policies, strategies and programs for health care services and delivery. It has parallel responsibilities with respect to population and family planning services.

Like many other ministries, the MOHP has three tiers of administration:

- Headquarters, which includes a staff that is estimated to exceed 250,
- Regional offices, of which there are three, and
- Districts offices, of which there are twenty-five

At the headquarters, the MOHP is structured along professional functional lines as follows: curative services, preventive services, nursing services, planning and support services. The headquarters is responsible for policy guidance, standard setting and quality control, monitoring, training of health staff and issues in the provision of these services. At the regional level, the main functions are provision of professional advice to the districts and assistance in the preparation of district health plans.

##### 2) Policy Framework for Reform

Since the end of the Third National Health Plan 1986-1995, the MOHP has been engaged in the process of developing its next plan. In September 1995, the MOHP completed work on Health Policy Framework paper that broadly defined the organisation's objectives, themes and directions for the next ten years. This paper also serves as the reference point to guide a number of other planning activities the MOHP has underway, however, no date had yet been set for completion of this Ten Year Health Plan. In 1996, the Ministry identified six priority issues. These were; decentralisation; human resources development; financing; hospital autonomy; an essential health package (EHP); and the managerial capacity of the districts. Each district was encouraged to create a "district profile" and a "district health plan" called for by the MOHP as a forerunner to the District Health Office planning process.

In recent years, the MOHP has decided that the next health plan will be a five year plan not a ten year one and that it will follow a rational and participatory process, and that it will be developed entirely by nationals. To this end, a draft of the District Guidelines has been developed so that the districts would develop their plans based on a common classification of services, a common analytic framework, a common set of planning guidelines and a shared process which is aimed at giving the community the opportunity of participating fully. The guidelines describe the major health problems of the country, strategies, national goals and objectives to improve the health services, resource development and management to ensure that these are reflected in the district plans. Upon completion, all these plans will be integrated into a national plan.

##### 3) Policy on Decentralisation

The Government of Malawi introduced a Decentralisation Policy of District Focus for Rural Development in November 1993, with the aim to enhance and strengthen the role of the districts in the planning and management of the development process at the local level. A decentralisation process has been initiated, but its scope and time-frame are not yet clear.

As the MOHP alone cannot set the pace or determine the shape or process of decentralisation, details about the broad plan for decentralisation of the central Government have not been announced. This is seen as a significant constraint. Despite the absence of a formal decentralisation framework, the MOHP has nonetheless made notable advances. It has decentralised essential functions in two fields:

- On the financial management side, it has successfully decentralised the administration of its recurrent budget for goods and services (ORT) to the regional level, and
- On the human resources management area, it has successfully decentralised the recruitment and employment of subordinate and industrial class personnel to the district level.

During interviews with key actors in the MOHP, the team

inquired further about the plan for decentralisation. It appears that the MOHP will continue along a path of deconcentration, with emphasis on the development of local planning and administrative systems, and enhancing capacities and competences. In turn, it means that the Central office will shift from direct services delivery to become more policy oriented, regulatory and normative. During the next five years the MOHP will decentralise the management of health facilities and health services to operational managers at district and facility level as a first step towards comprehensive decentralisation in line with local government and the ministry's hospital autonomy policy. Management of physical facilities and financial resources and later human resources will also be decentralised. The present centralised drug and development budget will therefore be decentralised. However, the mechanisms will be put in place to ensure that the drug budget is solely used for drug purchases. Districts will gradually be given greater responsibility for managing their human resources over and above the recruitment, disciplining and promotion of subordinate and industrial class employees which has already been decentralised.

In terms of local models for decentralisation, there are four models which have been under consideration.

The MOHP has been criticised by its own staff for not moving forward on decentralisation in a timely and coherent manner.<sup>1</sup> However, MOHP stressed that the pace at which the decentralisation proceeds is dependent more on central government than the MOHP. To make the decentralisation successful, the Ministry not only needs to continue to develop core capacities and strengthen the existing management capacity at district and facility level, but also continue to lobby central government for further action towards its implementation.

### 1.2.2 District Health Organisation

Within the district level, the senior MOHP officer in a district is the District Health Officer (DHO). DHO is the head of three sections, Preventive/Promotion, Clinical Service, and Administration. Clinical Superintendent and District Nursing Officer (DNO) are two tiers of clinical service section. The Hospital Administrator is the head of administrative section and supervises the Hospital Accountant. The Hospital Administrator is expected to reduce the burden on the DHO so that DHO can concentrate more on clinical services. The District Environmental Health Officer (DEHO) is the head of Preventive & Promotion section. Under the DEHO, there are Assistant Environmental Health Officers (AEHOs) and Health Assistants (HAs). The Health Surveillance Assistants (HSAs) are under the AEHOs/HAs. The Community Health Nurses (CHNs) are under the supervision of District Nursing Officer/DNO (matron) in the organisational chart. HSAs, VHVs, TBAs are under CHNs.

### 1.2.3 District Health Plan

DHO has been formulating the Medium-term Expenditure Framework, an annual activity plan, to negotiate with RHO and other districts for obtaining budgets for their activities. However, DHO has not been formulating a long-term health plan for the district which was required by the MOHP from all the districts for integration into a national health plan for the coming 5 years.

At the time of the study, it was found that DHO had not developed a district health plan, and was not sure yet by when they were expected to formulate one. One of the District Health Management Team members mentioned that two workshops were held by the MOHP to help the district level to formulate its own plan. A draft of District Guidelines was delivered to each DHO to help districts to formulate their health plan. A situation analysis is currently being undertaken by the DHO. As the draft of District Health Office Management Audit suggested, DHO staff might be experiencing "planning burnout"<sup>2</sup> because of that they are required to participate in two similar exercises that employ different methodologies.

Based on the interview with key actors in the Salima DHO, and the issues emphasised both in the draft of Strategic Health Plan and the District Guidelines, the team found that the district is expected to give priority to the following matters.

#### 1) Administrative Management

The MOHP accepts that its managerial structures and systems are weak. What is missing at the organisational level is the system's capacity to respond in a timely and comprehensive manner. Based on this realisation, the MOHP is decentralising the management of health facilities and health services to operational managers at district level including the administrative function.

The Salima district's administrative section is now headed by Hospital Administrator who was recently employed in August 1998. He has the Master's degree in Health Services Administration from Tanzania. The Hospital Administrator in the district is responsible for human resources management within the district and financial management of the hospital. Given the heavy administrative burden that most DHOs feel they carry, some of the organisational arrangements that are being discussed attempt to reduce that burden by shifting some tasks to newly trained personnel.

#### 2) Financial Management

The MOHP is seeking a way to finance the delivery of health services. The MOHP emphasised in the draft of District Guideline that it continues to explore possibilities other than the current "free" system at the district level. All hospitals will be encouraged to offer a certain proportion of their services on a fee-for-service basis in

<sup>1</sup> District Health Office Management Audit, Draft Report, Government of Malawi MOHP, USAID, MSI

<sup>2</sup> District Health Office Management Audit, Draft Report, Government of Malawi MOHP, USAID, MSI



the OPD departments, although it is already introduced in the private wards in Salima district.

However, fees collected through private wards on a fee-for-service basis are still low and there are no clear guidelines for use of this money, although the MOHP stresses, that in agreement with treasury regulations, fees can be retained by the facilities and used to deliver better quality services. A more precise study was conducted and is referred to in Chapter 9.

**3) Human Resources Development and Management**  
Using the draft of District Guidelines, the Salima DHO is going to conduct a situation analysis of the personnel requirements, distribution and utilisation patterns. It also plans to develop an in-service annual training plan for all its personnel. The District Guidelines also include an objective to implement a two-tier management system for hospital and for peripherally based services.

The salaries of the staff working at the district level are paid by the headquarters and employment of professional staff above TA (technical assistant) grade is done by the headquarters, although the DHOs can recruit and employ other types of staff. As for activity based budget, the DHOs are able to negotiate with RHO and other districts at the Medium-term Expenditure Framework discussion table. A more precise study was conducted and is referred to in Chapter 8.

#### 4) Information Management

The health sector operates a number of Management Information Systems (MISs) both in the MOHP, CHAM, NGOs and Donor community. These systems are not integrated and are not functioning well. There is no central coordination to ensure that the information is accurate and readily available for analysis by those who need to use it. The MOHP needs to focus on the integration of all existing information systems into a comprehensive Health Management Information System.

At Salima District, despite the fact that DHO collect a significant quantity of disease and health care data, neither DHO nor their RHOs analyse the information or provide feedback in the form of visible charts and graphs to the next lower level. In short, DHO's capacity for data collection is quite high when compared with weak data analysis capacity. The MOHP clearly recognises that data collected at the district level does not help the managerial decision-making processes. A more precise study was conducted and is referred to in Chapter 10.

### 1.2.4 District Health Management

#### 1) District Health Office (DHO)

As explained earlier in the section of District Health Organisation, the administration of the health care system is done through the District Health Office. In the case of Salima, the DHO who is located in the district hospital building, directs and supervises MOHP health facilities within Salima District and Dedza East, an area which administratively belongs to Dedza District. This is the result of a special arrangement approved by the

Ministry of Health and Population, as the mountains between Dedza East and other areas of Dedza District makes accessibility difficult.

#### 2) The District Health Management Team (DHMT)

The DHMT is a leadership and decision making structure within the DHO. The District Health Officer is the chairman of the DHMT. Other members of the DHMT include the Clinical Superintendent, who plays the role of deputy DHO in the DHO's absence, the District Nursing Officer, head of the nursing section and also Matron of the district hospital, the Hospital Administrator, the Hospital Accountant, (a position vacant at the moment of the visit of the study team,) and the District Environmental Health Officer, head of the environmental and preventive health section. They meet every 2 weeks to discuss financial and management matters.

#### 3) Cooperation and Coordination Between MOHP and CHAM

Although CHAM facilities are not under the MOHP, those located in the Salima District are technically supervised by DHO, while MOHP facilities in Dedza East are technically supervised by the Mua Mission Hospital, a CHAM health facility in the Dedza East.

Clinical support visit is conducted monthly to nine health facilities, both MOHP and CHAM, in Salima District. The team members of this visit include the district health officer, the clinical superintendent, a clinical officer, a dental assistant, an orthopaedic assistant and a psychiatric nurse. The time spent in each health facility per visit ranges between one hour and one hour and a half. The orders for TB drugs required for CHAM are prepared by the DHO for the whole district to be sent to the regional section of CMS.

#### 4) Supervision

##### Supervision by DHO to district health facilities

The DHMT in Salima has set up a supervision system. They conduct two types of supervisory visits; one is a general supervisory visit and the other is a clinical support visit.

The general supervisory visit is scheduled once a month to cover nine MOHP health centres in the Salima District and Dedza East area. The members of this supervisory visit include the accountant, the matron, the clinical superintendent, and the district environmental health officer. The team visits three health centres per day and the supervision takes 45 minutes to one hour per health centre. Each health centre receives one clinical supervisory visit every three months.

##### Supervision given to DHO

General supervisory visit is provided by the Regional Health Management Team (RHMT) three times a year. The RHMT members include the regional health officer, the regional nursing officer, the regional administration officer, the regional accountant and the regional environmental health officer. However, due to the budget limitations at RHO level, supervisory visits are actually held only twice a year. The visit usually takes

one-full day per district. However, the RHO of the Central Region commented that in order to give more comprehensive supervision, it should last at least two days, so the RHMT can visit some health centres and sit at a table with DHO staff to discuss problems and issues.

Apart from the general supervisory visit, supervision is also provided from the regional level to district level by officers in charge of vertical programmes such as the safe-motherhood coordinator, the family planning coordinator, the TB coordinator and others.

### 1.2.5 District Decentralisation

At Salima District, the District Executive Committee (DEC) has been established in the District to give technical guidance and support to the District Development Committee (DDC).

DDC is supposed to involve peripheral level committees (Area Development Committee and Village Development Committee) so that the decisions are made in a more participatory process. DDC is headed by the District Commissioner, who is representing the office of president and cabinet at the district level. Members are representatives of political parties and area chiefs. Members of parliament in the district, two representatives from NGOs in the district, two representative from business community, and chairperson of local authorities of the district.

Though their purpose is to foster dialogue between government and people in the villages, through their representatives, identify plan and implement micro-projects reflecting people's needs in any district or area, the committee lacks in statutory power to raise revenue and maintain services, and has been criticised for lacking accountability and transparency. The intention of the ministry of local government is to evolve DDC to District Council with elected body. There was a plan to conduct local election in conjunction with national election next year, but there are some movements at National level which may not allow doing it (as of September, 1998).

The members of DEC include the head of the departments such as DHO, and NGOs. In line with the decentralisation process, the role of DDC will be expanded. Development priorities will be determined by DDC and DEC, and the health issues will be also considered within the overall district priorities. DDC is assisted by DEC at the district level. At TA or STA level, ADC and AEC will be formulated. At the village level, there will be village development committee. Since the government can not monitor each village, there will be a VDC for a group of villages in Salima. District Development Officer will chair DEC. At the time of our interviews, there was no VDC established in Salima district.

## CHAPTER 2: HEALTH STATUS, DISEASE PATTERNS AND TREATMENT

The Study Team intends to describe the epidemiology of common diseases and childhood nutritional status during this first cycle of the Study. Although the findings obtained are limited due to the small-scaled study scheme and the incomplete health information system in this country, the facts described below will provide the framework to improve the PHC system in Salima District and East Dedza area and scale up to the regional or national level.

## 2.1 NUTRITIONAL STATUS OF CHILDREN

### 2.1.1 Background

In Malawi, malnutrition is a chronic problem. The World Food Programme (WFP) started providing food assistance to vulnerable groups in the country from 1972. It also promotes the rehabilitation of severely malnourished children through feeding them at Nutrition Rehabilitation Units (NRU) or at paediatric wards along with their mothers.<sup>3</sup> Nevertheless, a recent data from the 1992 Malawi Demographic and Health Survey (DHS) conducted by the National Statistical Office shows that nutritional status of Malawian children to be one of the worst among sub-Saharan African countries. One in two (49%) children under 5 years is stunted or, in other words, chronically undernourished. More than one in four (27%) children are underweight for his or her age. One in 20 (5%) children is wasted or, in other words, acutely undernourished.<sup>4</sup>

The clinic based growth monitoring programme (GMP) was introduced in Malawi in 1973, and community based GMPs are being introduced gradually in selected villages since 1987. The coverage at the community level as reported by another survey appears to be higher than in clinics, even though a third of infants, and two-thirds of children older than one year are not followed regularly. Focus group discussions in the Study revealed that many mothers do not like to take their undernourished children to GMPs, and thus it is doubtful that conventional GMPs actually cover the real high-risk group for malnutrition (see Chapter 12).

### 2.1.2 Situation in the Study Area

The local HSAs and the Team conducted anthropometric surveys on the children under five who attended the GMP at Salima District Hospital (SDH) and the monthly-held GMP in Pemba village, Salima. About 150 children attended the GMP at SDH on 25<sup>th</sup> August. Measuring and weighing was done on the 77 children who finished registration by eleven o'clock in the morning. A similar procedure was carried out on the 148 children out of about 250 who attended to the GMP in Pemba village on 26<sup>th</sup> August.

- 3 WFP Malawi Activity Report: First Quarter Report 1998. World Food Programme
- 4 Nutrition of Infants and Young Children in Malawi. Macro International Inc. 1994.

On the following two days the team visited houses which were situated within 15 minutes walk from the GMP in all directions. The following houses were skipped; guardians and/or children under five year were away when visited, and there were no children under five year. 86 houses visited had 132 children under five year, of whom 62 (47.0%) attended the GMP. In total, 123 children out of 132 target population were measured either at the GMP or at household visits (Vol.5, Table 1.2).

Concerning the 123 children who were included in the study, nearly two-third of infants (62.5%) and children under two year (65.7%) were covered by the GMP, but less than a third of children older than two year (28.6%, 16 out of 56) attended (Table 1.3). The coverage rate of children older than one year seems to be better at Pemba than at the GMP held at SDH (Vol.5, Table 1.5, Fig.1.5&1.6).

As far as GMP attendants are concerned, children in Pemba village are less nourished than those in the township of Salima.

## 2.2 MORBIDITY PATTERNS AMONG OUTPATIENTS

An epidemiological profile for certain diseases in an area is essential to develop a good health care system. While at community level it is difficult to know the disease pattern due to lack of accurate diagnoses. Outpatient records of the health facilities can be useful information sources, even though many patients do not attend these facilities.

### 2.2.1 Outpatients' Morbidity Patterns in the Central Region (1994)

#### 1) Under Five Clinics

According to Basic Health Statistics, 1994<sup>5</sup>, the top ten diagnoses at under five (U5) clinics in the Central region were malaria (32.5%), URI (14.8%), LRI (8.3%; pneumonia 5.4% plus other LRI 2.9%), diarrhoea disease (7.7%), eye diseases (6.5%), malnutrition (3.7%), abdominal complaints (2.9%), skin conditions excluding scabies (2.8%), and worm infestation (2.5%) (Vol.5, Fig.1.7).

#### 2) General Outpatients Clinics

At general OPDs in the Central region the top ten diseases were malaria (30.1%), URI (14.0%), LRI (6.8%; pneumonia 3.3% plus other LRI 3.5%), abdominal complaints (6.2%), diarrhoea diseases (5.7%), muscular/skeletal disorders (5.2%), eye diseases (3.4%), trauma (3.3%), and skin conditions excluding scabies (3.2%) (Vol.5, Fig.1.8).

### 2.2.2 Outpatients' Morbidity Patterns in Salima and Dedza East (1997)

The study team compiled the Out-patient Monthly Reports for 1997 from every health facility in Salima District and East Dedza area except for Makloni HC, Golomoti HC and Mua Hospital.

The household visits conducted in Pemba village revealed that underweight children were more common among the GMP absentees (29.7%) than among the attendants (20.3%). Thus the GMP covers only about a third of total underweight children (12 out of 31), and less than 20% of underweight children older than two year (Vol.5, Table1.4).

These findings coupled with information from the focus group discussions suggest that the conventional GMPs might not cover the real high-risk group for malnutrition, suggesting that GMP derived statistics might not reflect the real nutritional status.

#### 1) Under Five Clinics

Common diseases at U5 clinics were malaria (30.3%), LRI (14.4%; pneumonia 9.2% plus other LRI 5.2%), URI (13.4%), diarrhoea diseases (8.6%), diseases of the eye (5.8%), malnutrition (4.0%), scabies (3.9%), other skin disorders (3.0%), and trauma (2.2%). This pattern of leading diseases among U5 outpatients in the study area was similar to that in the Central region in 1994. Malaria is generally diagnosed on the clinical basis at OPDs, and, therefore, its prevalence seems to be overrated. On the contrary malnutrition is apparently underrated because many malnourished children are followed at GMPs rather than at U5 clinics (Vol.5, Fig.1.9).

#### 2) General Outpatients Clinics

Common diagnoses at general OPDs were malaria (30.2%), LRI (10.4%; pneumonia 6.1% plus other LRI 4.3%), URI (9.9%), diarrhoea diseases (7.1%), trauma (3.6%), abdominal complaints (3.5%), eye diseases (3.2%), muscular/skeletal disorders (3.0%), and dental decay (2.9%). The prevalence of Bilharzia (schistosomiasis) is estimated as between 40 and 50% in Malawi, nevertheless it accounts for only 2.4% at OPDs. The last year's pattern of leading diagnoses in the study area was not much different from that of 1994 in the Central region (Vol.5, Fig.1.10).

## 2.3 MORBIDITY PATTERNS AND CAUSES OF MORTALITY AMONG INPATIENTS

Hospital discharge records provide another valuable source of information on morbidity and mortality. According to Basic Health Statistics, the leading causes of hospital admissions among children under five years were malaria (excluding cerebral malaria; 31.7%), pneumonia (16.5%), anaemia (10.8%), measles (10.4%), diarrhoea (8.9%), nutritional diseases (8.3%), causes of perinatal morbidity (3.8%), meningitis (2.0%), cerebral malaria (0.5%) in 1992.

Currently the statistics on inpatients are not available at the SDH. The ward admission logbooks were looked up on diagnosis and outcome of patients who admitted to paediatric, male, or female wards of SDH in January or

5 Basic Health Statistics 1994. Community Health Sciences Unit, MOHP. 1996

July, 1998.

Mua Hospital, a Catholic mission hospital situated in Dedza East, publishes its annual reports every year. The latest issue available for us was the one for the year 1996.

### 2.3.1 Salima District Hospital

#### 1) Paediatric Ward

The number of paediatric inpatients was much larger in January than in July, chiefly because patients with malaria and those with malnutrition increased markedly during the rainy season.

Top five common diseases at the paediatric ward were malaria, malaria with anaemia, pneumonia, malnutrition and trauma, in the descending order. These are also the main causes of in-hospital mortality of this age group (Vol.5, Table1.6 & Fig.1.11).

#### 2) Adult Wards

The number of adult inpatients did not change between January and July. Top five common diseases except for obstetrical and gynaecological disorders at the adult wards were trauma, malaria, pneumonia, tuberculosis and diarrhoea. In contrast to the clear seasonality of malaria occurrence among under five population, adult inpatients with malaria did not increase during rainy season. Although the in-hospital morbidity of pneumonia and diarrhoea decreased during the dry season, its effect was neutralised by markedly increased trauma patients. These common diseases among inpatients were also the main causes of in-hospital mortality. AIDS-related complex (ARC) was another main cause of mortality in adults (Vol.5, Table1.7 & Fig.1.12).

### 2.3.2 Mua Hospital

The morbidity pattern among paediatric inpatients of Mua Hospital was almost same as that of SDH. A major difference was that an independent category of "anaemia", instead of "malaria with anaemia", was ranked as the second commonest cause of childhood admission.

Top five common diseases at the adult wards were pneumonia, ARC, malaria, tuberculosis and diseases of skin. The morbidity of ARC is characteristically high (Vol.5, Table1.8)

## 2.4 SELECTED DISEASES TO BE TARGETED

### 2.4.1 Malnutrition

Malnutrition is important not only as a major cause of childhood mortality, but also as the underlying condition which increases both morbidity and mortality of the other infectious diseases. Infection, in turn, further worsens the patients' nutritional status.

#### 1) Gross Malnutrition

As mentioned in 2.1.1, the nutritional status of the Malawian children is one of the worst among sub-

Saharan African countries. It is estimated that malnutrition and its associated complications account for 30% of all child deaths in Kenya<sup>6</sup>, where 32% children age 3 to 36 months are stunted or, in other words, chronically undernourished.<sup>7</sup>

In Malawi 45% children of same age group are stunted and, therefore, the burden of undernutrition as a whole is probably heavier than in the other countries such as Kenya. This Study also showed that 44.2% of GMP attendants and 58.8% of GMP absentees age under five years were stunted in Pemba village, Salima.

Several risk factors for malnutrition are listed on the child health cards in order to take special care of those high-risk group; low birth weight (LBW), single parent, brothers or sisters not growing well, fifth child or more, birth less than 2 years after last birth, twin, and 2 or more children in family died. Nevertheless, the Team has never seen them ticked.

Low birth weight (LBW) does not seem to contribute much to this poor nutritional status. Latest data on deliveries and outcomes of newborns at SDH shows that LBW babies account for 2.7% of newborns (5 out of 178, twins are excluded from this calculation), and this figure is not worse than other countries (Vol.5, Table1.9).

Growth monitoring programme (GMP) is widely performed in Malawi, but attendance rate sharply decreases once the children finish the course of immunisation. UNICEF supplies child health cards, but their shortage is common at the peripheral health facilities.

#### 2) Micronutrients Deficiency

In 1983, an ocular disease survey was conducted in the Lower Shire Valley, showing that vitamin A deficiency is a serious public health problem there. In 1988, a vitamin A deficiency survey was conducted in Salima and Dedza East area, showing its prevalence as high as 22% (CI 18-26%) by means of the Impression cytology method.<sup>8</sup> Mass vitamin A supplementation programme has been introduced. The table salt should be iodised by the law to prevent people from iodine deficiency.

### 2.4.2 Malaria

#### 1) Epidemiology

Malaria is the most common cause of morbidity and mortality in children, and one of the major causes in adults. The study area is lowland about 475-600m above sea level spreading along Lake Malawi, and transmission of malaria occurs all year round with slight

6 Republic of Kenya. National Plan of Action for Nutrition. 1994

7 Nutrition of Infants and Young Children in Malawi, Africa Nutrition Chartbooks. Macro International Inc. 1994

8 Escoute A, Chirambo MC et al. Vitamin A Deficiency in Malawi: Salima/Dedza East Prevalence Survey September 1988, MOH Malawi-INSERM Unit 56 France (1989)

accentuation during the rainy season (Vol.5, Fig1.13). Severe presentation of the disease is seen mainly among children (Vol.5, Table1.6-1.8). These findings are characteristic of holoendemic malaria, implying that the collective immunity of the population against malaria develops with age.

Low birth weight babies are more common among primipara (4.5%) than among multipara (1.7%). This finding is another circumstantial evidence of the high malaria endemicity in the study area (Vol.5, Table1.9).

### 2) National Drug Policy for Uncomplicated Malaria<sup>9</sup>

Management guideline for uncomplicated malaria was officially changed from chloroquine to sulphamamide/pyrimethamine combination (S-P) in 1993. Sulfadoxine 500mg / pyrimethamine 25mg (Fansidar) is the drug of choice (Vol.5, Table1.10).

Quinine is the second-line treatment for patients who are allergic to sulpha drugs or who show no improvement after an initial SP treatment. Recommended dosage of quinine is 30mg/kg/day (1800mg for adults) in 3 divided doses for 5 days PO.

Chloroquine may still be effective in older children and adults who have developed a partial immunity against malaria.

### 3) Case Management

Diagnosis of malaria is based on the clinical symptoms at peripheral health facilities. Cases with uncomplicated malaria are treated first by oral SP, or secondly by oral quinine at their OPD. Patients with severe malaria who fulfil the criteria for referral are referred for hospitalisation after an injection of intramuscular quinine and necessary supportive treatments. At the hospital intravenous quinine injection is started if the diagnosis of malaria is established by blood tests. Regimen will be switched from quinine injection to SP tablets as soon as the patient can take oral medication. Blood transfusion may be considered exclusively in complicated cases with very severe anaemia to avoid the risk of transmission of HIV, hepatitis, syphilis, etc.

### 4) Management of Malaria Cases in a PHC Setting

People can obtain SP tablets at groceries, chemist's shops, drug peddlers, or community drug revolving funds (DRFs). There are thought to be more than 300 DRFs, most of which sell SP and antipyretics as basic essential drugs. SP is often unpopular at these settings since it has no antipyretic effect and, therefore, its clinical action is less dramatic (see Chapter 9).

### 5) Prevention by Means of Impregnated Bednets

The impregnated bednets programmes have been introduced at several sites in Malawi, such as Salima (by the JICA-CHSU Project), Mzimba (by CHAM), Karonga

(by the D.H.O.), etc.

### 6) Regular Monitoring of Drug Resistance

A total of six sentinel sites have been selected for this purpose: Karonga and Rumphi in the Northern Region, Dwangwa and Lilongwe in the Central Region, Mangochi and Machinga in the South Region. Drug resistance has been determined mainly by *in vivo* tests. Recent investigations show that SP is still effective on about 90% of cases.

## 2.4.3 Pneumonia and other Lower Respiratory Infection

### 1) Epidemiology

LRI including pneumonia is one of the most common causes of morbidity and mortality. The DHS conducted in 1992 revealed that 15% of children under five years were ill with a cough and rapid breathing at some time in the two weeks preceding the survey. Data shown below are compiled by the Acute Respiratory Infection Control Programme (Vol.5, Table1.11&1.12).

The case fatality rate of pneumonia is very high, and apparently higher than that of malaria. The duration of illness in fatal cases is often very short: only three days and a half according to the WHO studies done in Nepal, Philippines and Tanzania.

### 2) National Policy for ARI<sup>10</sup>

National Policy for ARI has been developed and is collaborating with the Programme for Control of Diarrhoea Diseases (ARI/CDD). The ARI Control Programme of MOHP works to strengthen skills of health personnel and community-based workers in the management of ARI. The ultimate aim is to treat pneumonia with cotrimoxazole at community level. Cotrimoxazole is currently effective against common causative agents such as *Haemophilus influenzae*, *Streptococcus pneumoniae*, *S. pyogenes*, and another agent deeply related to HIV/AIDS, *Pneumocystis carinii*.

The strategies adopted are Standard Case Management (SCM), encouragement of immunisation and health education to promptly bring the child to the health facility. SCM includes: early diagnosis, appropriate use of drugs, timely referral, and home advice.

## 2.4.4 Diarrhoea

Diarrhoeal diseases have been a major cause of morbidity and mortality in Malawi. The average number of diarrhoeal episodes suffered by each child in a year was estimated to be six according to the National Morbidity, Mortality and Treatment Surveys conducted in 1991. The case fatality rate at national level was 9.7% among under five children who were admitted for diarrhoea in 1990. Today diarrhoea is still a common cause of morbidity and mortality among adults as well as children.

9 Malawi Guide for the Management of Malaria: for Physicians, Clinical Officers, Medical Assistants and Nurses. Malaria Control Programme, MOHP (Updated September, 1997)

10 National Policy: Acute Respiratory Infections (ARI) Control Programme in Malawi, MOHP Malawi (1997)

To reduce diarrhoea morbidity, safe water supply is essential. Today only 37% of total population have access to any kind of safe water (see Chapter 4). To reduce its mortality, effective case management should be practised. Unfortunately the Team revealed that ORS packets had been out of stock at many health facilities in the study area (see Vol.5, Table 1.16).

#### 2.4.5 Communicable Diseases

Morbidity and mortality of the communicable diseases have been reasonably reduced by the years of efforts of Malawi Expanded Programme on Immunisation (MEPI). But there are still many cases of measles in the country, and several outbreaks of measles have been reported in recent years from the study area (Vol.5, Table 1.13).

Although the immunisation coverage had been officially reported high enough (Vol.5, Table 1.14), the Centre for Social Research warns that this data is based on children who finish their vaccination in five years, instead of those who finish it within 12 to 13 months<sup>11</sup>. Measles vaccination is scheduled at or soon after nine months old, more than five months after the last dose of OPV and DPT, and this interval is period of "dropout".

The Team also found that refrigerators at rural health facilities often stop functioning, because they can not buy paraffin fuel. In these cases their vaccine stock is moved to another facility where there is a functioning refrigerator.

Under these circumstances measles immunisation campaign instead of polio immunisation will be performed during the National Immunisation Days, in 1998.

#### 2.4.6 Bilharzia

##### 1) Epidemiology

Bilharzia (Schistosomiasis) is one of the major causes of morbidity, even though it constitutes a small portion of the total OPD visits as already mentioned in 2.2.3. In contrast to malaria or pneumonia, the progress of the disease is gradual and insidious, and, therefore, people tend to take things easy. Previous studies suggest that Bilharzia is a major cause of primary infertility in women, egg-induced granulomata are common in biopsy specimen from patients with cervical cancer, and that the high prevalence of urinary schistosomiasis in the Shire Valley is associated with squamous cell carcinoma of bladder.

Bilharzia constitutes another heavy burden on the tourism, which is one of the main sources of foreign currency for Malawi. This disease is a significant public health problem regardless of people's perception. According to an article reviewing the distribution of Schistosomiasis, both *S. haematobium* and *S. mansoni* occur in the northern lakeshore of Karonga, in Salima district, and in the Shire Highlands. *S. haematobium* is

highly prevalent along the southern lakeshore areas, the area from Namwera to the Phalombe Plain, and the Shire Valley from the Lake Malawi to the southern border with Mozambique. *S. mansoni* is prevalent in the Central plains and in small ponds of the Southern region.

##### 2) Case Management in the Study Area

Patients with gross haematuria are suspected as urinary Bilharzia on clinical basis or diagnosed on the microscopic examination of urine sample prepared by the filtration technique. Suspected or diagnosed patients are usually referred to SDH for treatment.

Because microscopic examination of stool is seldom performed, patients with bloody stool are rarely diagnosed correctly, and often misdiagnosed as bacterial dysentery or amoebiasis. There was not an independent diagnosis category of "bloody diarrhoea" on an older form for out-patient monthly report, and this resulted in the underestimation of this condition. This fault has been improved on the new out-patient monthly return.

In 1997 many cases with "bloody diarrhoea" were reported from Mtakatika HC with the older form on which the health worker wrote the number in the margin. In response the JICA-CHSU Project sent an inspection team suspecting an outbreak of bacterial dysentery, but found eggs of *S. mansoni* in the stool sample from a majority of such cases. Diagnosed patients were treated by single oral dose of Praziquantel. Generally patients suspected of intestinal Bilharzia are referred to SDH for diagnosis and treatment.

#### 2.4.7 Anaemia

Anaemia is an important public health problem in Malawi as in many other developing countries. Various surveys conducted in the past showed very high prevalence of anaemia among children and pregnant women.

In this study, anaemia as an independent entity was neither a major diagnosis at U5 clinics nor at general OPDs. But malaria with anaemia was one of the most common reasons of childhood admission at SDH, and some adult patients were admitted there under the diagnosis of anaemia. At Mua Hospital anaemia was the second common cause of admission to the paediatric ward, and one of the major causes of admission among adult population.

The aetiology of anaemia in Malawi seems to be multifactorial. Poor iron intake through diet may be most important as the background factor of anaemia. Malaria, Bilharzia, and worm infestation are highly endemic, and, therefore, secondary anaemia following to these diseases must be very common. Frequent pregnancy should give much impact on anaemia morbidity among women in reproductive age. Profound anaemia in a pregnant woman, in turn, threatens not only her life but also that of her baby. Sickle cell anaemia and glucose-6-phosphate dehydrogenase (G6PD) deficiency seem to be underestimated due to lack of laboratory assistance at ordinary health facilities.

11 An article in a newspaper The Nation. 25 August, 1998

As the causes of anaemia are multiple, the methodology for anaemia control should be complex of several components, focusing on such as Iron supplementation for pregnant women, treatment of malaria, Bilharzia and worm infestation, malaria prophylaxis for pregnant women, promotion of nutritional education, etc.

In order to prevent anaemia death it is essential to transfuse safe blood preparation without delay. Currently blood transfusion can be done only at central/district hospitals or mission hospitals. Therefore rural health facilities should be able to make clinical decisions properly, order an ambulance from a hospital promptly and transfer such patients to the hospital timely.

## CHAPTER 3: HEALTH CARE SERVICES

### 3.1 INTRODUCTION

Health care services in Malawi are provided mainly by three organisations namely the Ministry of Health and Population (MOHP), the Ministry of Local Government and Christian Health Association of Malawi (CHAM). Though not many, there are other health care providers such as private practitioners, commercial companies, military and police service. Health care services at MOHP health facilities are divided into three levels, with health centres and dispensaries at the primary level, district hospitals at the secondary level, and central, general and special hospitals at the tertiary level. Also related to the primary level health care services, are community level health services such as outreach clinics, Primary Health Care Villages and other health care activities operated by village people. This chapter focuses on the primary health care services.

The primary health care policy in Malawi was adopted in 1978. The programme aims at promoting the health of the mother and child by reducing maternal morbidity and mortality and by improving the health status of children under 5 years of age. Malawi has developed relatively good network of health facilities for basic health services in line with the policy. The health infrastructures extended to the rural communities through health centres, and outreach clinics in order to bring health services closer to the people. Community level services emphasise a wide segment of activities such as Mother and Child Care including immunisation, growth monitoring, disease control, family planning, food supply and nutrition, health education, safe water supply and sanitation, Drug Revolving Fund, Income Generation and so on. However, the progress is slow and maternal and child mortality is still very high in the presence of relatively good coverage on PHC activities suggests that the present scheduled PHC activities are ineffective in reducing maternal and child deaths or that the quality of care needs to be improved.

## 3.2 MATERNAL AND CHILD HEALTH

### 3.2.1 Current Situation of Maternal Health

Women in Malawi are exposed to a high risk of maternal deaths. Maternal mortality ratio per 100,000 live births in Malawi is 620.<sup>12</sup> The lifetime risk of a Malawian woman dying due to pregnancy-related causes is 1 in 29. The high total fertility rate of 6.7 is contributing to the high lifetime risk of Malawian women.

#### 1) Causes of Deaths

The main causes of maternal deaths in Malawi are the complications of incomplete abortion, antepartum and postpartum haemorrhage, puerperal sepsis, obstructed labour/ruptured uterus.

#### 2) Anaemia Situation in Pregnant Women

A total of 56% of pregnant women attending antenatal clinic were anaemic. Low haemoglobin was more common in young girls and primigravida. Anaemia is thought to be associated with micronutrient deficiency, blood loss from menstruation, malaria, frequent pregnancies and parasitosis. The Mangochi study shows that anaemia was associated with parasitaemia at antenatal period. One of MOHP study indicates that malaria prophylaxis may play role in reducing anaemia in pregnancy. According to the results of interview of the community group, 40% of them would go to traditional healers for treatment of anaemia, 13% of them would change their diet, and other 13% of them visit a hospital. Only 30% of TBAs refer a woman with anaemia to a health facility<sup>13</sup>. This situation occurred due to people and TBAs' lack of knowledge of causes, prevention, and treatment of anaemia. It also indicates that TBAs need further training of diagnosis and management of women with anaemia. Several programmes are on the way to tackle the nutrition deficiency of pregnant women. Those are micronutrient deficiency programme, food supplementation, food diversification, deworming, sanitation, and promotion of exclusive breast feeding.

#### 3) Nutrition Status of Pregnant Women

Stunting (chronic protein-energy malnutrition) is endemic in Malawi both children and adults. A total of 13% of women are less than 150cm in height. The main causes of stunting are food insecurity of household, high population growth, increased demand land, poor agricultural practices, frequent infections and poor child feeding practices. Stunting affects adversely obstructed labour due to cephalo-pelvic disproportion (CPD). Low maternal weight (less than 50kg) is associated with low birth weight. The protein-energy malnutrition is accompanied by micronutrient deficiencies such as iron, iodine and vitamin A deficiencies. Iodine deficiency causes mental and physical retardation of cretinism in children and adults, still birth, abortions, poor pelvic bone growth. Vitamin A deficiency contributes infant mortality and morbidity. People and health staffs' knowledge of

12 MOHP, Malawi health Sector Strategic Plan, 1997.

13 MOHP, Safe Motherhood Needs Assessment Report, 1995, Draft.

vitamin A is low. Thus vitamin A intake is low.

### 3.2.2 Maternal Care

#### 1) Antenatal Care

Antenatal care by outreach clinic has contributed to better pregnancy, delivery and newborn status, specially for women in peripheral areas. Most women receive some antenatal care from trained personnel. However there is no antenatal care at all for 7% of births<sup>14</sup>.

#### Differences in the use of antenatal services between urban and rural areas

Nearly all the births (96%) to urban women have received antenatal care from trained personnel, 8% of births to rural women have received no antenatal care at all. Women in the Central region are more likely to have a TBA and relative for antenatal care than women in the rest of the country.<sup>14</sup>

#### Association between mother's education level and the use of antenatal services

Women with no education are about 10 times more likely than women with some secondary education to have received no antenatal care.<sup>14</sup>

#### Number of antenatal care visit and time of first antenatal care visit

If the first antenatal care visit is started at the third month of pregnancy, 12 to 13 visits are supposed to be made according to a schedule.<sup>14</sup> However this number is too unreal. In fact the median number of antenatal care visits was 4.8. Over 60% of mothers made four or more antenatal care visits while a total 35% of mothers made fewer than four visits. The majority of mothers did first antenatal care visit during second trimester.

#### Tetanus toxoid vaccination

Over 70% of recently delivered women have received 2 doses of TTV while only 14% not having vaccination.<sup>14</sup>

#### Antenatal card

About 90% of mothers received antenatal cards for each pregnancy and are kept at home. Rural women, women living in the Central region and less educated women were less likely to possess antenatal cards<sup>3</sup>. In antenatal card, many information described such as situation of present pregnancy (weight, blood pressure, oedema, pallor, gestation, presentation, foetal heart, laboratory test results, pelvic assessment), medical history, previous obstetric history, previous abnormal pregnancies, deliveries, puerperium, family history (twins, diseases), general examination.

#### 2) Delivery Services

At the National level, a total of 43% deliveries were done at home while 55% of births at health facilities.<sup>14</sup> About 30% of mothers gave their births at a hospital and 20% at a health centre.<sup>15</sup> In a rural area, deliveries are three

times more likely to be done at homes than an urban area.

According to the household survey in Salima district by the JICA PHC Study, results of place of delivery as follows.

Delivered at home	59.9%
Delivered at hospital	16.8%
Delivered at health centre	21.5%

Delivery in health facility is more common in Northern region (68%) than in either the Central region (51%) or the Southern region (56%).<sup>14</sup>

#### Increased children's risk of deaths-at-birth by delivery place and type of assistance at birth

Children's risk of deaths-at-birth significantly increases according to delivery place and type of assistance at birth. There is evidence that deliveries assisted by untrained personnel like family member and ward attendant and deliveries taken place at home have higher rates of children dying.<sup>15</sup> A total of 45% of the women with no education delivered at health facilities compared 91% and above of the educated women delivering at health facilities.<sup>14</sup>

#### According to the household survey in salima district by JICA

Deliveries assisted by a nurse, midwife, doctor	36.5%
Deliveries assisted by a trained TBA	27.9%
Deliveries assisted by a family member (includes friend, neighbour)	24.8%
Deliveries assisted by an untrained TBA	6.7%
Deliveries assisted by a ward attendant	1.3%

#### Obstacles for utilisation of health facility for delivery

Long distances to a health facility, lack of drugs and long waiting time were mentioned as obstacles to utilisation of health services. For the country as a whole, 51% of women are within 5 km of a health facility. There are regional differences; women living in the North are 7.2 km from the nearest health facility compared to 5.9 km in the Central region and 4.4 km in the southern region. The average estimated time to reach the nearest health facility by a woman is one and a quarter hours. Nearly two-thirds of the women are more than an hour away.<sup>14</sup>

#### 3) Obstetric Services

It was noted earlier that the main causes of maternal deaths in Malawi are the complications of incomplete abortion, antepartum and postpartum haemorrhage, puerperal sepsis, obstructed labour/ruptured uterus. Studies have shown that these causes are avoidable if women can reach the health facilities in time and receive a quality care.

Our study found that lack of access to the emergency obstetric services and lack of access to the quality care in

14 National Statistical Office, Macro International Inc., Malawi Demographic and Health Survey, 1992.

15 Ministry of Economic Planning and

Development, National Statistical Office, Centre for Social Research, Malawi Social Indicators Survey, 1995.



rural area are the major contributing factors to the maternal deaths in the region. Ample evidence of unsatisfactory care at both hospital and health centre levels due to lack of essential equipment, shortage of material and drug, and lack of skilled health worker were cited. And the situation of referral system was found very poor for the case of emergency transfer to the district hospitals from the health centres due to lack of means of communication, acute shortage of ambulances and poor road conditions in the region. Consequently, deficient care and patient delay seeking help contribute to the maternal deaths in large percentage at health care facilities in the region. These causes of maternal deaths can be avoided by improving access to the emergency obstetric services and by strengthening the capacity of quality services at the health facility levels. This would reduce maternal deaths significantly in Malawi. It can be also noted that long distance to health facilities is one of the major reasons for the delayed care and maternal deaths. Improvement of accessibility to the emergency obstetric services in rural areas by upgrading the existing health facilities should be considered as one of the priority.

### 3.2.3 National "Safe Motherhood" Programme

A comprehensive National "Safe Motherhood" Programme is being developed to reduce high rates of maternal mortality. One of the main goals of the programme is to ensure that every woman has access to and receives appropriate emergency maternity care at health facilities. The programme has been conducted by government and non-government agencies as a collaborative effort. The Government of Malawi conducted a "Safe Motherhood" Needs Assessment in 1994 assisted by WHO Division of Family Health, funded by UNICEF.

- The district hospital as referral centre is not accessible to most health centres because transport and communication for emergency referral was not promptly available in these health centres.
- Medical Assistants (MAs) who are the main health workers along with the Enrolled Nurse-Midwives (ENMs) at health centre level, are unable to provide necessary assistance when obstetric complications arise. Refresher courses for MAs on maternity care skills, and provision of new information to the ENMs was not being done.
- Supervision was more inadequate at the hospital level than the health centre. This was due to overwork, unavailable transport and resources, and the physical distance between the supervisor and subordinates. The same factors affected supervision of Traditional Birth Attendants (TBAs).
- Most health centres did not provide basic services such as laboratory examinations (VDRL, urine and haemoglobin testing, blood transfusion) and surgery for obstetric emergencies.
- Health education (Information, Education and Communication) on prevention, recognition and management of pregnancy risks was not provided to most clients.
- The ENM is the main attendant at delivery. However

30% of women had been assisted by relatives and guardians during their deliveries within the hospitals, while Ward Attendants assisted 7% of the women.

- The labour ward did not have the basic required instruments for resuscitating the newborn. Resources for sterilisation were also not available all the time.
- Many of nurse-midwives did not describe key steps for safe delivery as washing of hands, use of gloves, emptying the bladder, ascertaining the position of the presenting part and measuring blood loss.
- Hospitals were not adequately equipped to handle eclampsia, obstructed labour and carry out caesarean section.
- Essential obstetric drugs were insufficient in certain health facilities.
- Diagnosis of obstructed labour seemed to have not been made accurately.
- Implementation of APGAR scoring (49%) and placing the baby on the breast (49%) was low.
- Most health facilities (59%) did not have adequate equipment for resuscitating the baby and to clear the airway, personnel were still using the mouth to mouth methods.
- The community expressed deeply dissatisfaction with labour and delivery services. The people perceived that Nurse-Midwives were rude to the women in labour. The people in the community mentioned that the women were often left under the care of a guardian or a ward attendant and they were required to clean the floor and linen which were soiled with blood. Consequently, they preferred to deliver at home or at a TBA facility.

#### 1) Training Related "Safe Motherhood"

Some training of various health workers has been done by responsible personnel to improve maternal care. The district "safe motherhood" trainers were trained for seven days by the national "safe motherhood" coordinator. The contents of the training include essential components such as prevention of maternal death, management of "safe motherhood" approach, care of the newborn, lactation. In Salima, 22 midwives from CHAM, government health centres and Salima district hospital have been trained by the district "safe motherhood" trainer in 1998. By the district "safe motherhood" trainer in Salima, the needs of more training for health personnel and supervision are affected badly due to lack of funds and fuel.

#### 2) A New "Safe Motherhood" Attempt In Community

A new attempt in community, community based "safe motherhood" advisor programme has been started in Lilongwe and Mangochi. The "safe motherhood" advisor programme is to prevent maternal death by increasing awareness of the people in the community through the use of role-play, singing, and discussion involving men and women. It is still on the process. The advisors are identified by the chiefs who have experiences in deliveries. A total of 50 women in Lilongwe and 20 women in Mangochi were chosen respectively.

#### 3) Maternal Care by Traditional Birth Attendants

### **(TBAs)**

It is commonly thought that TBAs are important health care providers in the community. However the results of the Malawi Demographic and Health Survey, 1992, Nationally, about 18% of women were assisted by TBAs compared to over 50% being assisted by trained nurse/midwife. Only 0.5% of recently delivered women attended TBAs for antenatal care, compared to over 90% attending health facilities.

#### **Delivery services provided by TBAs**

No TBAs reported conducting delivery on the uncovered floor, 93% of them used a towel/mat/blanket or Macintosh. A total of 65% of TBAs performed general examination, 52% abdominal examination and 46% monitored progress of labour. However checking on foetal heartbeat and emptying the bladder were not practised by TBAs. Vaginal examination by TBAs is discouraged. A total of 3% of TBAs reported the use of herbs to expedite labour, despite instructions to the contrary for safety reasons.

A total of 62% of TBAs use razor blade and 38% of them use scissors to cut the umbilical cord. A total of 54% of the TBAs did not apply anything to the umbilical cord for healing while the rest treated the cord with ash, herbs, vaseline, spirit, baby powder, mothers milk, flame and soda. None of TBAs mentioned the use of animal dung, which is known to cause neonatal tetanus.<sup>13</sup>

TBAs do not have adequate provision of delivery materials such as spirit, cotton wool, ligatures, Macintosh, scale, gloves and iron tablets. Their delivery rooms are dark even at daytime where they conduct their duties, and some TBAs use paraffin lamps. However paraffin is not an item of provision by the Government.

#### **TBAs fee for antenatal care and delivery**

On average TBAs see eight pregnant women for antenatal care and assist 5-8 deliveries per month. Their charges are 20-25 kwacha for antenatal care and delivery, irrespectively of the number times of antenatal care visits. Some of TBAs do not follow up clients who are not able to pay.

#### **TBA training**

According to MOHP, Malawi National "Safe Motherhood" Programme, between 1982 and 1992 an estimated 2000 out of 5000 TBAs have been trained through a nationwide TBA training programme. The aim for TBA training is to ensure that they conduct safe and clean deliveries. In 1994 a new TBA training curriculum and trainers guide was developed. TBA training has been supported by UNICEF, UNFPA and NGOs.

#### **TBA training in Salima district**

In Salima there are 956 TBAs (1993). A total of 73 TBAs have been trained by the district TBA coordinator about history taking, physical examination, identification and management of risk mothers, treatment of malaria and anaemia, care of newborn, lactation. The training takes just under one month and is done using a textbook of illustrations. It is conducted in Chichewa because most of TBAs are unable to read and write. The training

is supposed to be done once a year however it has not been conducted yearly due to budgetary constraint of government. In 1997 they did not carried out any TBA training. In 1996 10 TBAs were trained by funding of government. In 1998 10 TBAs were trained by funding of Action Aid. Those 10 TBAs are from Action Aid's activity areas.

It should be noted that women in the Central region are more likely to have TBAs or relatives for antenatal care and delivery at home than women in the rest of the country. The TBAs may play an important role for providing community-based maternal care including antenatal care and delivery services in the region. However, the number of trained TBAs are limited and they often do not have enough essential equipment, materials, means of communication for the referral system, and access to training for risk identifications and safe delivery. Delivery services provided by TBAs require critical review in the region.

### **3.3 FAMILY PLANNING**

Malawi has 11 million people. Its population growth rate is 3.1% per annually. According to the World Bank, the population will be double in the next twenty years.

Total fertility rate (15-49 years old) is 6.7. Fertility among rural women is higher (6.9 children per woman) than among urban women (5.5 children per woman). A woman's fertility is associated with her education level. Women who have attended secondary school have 4.4 children compared to 7.2 for those without any education.<sup>14</sup>

#### **Ideal family size**

Regarding ideal family size, 29% of all women mentioned that they would choose to have six or more children with an average response of 5.1 children.<sup>14</sup>

#### **Birth Interval**

Children who are born too soon after a previous birth particularly less than 24 months are at increased risk of dying. The median length of the birth interval is 32.7 months. On average, birth intervals in Central Region are 2 to 2.5 months shorter than in the Southern Region and the Northern Region.<sup>14</sup>

#### **Adverse effect of early childbearing**

In general early childbearing leads to a large family size if family planning was not used and is linked to increased health risks for the mother. It also tends to deprive a woman of educational and employment opportunities.

#### **1) Use of Contraceptives**

There is evidence that people know about family planning very well but rate of contraceptive use is low. A total of 41% of currently married women and 57% of men have used methods of family planning in the past. However in reality only 13% (7% modern methods, 6% traditional methods) reported that they were currently using a contraceptive at the time of the survey. The most popular modern methods are the pill, female sterilisation,

condoms, and injections, each used by about 2% of women. Use of contraception is highest among married women age 35-39. Large differences are showed between urban and rural women in the current use of any method of family planning (23% in urban area and 12% in rural areas). Traditional methods are more frequently practised in the Northern Region.<sup>14</sup>

- The main reasons for not using contraception
- Wanting children.
- Infertility ("difficult to get pregnant" or "menopausal").
- Fear of side effects.<sup>13</sup>
- The women are not likely to be economically independent, and their husbands make the decisions about the number of children.
- The husbands do not favour that their wives practice family planning because they think that their wives might play around without fear of getting pregnant.
- Vasectomy is not common because the husbands think that they may become impotent if they undertaken vasectomy.
- As the women have to undergo an operation, tube ligation is not widely accepted.
- IUDs are not commonly used as husbands may feel the IUDs in their wives during intercourse.

#### Discussion opportunities about family planning

While 38% of men said they discussed FP three or more times over the last year, only 24% of women had discussed family planning. Men and women age 35-39 years were most likely to have recently discussed FP with their spouse.

#### Disapprovalment of family planning

Less educated men and women were more likely to disapprove of family planning and also more likely to say that their spouse disapprove or that they do not know their spouse's views.<sup>13</sup>

#### 2) Knowledge of Contraception Methods

A total of 90% of women of childbearing age (15-49 years) know at least one method of family planning. Among married women, the pill (83%), the condom (73%), injection (68%) and female sterilisation (63%) are the most commonly known methods.

A total of 96% of all men and 97% of married men knew of some methods of family planning. Women responded more frequently than men did about where to obtain pills, the IUCD, injections, and barrier methods. Men reported more commonly than women where to get condoms and sterilisation services. Both women and men in their 20s and 30s are more likely to know about methods and where to obtain them. Men and women living in urban areas are more likely to know of family planning methods and where to obtain them than rural people.<sup>13</sup>

#### Family planning messages through radio

One-quarter of women and about half of men said that they had heard a family planning message on the radio. Residents in urban areas had heard more than rural residents. Men and women 45 years of age or older were more likely to say that family planning messages on

the radio were unacceptable.

#### Association among education, knowledge and use of contraception

About one-quarter of people without any education do not know of a source of modern contraception. Use of a modern method was reported by 5% of married women without schooling, and 38% of women with at some secondary schooling. A very similar of results was obtained from men.

#### 3) Availability of Contraception

A large majority of female users of modern contraception (70%) obtained their contraceptives from government facilities-42% from government hospitals, 16% from government health centres, and 11% from government dispensaries/maternity clinics. Most of the current user of condoms reported their source as a shop, pharmacy, or friends, relatives and commonly from a government hospital, in that order. Most of the female sterilisation is done in government hospitals.

#### Access to family planning by time

Two-thirds of the rural users have to travel for one hour or more to get their family planning supplies. Almost one-quarter do not know where to get a modern contraceptives.

#### Community based distributions (CBDs)

There are family planning volunteers in community called community based distributors (CBDs). CBDs are distributing pills and condoms in the community. In Salima district there are ten CBDs. CBDs are trained for a period of two weeks about the benefit and methods of family planning, communication skills and analysis, AIDS, PHC by the district family planning coordinator. CBDs are supervised by two HSAs who have been trained for three weeks. CBDs experiences feel difficulties to travel in their wide catchment area (3-4 villages) on foot. There is need for more up-to-date training and supervision.

Summing up the problems of family planning, there is an evidence over 90% of married women and men know about family planning, however a rate of contraceptive use is low. The poor quality and lack of availability of family planning services and shortage of contraceptive supply are attribute to the use of contraceptives. It should increase the use of contraceptives for the mothers health and HIV protection.

### 3.4 EXPANDED PROGRAMME ON IMMUNIZATION ACTIVITIES

#### 3.4.1 EPI Activities in Malawi

Malawi Expanded Programme on Immunisation (MEPI) had started since 1970's aiming to protect children against polio, measles, tetanus, pertussis, diphtheria and tuberculosis also pregnant women and newborn babies against tetanus.

UNICEF and WHO mainly give financial and technical

support for EPI activities. JICA, KFW and Rotary International are committed as well. Rotary International supported provision of polio vaccines, while government supplied DPT.

### 3.4.2 EPI Coverage

EPI coverage rates were reported to be 95% for DPT3, 94% for OPV3, 87% for measles, and 74% for TT2 (pregnant women) respectively in 1997.<sup>16</sup>

A total of 98% of children aged 12-23 months were reported to have received BCG. Full vaccination among children 12-23 is 81%, while 55% of children are reported to have fully vaccinated before their first birthday.<sup>17</sup> This indicates that many children had been vaccinated after their first birthday. Children who have been fully immunised by their first birthday, the highest rate of coverage is for BCG at 91%, followed by polio (three doses of) at 80%, DPT (three doses of) at 76% and measles at 70%.<sup>15</sup> Among children aged 12-23 months, the proportion of boys who had received all vaccinations (84%) is slightly higher than proportion of girls (78%). Complete coverage in urban areas (88%) is higher than in rural area (80%). The Southern Region has the highest coverage (90%) followed by the Northern Region (82%) and the Central Region (73%). Children who have caretakers with some schooling are more likely to be completely vaccinated than those who have caretakers with no formal education.<sup>17</sup>

#### Downward shift in EPI performance

In reality there is first evidence of a downward shift in the last decade in EPI performance and should be taken as a warning sign.<sup>15</sup> The drop is in the figures for children immunised before their first birthday. The percentage of children fully immunised by their first birthday shows that in 1992, 67% of children were fully immunised by 12 months, compared to only 61% in 1995. There has been a decline in the funding levels for operational costs since 1990. DPT coverage has fallen from 84% in 1992 to 76% in 1995 while polio has dropped by four percent to 80% during the same period. Measles coverage (at 70%) has not improved, while BCG coverage has fallen slightly. There was DPT vaccine shortage for three months in 1995 due to unavailability world-wide. The other important finding is a drop out (decreased rate) of vaccinated rate among BCG, DPT 1, DPT 2, DPT 3 and Measles. By the results of Malawi Social Indicators Survey, 1995, 91% of children were vaccinated BCG by 12 months of age while 92% for DPT1, 86% for DPT 2, 76% for DPT 3 and 70% for measles. This indicates that majority of children have access to EPI service and inappropriate management of EPI and mothers' insufficient understanding of EPI.

### 3.4.3 Service Delivery

16 MOHP, Information on Malawi Expanded Programme on Immunisation, 1998.

17 National Statistical Office, Marco International Inc., Malawi Knowledge, Attitudes and Practices in health Survey, 1996

MEPI services are delivered through 673 health facilities and 2,469 outreach sites run by Government, CHAM and non-government organisations. In Salima 21 out of 22 health facilities conduct EPI services through under 5 clinic, antenatal clinic and outreach clinic (the Health Facilities and Equipment Survey, JICA PHC Study, 1998).

#### National measles immunisation week

On October 6-10, 1998, national measles immunisation week has carried out combined with vitamin A supplementation. According to the interview with the EPI cold chain officer, this is the third year for implementing National Immunisation week, it has been successful so far however they see the difficulties that staff are kind of reluctant to carry out immunisation week even providing them incentives such as T-shirts, allowances because the staff feel National Immunisation week activity is a kind of routine work now which is very big task.

### 3.4.4 EPI Schedule

The EPI schedule in Malawi follows the WHO guidelines for vaccinating children. A child should receive BCG, measles and three doses each of DPT and polio. Children should receive all vaccinations by the first birthday.

### 3.4.5 Supply of Equipment and Materials

MEPI needs to ensure adequate procurement of paraffin, spare parts for equipment and bicycles to peripheral health facilities to conduct EPI effectively. According to the health Facilities and Equipment Survey in Salima by JICA PHC study, similar results were found. Paraffin and various types of vaccines (BCG, Measles and TTV) have been out of stock over the last 6 months and most of health facilities do not have spare parts for refrigerator. In 1997 it happened that all vaccines were out of stock during November.

### 3.4.6 Records of Vaccination

The majority of health centres and clinics provide cards (*Child Health Card and Tetanus Toxoid Vaccination Card*) on which vaccinations are recorded. A total of 89% of children 12-23 months had child health cards<sup>6</sup>. A total of 85% of mothers had tetanus toxoid vaccination cards. However when the JICA PHC study team visited Salima district hospital, shortage of under 5 cards was reported by the staff. According to the interview with the EPI cold chain officer, Nutrition unit and EPI unit, MOHP, have produced under 5 cards (*Child Health Card*) separately. Currently Nutrition unit is trying to add some space to indicate Vitamin A supplement. There seems that closer collaboration between Nutrition unit and EPI unit is needed to make standard under 5 cards. In addition under 5 cards are not free, and District Health Officers have to buy them from Zomba printing press (about 3 tambala each).

### 3.4.7 Monitoring EPI Activities

The MEPI performance is monitored using reports from the district and regions. Quarterly management meetings are held at central level by regional EPI officers. WHO thirty cluster surveys, DHS and KAP are conducted periodically to assess the programme achievements and compare the data obtained through routine reporting. Surveys were conducted in 1992, 1995, and 1996.

### 3.4.8 Constraints

There are some constraints for implementing EPI.

- Providing tetanus vaccinations to non-pregnant women of childbearing age may increase expenditure of limited EPI budget.
- The supervision of immunisation, the supply of vaccines and other equipment have been severely affected by the cash budget system. The cold chain is not functioning well due to various factors.
- According to the baseline survey of health centres in Salima district by JICA-CHSU project, 1996, the record of immunisation was not satisfactory at each health centre and it seemed difficult to get immunisation coverage rate without correct target population.
- Disease surveillance system is not fully functioned due to shortage of staff, funding for training HSAs.

To summarise Malawi Expanded programme, the situation of EPI had been successful in Malawi, however overall performance for all antigen coverage has dropped recently. The decline of completed coverage is largely affected by; (1) shortage of vaccines and lack of spare parts including paraffin for cold chains due to the decrease on the recent operational costs; (2) difficulty in targeting correct population with inaccurate records of immunisation at each health centre due to lack of management; and (3) a malfunction of disease surveillance system due to shortage of skilled staff. It needs to strengthen management and further training of staff at peripheral areas.

## 3.5 FOOD SUPPLY AND NUTRITION

### 3.5.1 Protein/Energy Malnutrition

The nutrition situation in Malawi, the malnutrition is widespread in both urban and rural areas, and is one of contributing factors to high mortality rate under five years of age and women.

The malnutrition levels have not been changed since the Demographic and Health Survey in 1992. The stunting rate remains about 48.3%, wasting is 7%, and the rate of underweight children is currently 29.9%.

The situation in urban area has worsened; wasting levels have increased from 2.6% in 1992 to 8.7% in 1995. Lilongwe urban area shows high rate of malnutrition in comparison to other urban areas. The rates of malnutrition in rural areas are still high but not become worse.<sup>15</sup>

### Contributing factors of malnutrition

The causes of malnutrition are food insecurity in the household, an unbalanced intra-household allocation of food, and improper child feeding and weaning practice, combined with infections/disease, cultural belief/traditions, poverty, and lack of information/education. It is noted that the continuing high rate of AIDS, leading to frequent infections and the insufficient intake of micronutrient, are also contributing factors of malnutrition.

### 3.5.2 Micronutrient Deficiency

#### Vitamin A:

The lack of vitamin A can also contribute to malnutrition. Vitamin A capsule intake by mothers and children is quite low. Although about three-quarters of the population eats at least three vitamin A-rich foods a week; there is a low intake of oil or groundnuts necessary to aid absorption of vitamin A. This is caused by poverty, which makes certain vegetables and fruits, and oil, unaffordable. Seasonality also affects availability of nutrition food.

According to the Household Survey by JICA PHC study, over 50% of children of respondents received Vitamin A capsules in the past. According to Nutrition unit, MOHP, all under-five children are supposed to receive vitamin A capsules from the age of six months once every six months. Some area children receive vitamin A capsules up to 6 years old.

#### Salt Iodination :

Salt iodination is not high in Malawi. Currently 58% of the salt consumed in Malawi is iodised. People in urban area and the Northern region consume more iodised salt than average. Legislation about making iodised salt compulsory was passed in 1995.<sup>15</sup>

### 3.5.3 Nutrition Programmes

The Nutrition Unit, MOHP has various programmes related to nutrition that are supported by international donors such as UNICEF, WHO, USAID and NGOs including the International Eye Foundation and World Vision. Nutrition programme mainly focused on micronutrient; vitamin A supplementation, iron and iodine supplement, indigenous vegetables programme, dietary diversification, fortification of salt, vitamin A fortified sugar, maize flour with iron and production of posters related to nutrition.

#### Food supplementation activities in Salima district

Food supplementation has been implemented through district hospital, health centres and outreach clinics in Salima District. World Food Programme has supported food supplementation providing likuni phala and maize flour since 1971. When JICA, PHC Study team visited outreach clinic in Salima, 2 plates of white maize flour were given to each person who is malnourished child or mother, four 50 kg maize flour were used on that day. In Nutrition Rehabilitation Unit (NRU), the target population are the under 5 children who are under weight, low weight pregnant women, mothers who are breastfeeding

with low weight, mothers with tuberculosis and the HIV positive. NRU admits under weight children and teaches mothers what to eat, and how to cook. In Salima there are two NRU. Chinguluwe NRU has about 10-15 children (August, 1998). The mildly malnourished children are cared at the Nutrition clinic, and the moderately malnourished children are treated at NRU. The severely malnourished children are referred to Salima District Hospital (SDH). In SDH these children are examined for malaria, haemoglobin, TB sputum, glucose level and HIV. They are given iron, folic acid, medicine for worm infection and food.

To summarise, less frequency of child feeding and improper type of food at weaning are likely to cause the malnutrition for infant and children under five in the region. It is a great need to mobilise communities to monitor growth of children under five years of age and intensify recommended infant and young child. It is also a need to train health staff (nurse/midwives, TBAs and others) who are involved in births to increase percentage of mothers receive vitamin A capsules during their confinement. Lastly some collaborative works are required among the Poverty Alleviation Framework and Agriculture and Livestock Strategy, and between government and donors.

### 3.5.4 Breastfeeding

In Malawi most mothers breastfeed their babies until after their second birthday. Proportion of exclusively breastfed Malawian children under 4 months increased up to 11% from 3% in 1992.<sup>15</sup>

Breastfeeding is the best way to feed babies and young children. Breast milk is not contaminated, and it contains all necessary nutrients for a child in the first few months of life. It is easy to feed and free of charge. It carries the mother's antibodies, strengthening baby's immunity against disease. Also a breastfeeding make the mother less fertile, thus contributing to her health. In fact there is evidence that children who have been breastfed are less likely to have diarrhoea than children fed with food and water.

#### Baby Friendly Hospital Initiative (BFHI)

Breastfeeding with "Baby Friendly Hospital Initiative (BFHI)" was introduced by UNICEF and WHO. The Malawi government started implementing "BFHI" in 1993. A core team of national trainers in lactation management and breast feeding promotion was developed and several orientation-training courses have been conducted. There are seven hospitals implementing "BFHI" by the government and CHAM. They are Chilipa, Rumphl, Nsanje, Salima, and Dedza District Hospital, Mlambé Hospital and Mt. Fort Hospital. The "Baby friendly Initiative" adapted to local conditions the guidelines made by UNICEF/WHO.

#### Mission of "BFHI"

The "Baby-Friendly" Hospital is required to follow 8 out of 10 steps for successful breastfeeding and an assessment is carried out every two years. Mothers are taught to breastfeed frequently, with no other food and

water until 4-6 months and then encouraged to continuing breastfeeding until their children are 2 years old. The end-of decade goal is to have all women breast feed their children exclusively for 4-6 months, and to continue breast feeding well into a baby's second year while offering supplementary food.

In summary breastfeeding with "Baby Friendly Hospital Initiative (BFHI)" was introduced in 1993 and has been implementing the programme however still the proportion of exclusive breastfed Malawian children under 4 months is only 11% due to lack of training of health staff, lack of follow ups for mothers after discharge and shortage of IEC materials. It needs to involve not only mothers but also important relatives like grandmothers and influential leaders to breastfeeding programme. It also greatly needs more government commitment to breastfeeding programme.

## 3.6 COMMUNITY INVOLVEMENT FOR PHC ACTIVITIES

In Malawi 89% of the population live in rural area where they are likely to have less health care services.<sup>18</sup> The government of Malawi is committed to Primary Health Care (PHC) in order to reduce childhood morbidity and mortality. The Ministry of Health adopted the goal of Health for All by the year 2000 in 1979. Since then a strategy has been developed for strengthening PHC, which advocates community participation in the health delivery system.

### 3.6.1 Village Health Committee

The village health committee (VHC) members chosen by the community are the core group in the community to carry out activities related to health. In general there are 10 members, a chairman, a vice-chairman, a treasurer, a vice-treasurer, a secretary, a vice-secretary and committee members.

The Household Survey by JICA PHC Study reported, a total of 46% of the villages have village health committee<sup>18</sup> and 59% of VHCs as active. A total of 83% of the villages have village health volunteers. In 20% of the villages there are HSAs living in those villages.

A total of 78% of VHCs have various partners in health activity promotion such as Plan International, World Vision International, Malawi Social Action Fund, Red Cross, UNICEF, Christian Service Committee, Action Aid, Concern Universal.

#### Village health committee's activities

It was noted that more than 50% of the village health committees have growth monitoring, water protection and village inspection as activities to help in the management and prevention of specific health problems.<sup>19</sup>

18 MOHP, The Primary Health Care Programme in Malawi, 1997

19 MOH, Health Education Unit, Strengthening of the IEC and Social Mobilisation Unit of the

**Supervision by health facility personnel**

According to MOHP, Report on the 1997-2001 UNICEF/GOM Health Programme Baseline Survey, 1997, about 30% of the VHCs are supervised by health facility personnel, and 80% of these VHCs claim that supervision is done every month.

**Training opportunities**

Only 1.9 people in village health committee members have attended some health related training.

**Health Facility Advisory Committees (HFACs)**

Apart from VHCs, there are Health Facility Advisory Committees (HFACs) in some districts in Malawi. A total of 78% of the sampled facilities for Kasungu and Mzimba and 100% of the sampled facilities for Mwanza had HFACs. HFACs hear and discuss problems of staff and community and settle disputes, convey information from hospital to communities and vice versa, monitor drugs and look into the development of the unit, assist in sanitation and construction of wells, report and administer the funds based at the health facilities.<sup>20</sup>

The problems in community involvement, yet not all Village Health Committees are active and many PHC activities at the community level still operate with top-down approach. The reasons for this unsatisfactory implementation are due to under training, lack of regular supervision and lack of understanding of activities, at both community people and health workers.

**3.6.2 Primary Health Care (PHC) Villages**

According to MOHP, overview of primary health care supported villages in Malawi, currently there are totally 154 PHC villages. PHC villages are supported by WHO, World Bank and MOHP.

For the PHC programme, MOHP is also supporting for the construction of under 5 shelters and TBA shelters. On the other hand, village people contribute manpower and provide bricks and sand.

**The role of health surveillance assistants (HSAs)**

Health Surveillance Assistants play an important role in the health care activities in the community, organising village health committee, giving advice and conducting periodic supervisory visits and doing disease surveillance work when outbreaks occurs.

**Growth monitoring volunteers and community based distributors**

There are volunteers called growth monitoring volunteers (GMVs) and community based distributors (CBDs) in the village. They are chosen by the community and are purely voluntary with no payment at all. GMVs do growth monitoring once a month in the community in addition to the outreach clinic by health

facilities.

**Traditional healers**

There are ninety-three traditional healers in Salima. The District Commissioner maintains a record of these healers. The traditional healers meet regularly with the staff from Salima District Hospital.

**3.6.3 DRUG REVOLVING FUND PROGRAMMES (DRFS) IN SALIMA DISTRICT**

In Malawi, a total of 361 drug revolving fund (DRF) programmes are operational with only 7 in Salima. Out of those 7 DRF programmes, Mphele and Funsani are PHC villages. The village people in Mphele are selling only two drugs, but other drugs such as eye ointment, cotrimoxazole, drug for cough and skin diseases were pointed out as necessary. Some of the health committee members in Funsani village received training about the signs and treatment of acute respiratory infection, malaria and diarrhoea provided by the health staff from Salima District Hospital.

**3.6.4 Outreach Clinic (Mobile Clinic)**

Outreach clinics are conducted mainly by government district hospitals, health centres and CHAM hospitals and health centres. It is an important health care service where health services are inaccessible. Outreach clinic provide a variety of health services such as antenatal care, postnatal care, family planning, under 5 clinic, immunisation, health education, treatment, and nutrition clinic (food supplementation). It is conducted by MCH nurses (Community nurses), general nurses, medical assistants, health assistants, health surveillance assistants, and so on. Growth monitoring volunteers have also been assisting outreach clinic in the community.

**People's perception towards outreach clinic**

According to the Household Survey in Salima by JICA PHC study, over 70% of respondents know about outreach clinic. Over 50% of the people use growth monitoring, 49.7% use EPI services through the outreach services. Over 90% of people are satisfied with the outreach services because of the good advice provided (49.4%), easy access (33.6%) and can get drugs (25.6%). A total of 8.8% of respondents are not satisfied with outreach services due to no medicine (47.3), too far (16.4%). Results of the Health Facilities and Equipment Survey in Salima by JICA PHC study, showed that 18 health facilities (Government and CHAM) surveyed out of 22 health facilities carry out outreach clinic. Number of outreach clinic per month, type of personnel who conduct, type of services vary according to availability of staff, transport, materials and equipment.

To summarise the problems of outreach clinic, children and women's mortality are still high in spite of providing wide range of services through outreach clinic due to lack of management and long distance. It should be strengthened on management of outreach clinic and further training of health staff.

20

Ministry of Health, 1990  
MOHP, Report on the 1997-2001 UNICEF/GOM Health Programme Baseline Survey, 1997.

### 3.7 INFORMATION, EDUCATION AND COMMUNICATION (IEC)

The Regional Health Inspector for Southern Region in Blantyre started the Health Education Unit (HEU) in 1969. The Unit was called Health Extension Services, assisting in the promotion of preventive health in the region. In 1997 the Unit was adopted by the Ministry of Health Headquarters as the National Health Education Unit in MOHP.

#### 3.7.1 HEU Services

- Training of health and other extension workers in IEC techniques and strategies.
- Production of IEC Materials.
- Health education of the General Public.
- Consultancy in IEC.<sup>19</sup>

#### The goal of IEC

The goal of IEC is to increase public awareness, facilitate community involvement and promote activities, which contribute to improve health behaviour and increase productivity. IEC messages are conveyed to individuals, families and community. The IEC convey messages on sanitation, family planning, prevention of communicable diseases, nutrition, and benefit of under 5 clinic and antenatal clinic.

#### 3.7.2 IEC Personnel

There are 3 personnel with Masters degree, 3 with Diploma degree who are trained in IEC in MOHP. There are currently 11 health education officers and 15 health education coordinators in District hospitals in Malawi.

#### 3.7.3 IEC Implementing Bodies

IEC messages are conveyed by various collaborating institutions such as government, Statutory bodies (Malawi Broadcasting corporation, Malawi News Agency), Private organisations (Christian Hospital Association of Malawi, Malawi Red Cross Society), and international organisations (UNICEF, WHO, USAID, UNFPA). There are various type of IEC materials for the Mass Media (radio, newspapers, periodicals, films, posters), Other communication channels (face-to-face communication, health education at school, writing health messages on the slides of buses, T-shirts and fabric prints) are also employed. IEC programmes are always integrated with other health programmes.

#### Target groups for IEC

The selection of primary target groups depends on the types of IEC messages. It is important that the target group is clearly defined along with its behaviour patterns and social characteristics to make IEC programmes effective.

#### Shortcomings of IEC programmes

The survey assessing IEC was done in 1991 by MOH.

Main findings were as follows. Knowledge of health workers and their clients on important messages as child health, safe motherhood, food hygiene, environmental health, control of diarrhoeal diseases, malaria control and sexually transmitted diseases was low.

- Some peripheral units were underserved in terms of supply of IEC materials.
- Most health units experienced storage problems for IEC materials.
- Most health workers lacked basic skills in the effective use of IEC materials.<sup>21</sup>

In summary, people's knowledge on important health messages is low due to great shortage of trained staff in IEC. Therefore workshops should be conducted for health workers to provide up-to-date knowledge and improve their basic skill in IEC. Also it is a need to distribute sufficient supply of IEC materials to peripheral units to ensure health education more effective.

## CHAPTER 4: WATER AND SANITATION

Diarrhoeal diseases were the fourth cause of the ten causes of outpatient attendance.<sup>22</sup> Safe drinking water and adequate sanitary facilities are important prerequisites to reduce diarrhoeal diseases.

### 4.1 ACCESS TO SAFE WATER

#### 4.1.1 Safe Drinking Water

"Safe drinking water is defined as water piped into dwelling unit, a public tap, a borehole, and a protected well or spring located either on the premises or less than one-half kilometre away."<sup>23</sup>

A total of 47% of Malawian have access to safe drinking water<sup>22</sup>. The proportion of access to safe water varies according to the distance. Just over one-third (37%) of all individuals in Malawi have convenient access to safe water at a distance of less than half a kilometre. This increases to almost one-half of the population when the distance is increased to one kilometre.

There are significant variations between urban and rural areas, and city urban residents have more access to safe water than rural people do. The great variations in accessibility to safe water source exist at district level. Two-third (67%) of the population in Rumphi district have

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- 21 MOH, Survey Report, Information, Education and Communication, Messages and Materials, 1991
  - 22 MOHP, Malawi Health Sector Strategic Plan, 1997.
  - 23 Ministry of Economic Planning and Development, National Statistical Office, Centre for Social Research, Malawi Social Indicators Survey, 1995.



convenient access to safe water within one-half kilometre while less than 5% of people in Ntchisi and Mwanza do.<sup>24</sup>

#### 4.1.2 Types of Water Facility

The most common type of water facility used in Malawi is an unprotected well or springs while the most common safe water source is a borehole. There are some variations at district level. Mwanza district has a low figure for safe water because of frequent use of unprotected wells and springs, rivers and streams. Kasungu has the highest figure (72%) using unprotected wells and springs, while 82% of Nsanje's population uses boreholes, and over one-half of Blantyre district's residents use public taps.

##### Source of water in Salima district

According to the Household Survey by JICA PHC study, 44.9% of respondents get water from borehole 33.6% from unprotected shallow well/spring. 49.7% of respondents get water about 100-500m away from their dwellings. This indicates that dwellers in Salima use better water source than Kasungu. Over 50% of respondents' household fetch water more than 4 times a day. However the number of times, family members go to fetch water depends on several factors. These include family size, availability of water storage facilities, proximity of water source and life style of the family.

Other JICA PHC study, health surveillance assistants gave us information about water source in Salima district. Totally information of 1927 water sources were obtained. Only 37% of the people are enjoying safe water while the majority is using unsafe water. The most common water sources in Salima are well including unprotected well (37%) and borehole (29%). It is noted that about 18% of water sources are river (Vol.5, Fig.1.14&1.15).

#### 4.1.3 Water Related Project Activities

##### 1) The National Strategy for Water Projects

The national water development plan shows that the major strategy for improving safe water supply as follows.

- Provide new wells mainly boreholes but occasionally shallow wells in underserved areas.
- Rehabilitate not functioning water sources such as boreholes and wells by pump replacement and/or re-drilling.
- Use "Afredev" pumps for all new and rehabilitated boreholes and wells.
- Use community water taps in urban areas to make easy access to piped water.
- Train of "Village Level Operations and Maintenance" teams in "Afredev" pump maintenance.
- Supply water by gravity piped system where it is feasible.

##### 2) Water Development Projects

There are many simultaneous water projects by many other actors such as government, donors and NGOs.

There is a great need for preventing duplications. The Ministry of Irrigation and Water Development is the main key actor in water projects in Malawi. The Ministry of Irrigation and Water Development is responsible for organising water projects cooperating with other actors including MOHP and providing technical assistance such as selection of drilling contracts and certification of works done. The government recurrent cost is relatively small and Malawi Social Action Fund (MASAF) has been assisting the communities by financing, investigating available resources and appropriate technology in the community and supplying materials like cement. The village people are contributing manpower by making bricks and sand. MASAF is financed by World Bank.<sup>24</sup> In the communities Village Water Committees are formed for water project like obtaining a borehole in the village. Currently 84 boreholes are undertaken by the Ministry of Irrigation and Water Development in Salima.

#### 4.1.4 Hygiene Education and Sanitation Promotion (HESP)

The education of individuals in the dangers of unsafe water, the correct handling of water and the maintenance of water sources once they are established, is needed. Providing only water sources is not the solution to improve the hygiene situation; it should be accompanied by health education. Therefore, MOHP is implementing the health and hygiene education (HESP) for safe drinking water and sanitation activities with collaboration between the Ministry of Irrigation and Water Development.

"HESP" is used as a method to encourage full and equal participation of both men and women in water and sanitation activities. Traditional gender roles about water collection and environmental sanitation are expected to be understood especially by men.

The Ministry of Health and Population has a HESP coordinator in its headquarters for collaboration with the Ministry of Irrigation and Water Development to disseminate health messages related to water and sanitation. District health inspectors and environmental health officers are trained and implementing HESP in the field. HESP emphasises on hygiene and protection of water from contamination during collection, storage and use in home.

Some NGOs like Africare, Adventist Development Relief Agency (ADRA), Canadian Physicians for Aid and Relief (CPAR), World Vision and Muslim society have been supporting well projects, "sanplat" projects and health education.

Summing up about water supply situation in Malawi, the most of the people are having unsatisfactory type of water and not many people are enjoying convenient access to safe water at a distance of less than 500m. This unsatisfied situation is due to lack of government capacity at district level to facilitate the management of water and sanitation facilities by communities. Communities were not empowered until recently for control of water and sanitation projects, nor are they

24 MASAF Community Sub-projects Component Implementation handbook, 1996

involved in the planning, operation or maintenance of these projects. There is a strong need that the communities would be empowered through training in management and maintenance of these facilities with appropriate assistance of co-ordination from the government. There is a need of close collaboration among other players in water projects to prevent duplications. Continued education, particularly of women who are the main water carriers, are needed to ensure that they understand the importance of safe water<sup>2</sup>. It is also a need to targeted intervention where there is poor condition such as Ntchisi, Mwanza and Kasungu in particular.

## 4.2 ACCESS TO SANITATION FACILITIES

### 4.2.1 Safe Sanitation Facility

\*A safe sanitation facility includes a toilet that flushes to a sewage system or a septic tank, a ventilated improved pit (VIP) latrine, or a latrine with a concrete sanitation platform (a "sanplat") located less than 50 metres from the user's dwellings.<sup>23</sup>

Only 5.5% of the Malawian population have access to adequate sanitary facilities located within a convenient distance of dwellings. The principal reason for very low figure is the high use of traditional pit latrines which does not meet the definition of a safe sanitary facility.

### 4.2.2 Types of Sanitation Facility

About 72% of Malawians have access to some kind of sanitation facilities. This means people are using traditional pit latrines, which are not, considered "safe" sanitation. There are district variations, with the northern region having significantly lower access to safe sanitation than the other regions. In urban areas, 89% of the population have access to sanitation, while in rural areas 70% of the population has access, only 4% of the people are using the improved latrine<sup>25</sup>.

According to Household Survey by JICA PHC Study, sanitation situation is not satisfactory. A total of 54.6% of respondents have no sanitary facilities, 32.4% have uncovered pit latrine, and only 1.3% with latrine with "sanplat".

The regional differences are significant for access to sanitation with a pit latrine. In Northern region people have the poorest access to appropriate sanitary facilities even including pit latrines. Districts where the population has particularly poor access (less than 1%) to adequate and nearby sanitation facilities include Chitipa, Mwanza and Chiradzulu. Ntchisi has the highest proportion of safe sanitation facilities, but that figure (at 17%) is still very low. People in the Northern region have the poorest access to adequate sanitation facilities. There is also a significant difference in the coverage of

sanitation facilities in urban and rural areas. Nearly one-quarter (23%) of the urban population has access to adequate sanitation facilities located within a convenient distance, compared to only 4% of rural people. Over one-half of the population in Chikwawa district, and over one-third of the population in Salima, Mwanza, Mzimba and Nsanje districts have no sanitary facilities. Notably where facilities exist, they tend to be pit latrines<sup>23</sup>.

### 4.2.3 The National Strategy for Improved Sanitation

The national strategy for improved sanitation as follows:

- Promote improved pit latrines in rural areas.
- Promote improved hygiene practices to maximise the benefits of improved water and sanitation facilities.

### 4.2.4 Sanitation Activities

The regional water boards, MOHP, Local government and Community Services are the actors in sanitation projects. The city councils in urban areas are responsible for waterborne sewerage systems and the emptying of septic tanks. The district councils are responsible for low cost sanitation (pit latrines and "sanplat" distribution). MOHP is responsible for health and hygiene education. The community services are responsible for mobilisation and sensitisation of village committee.

More integrated approach to improve hygiene situation has been introduced at the community levels. By the GOM, donors and NGOs, water points were equipped with hand pumps, about 2300 improved pit latrines were installed with "sanplats", and hygiene education was intensified, with emphasis placed on hand washing and the two-cup system of serving water<sup>23</sup>. About 400 village health and water committees have been formed, and about one-half of these have been trained in community procedures, hand pump maintenance, and "sanplat" making.

## 4.3 CONSTRAINTS

The major constraints to achieve universal access to water and sanitation have been limited funding and a lack of government capacity to maintain the existing facilities. Insufficient policy formulation and work plans, combined with complex institutional implementation frameworks and persistent drought in Malawi are other constraints. A national database related water and sanitation is not established yet to improve planning and targeting. Infrastructural development determined by political factors is also a long time constraint<sup>23</sup>.

To summarise sanitation in Malawi, only very few people (5.5%) have access to safe sanitation facility within a convenient distance of dwelling. This means most of the people are using traditional pit latrine. The situation in salima is worse than National level, over half of the people do not sanitation facilities, 32.4% have uncovered pit latrine, and only 1.3% with latrine with "sanplat". This unsatisfactory situation is due to limited funding,

25 UNICEF, Malawi Programme Plan of Operation for Water & Environmental Sanitation for the Period 1997-2001, Draft, 1996.

Insufficient policy formation and work plans, combined with complex institutional implementation frameworks. Therefore further training on planning and management are required.

systems within the country's health care policy framework.

## Chapter 5 : REFERRAL SYSTEM ASSESSMENT

### 5.1 INTRODUCTION

The referral system plays a crucial role in primary health care (PHC); people in the community would feel more confident in PHC once they are assured that higher level of care would be provided for those who can not be treated at the primary level facilities. Unless communities are confident in the system, many may try to reach higher level of care for small ailments, resulting in crowded hospitals and long waiting time with dissatisfaction towards services, and, in some cases, they may lose confidence in public health care services as a whole. Mater Plan Study on Strengthening Primary Health Care Services in The Republic of Malawi (the Study) lists "Referral System" as one of key issues in the assessment of Health Care System in the country. The Study proposal highlights three factors that influence the success of referral system, i.e., Access to Medical Facilities, Capacity of District Hospitals and Health Centres, and Quality of District Health Services.

In this report, referral system is categorised into two types: routine referral system and emergency referral system. Both systems are based on bilateral communication between two levels of health facilities (to refer and to be referred), yet at the operational level, the two systems are distinctively different. For example, routine system is based on bilateral communication with patients being a medium of communication, while the emergency referral system demands more rapid mode of communication and transportation.

Given high maternal mortality in the country and impact of mother's death on the family welfare, particular focus is placed on obstetric referral system in this assessment.

### 5.2 PURPOSE OF THE ASSESSMENT

By strengthening referral system within the district health system, contribute to the improvement of health status of children and women of Child Bearing Age (CBA) of Malawi.

### 5.3 OBJECTIVES OF THE ASSESSMENT

- Situation analysis of the existing referral system in the central region, with particular focus on Salima district is conducted;
- Based on the situation analysis, identify needs of the referral system for future intervention;
- Identify potential interventions to improve referral

### 5.4 ASSESSMENT STRATEGY

#### 5.4.1 Access to Medical Facilities

Access to Medical Facilities is a product of two types of accessibility. One is physical accessibility or physical access cost. In the case of a referral system, transportation and communication play key role in determining physical access cost. The other type is socio-cultural accessibility. Examples of the latter include emotional or cultural barriers, disbelief towards modern medicine, and gender influenced care-seeking behaviour. The socio-cultural access to health services is discussed in depth in the chapter on social medicine.

#### 5.4.2 Capacity of District Health System

In order for a referral system to be functional, a hospital needs three kinds of capacity: 1) Physical capacity to communicate, transfer and accommodate patients, 2) capacity to provide accurate diagnosis and quality care, and 3) capacity to manage a referral system and ensure the quality of services.

The quality of the system, which includes treatment capacity of the health facilities, will be discussed in the Chapter 2. The management capacity of district health system is reviewed in depth at the chapter 1.

### 5.5 METHODOLOGY

#### 5.5.1 Access to Medical Facilities

##### 1) Physical Access

As part of activities under the establishment of Geographical Information System (GIS) for Health, 1:50,000 scale maps of Salima district were digitised (see the Chapter on GIS for detail). Population census data (1987) were obtained from the National Statistical Office and the database was linked to digitised map of census enumeration areas (EAs) by using ArcView software (Arcview GIS version 3.1). Throughout the analysis, it was assumed that population growth rate within a district is uniform and constant over time for the last eleven years.

Digitized boundaries of district, census enumeration areas (EAs), and Economic Planning Areas (EPAs) for the entire country are provided by the Famine Early Warning System Project.

Coordinates of health facilities in Salima district were collected by the Team as part of Health Facility Inventory Exercise. Coordinates of health facilities in other districts were obtained from the MOHP.

Among the nine districts in the central region, three districts had complete health facility coordinates; these districts are Salima, Dowa, and Nkhosakota districts.

For the other districts, the database was not yet completed.

For the three districts, the following analysis was conducted:

- Estimation of population covered by health facilities by using Euclidean measurement of distance: for access distance, five and eight kilometres (KMs) were used.
- Catchment area population analysis: based on 1987 census data, population were assigned to the nearest health centre, then catchment population for each health facility was calculated. The results were then compared to the catchment area population claimed by each health facility.
- Population distribution by distance to the nearest health facilities.

A use of Euclidean distance in a country or a region where road density is low tends to overestimate physical accessibility. In order to make the analysis closer to the real situation in Malawi, we employed network analysis by using digitised road network. In this analysis, the access distance of five kilometres was used. The five kilometres were divided into two segments, i.e., three kilometres on the road network and two kilometres off the network. In this assumption, people are allowed to travel three kilometres on road and two kilometres on or off the road. This analysis was conducted in Salima district where we have completed the digitisation of road network.

#### 2) Access to Secondary Level Facilities

In a referral system, access between primary and secondary level facilities plays a crucial role. In this regard, health facility accessibility questionnaire was developed in collaboration with the District Health Management Team of Salima District and the Health Information System unit, MOHP and administered to all HSAs in Salima district. Information obtained includes physical access and modes of communication and transportation between villages of their catchment area and an assigned primary level care facility, and between the primary facility and a secondary level facility.

#### 3) Seasonal Variation in Physical Access

It was observed that physical access deteriorates during the rainy season. The HSA questionnaire also looked into this seasonal variability in access.

#### Communication between health facilities and availability of ambulance vehicle.

Under the health facility inventory exercise, availability of communication mechanism such as telephone and radio, and ambulance vehicles were reviewed. At the Salima district hospital, ambulance dispatch logbook was reviewed to obtain information on ambulance usage for the months of June, July, and August.

#### 4) Additional Source of Information and Data

Data obtained from Household survey and Exit interview were used to assess accessibility where applicable.

### 5.5.2 Physical Capacity of District Health System

Physical assets of health facilities in Salima District were catalogued by visiting all health facilities in the district. A physical asset database was constructed based on the data collected. This database is linked with the Geographical Information System. Coupled with human resource database for the district, the analysis provides a detail review of distribution of the health services capacity in the district.

### 5.5.3 Particular Focus on Obstetrics Referral System

#### 1) Maternal Admission Registry Review

Maternal admission registry and Delivery book at Lilongwe Bottom Hospital were reviewed to obtain information on areas from where the pregnant women were referred and the outcome of their pregnancies.

#### 2) Survey on Pregnant Women at the Salima District Hospital

According to past studies and out household surveys, about half of women deliver at home and forty percent at health facilities. Studies looked at maternal mortality have quoted that "delay in patient side" being one of the avoidable factors of maternal deaths.<sup>26</sup> On the other hand, approximately 20 percent of pregnant women who decided to come to hospital for their deliveries. A survey was conducted to find out characteristics of women at the Salima District Hospital waiting for delivery.

## 5.6 RESULTS

### 5.6.1 Access to Medical Facilities

#### 1) Population Covered by Health Facility Measured by Euclidean Access Distance

As shown in Vol.5, Fig.1.17, 45 to 50 percent of population were found to be within five kilometre radius from government or CHAM operated health facilities and about 80 percent within 8 kilometres in all three districts. For each district, a map is produced illustrating population distribution and health access (Vol.5, Map 1, 2, and 3). Yellow circles indicate access distance of five kilometres and Blue circles for eight kilometres.

Despite good health facility coverage at eight-kilometre level, maps show that health facilities are not uniformly distributed, resulting in inequitable access to health care. In Salima district, about 61,000 people need to travel eight kilometres or more to reach to a health centre and more than 21,500 people need to travel ten kilometres or more in 1998.

The coverage figures obtained in this study are very similar to the ones previously reported. Demographic and Health Survey, 1992, conducted by the National Statistical Office with support from USAID reports 51% of communities interviewed are situated within five kilometres.<sup>27</sup> And the median distance to the nearest

26 Republic of Malawi: Safe Motherhood Needs Assessment Report, May 1995, MOHP

27 Demographic and Health Survey, National

facility was five kilometres. In our assessment in Salima district, median distance to the nearest health centre from centre point of each EA is 5.26 kilometres.

In another study "The State of Food Security and Nutrition of Small Holders in Malawi", 42 percent of small holder households in Salima Agricultural Development Division are found to be within five kilometres from Health centres<sup>28</sup>.

#### 2) Access to Emergency Obstetrics Services

Although, as shown in Vol.5, Fig.1.18&1.19, access of child bearing age women (CBA) to health centre is found to be almost same as the ones of the general population, access to particular health services is greatly different. With high maternal mortality in the country, access to emergency obstetrics care for CBA determines the outcome of emergencies. Delay in emergency care is likely to result in deaths or severe complications of affected pregnant women. Since the emergency obstetrics care services are provided only at hospital level, the access of CBA to the services is much smaller than their access to general health service or even to antenatal care. Only 20 percent of CBA reside within ten-kilometre radius from two hospitals in Salima. Considering the road condition and the availability of communication tool (or lack of it) in rural areas, 80 percent of women can be considered at risk (Vol.5, Fig.1.20).

#### 3) Catchment Area Population Analysis

Each EA was assigned to the nearest government or CHAM operated health facilities. The assumption here is that people would go to the closest health facilities for the primary health services. Three district maps are presented (Vol.5, Maps 5, 6 and 7).

Health Facility wise catchment population was estimated and graphed for each district (Vol.5, Fig. 1.20-1.22). In both Salima and Nkhotakota districts, District Hospitals were found to have the biggest catchment population. With an assumption that the workload of a health centre is influenced by the catchment population, i.e., the bigger the catchment population is, the more the workload of the health centre becomes, great variation in workloads among health facilities are observed. Among health facilities in Nkhotakota district, the difference is more than 13 folds between the smallest catchment population and the biggest. Even at Salima district, where the difference was the minimum among the three districts, catchment population of Muchoka health centre is found to be more than five times bigger than that of Lifuwu health centre.

Estimated catchment population was then compared to the catchment population found in the MOHP Health Facility database for Salima district and presented in Fig.5. The database did not have estimated population for some centres. For Kaphtenga, Khombedza,

Golomoti, and Senga Bay Baptist health centres the differences are more than 100%.

#### 4) Comparison Between Estimated Catchment

##### Population and Actual Utilisation of the Facility

Estimated catchment population was then compared with the actual utilisation of each facility in terms of number of outpatients. The average number of outpatient visits per capita in Malawi is twice per year.<sup>29</sup> Based on the calculated catchment population, expected number of outpatients per year was calculated for each facility. The number of actual outpatients was taken from Health Information System data for 1997. For some facilities with missing data, the Team visited and supplemented where available.

Sixteen out of 18 MOHP or CHAM operated health facilities were included in this analysis (Vol.5, Fig.1.24). Y axis shows ratio between actual utilisation and expected; one indicates number of outpatient utilisation was same as expected at a health facility and two indicates there were twice more outpatients than expected. Total actual utilisation was almost same as the expected, yet facility wise ratio varied significantly. Chipoka and Chinguluwe health centres had more than expected, whereas Thavite, Ngodzi, and Kaundu centres had only ten percent of expected number of outpatients. Further study on characteristics would provide useful information to improve health facility utilisation.

#### 5) Access Measured by Road Network Analysis

Vol.5, Map 7 illustrates the five kilometres access areas measured by road network analysis. Vol.5, Map 8 is a detail of Map 7 showing comparison between Euclidean measurement (in Red circle) and road network analysis (grey covered area) for Salima District Hospital. The Euclidean measurement clearly overestimates the health coverage area.

Populations found within five kilometres from the nearest health facility were compared between Euclidean Measurement and Road Network Analysis (Vol.5, Fig.1.25). Road network analysis indicates that only 37 percent of population in Salima district are within five kilometres from the health facilities.

#### 6) Seasonality of Access

Perceived difficulties in access to health facilities during wet season dramatically increase. Among 826 village observations, 36 percent were classified as difficult during the dry season, whereas the number increased to 76 percent in the wet season. The greater difficulty during wet season was also observed as the difference of perceived travel time. Average travel time between village and the nearest health facility during dry season was 84 minutes. During the wet season that figure increases by 27% to 108 minutes. Some TA reported greater increase in difficulties during wet season than others; Msosa, Ndindi, and Pemba are the three TA showed a 50 to more than 100 percent increase in travel

time. Health Facility wise, Chitafa, Chipoka, and Kaundu indicated increased difficulties during wet season.

The mode of transportation is also influenced by the season. In both seasons, majority of population walks to health facilities or carries patient on somebody's back, the proportion increases significantly during the wet season from 50 percent to 67 percent. Thirty three percent indicated they would use bicycle during dry season, while only 15 percent would use one during the wet season. Although small in number, sixteen villages indicated the use of canoe during wet season for patient transportation.

Emergency communication between villages and health facilities are done by a messenger, with further delay in communication is expected during the wet season.

#### **7) Access between Primary Level and Secondary Level Facilities**

Travel time between primary level facility and referral hospitals were asked to HSAs. All health facility surveyed indicated ambulance as a mode of transportation for patient transfer. Average travel time between health facilities and Mua Hospital was 22 minutes and 56 minutes for Salima District Hospital. This longer average travel time for Salima District Hospital is due to the larger number of health centre referring to the hospital and the hospital covers northern part of the District. There are 14 ambulances in the district, of which four are not working, five were found in poor condition.

Eight health facilities including two hospitals are equipped with wireless communication. Although some of military health facilities and private ones have telephone, only Salima District Hospital has telephone facility among government or CHAM operated facilities. Other facilities use telephone from nearby post office or police station or send a messenger on foot or with bicycle for emergency communication.

Ambulance log record at Salima District Hospital was reviewed for June, July and September 1998 at Salima District Hospital. The record was a compilation of ambulance dispatch requests sent by health centres and TBAs. The dispatch of ambulance is free of charge if health assistant or medical assistant refers the patient or, in case of pregnancy related problems, a registered TBA can refer a patient. Otherwise, patient family needs to pay MK8 per kilometre. There is no set format for dispatch request. Most of dispatch request found in the record contained information on name of health centre, date, and name of health assistant. Occasionally, request indicates problem, but not always. There are 72 requests found in the record, among which 31 were appeared to be related to pregnancy or maternity problems. Of which only four requests were sent from TBAs. About 44 percent of requests are from Khombedza health centre. Combined with Maganga health centre, these two health centres requests amounted to 70 percent of total requests.

The record did not contain information on requests made through wireless message. Both Maganga and Khombedza health centres do not have wireless communication.

#### **5.6.2 Maternal Deaths Record Review**

Maternal Deaths record at the Bottom Hospital had 47 records of maternal deaths during the last 13 months. The average age of women at the time of deaths is estimated to be 26.4 years old. Seventeen out of 47 cases were referred from health centres or other hospitals and the rest came directly from home. Among 36 deaths with record of delivery status, 17 had delivered prior to arrival at the hospital. Among 36 cases with diagnosis recorded, 12 are related to some form of infection, nine to ruptured uterus, six to haemorrhage during or after childbirth.

#### **5.6.3 Survey on Pregnant Women at the Salima District Hospital**

Forty-seven women who attended at Salima District Hospital for delivery were interviewed. Of these, 91.5 percent of women are married. Sixty percent of respondents belong to Chewa tribe and 30 percent to Yao tribe. Average age of respondents is 23.7 years. Thirty two percent never attended school and 62 percent had some primary schooling. Thirty eight percent of respondents were pregnant for the first time.

When asked about their form of marriage (either Chikamwini or Chitengwa), 53 percent were Chikamwini and 36 percent Chitengwa. Eighty three percent of them were house wives.

When asked about attendance at antenatal care, 94 percent said they have attended at least once. Eighty seven percent of respondent reported that they have gone to antenatal clinic at least three times during this pregnancy. A quarter of them have attended antenatal care at Khombedza health centre and only one person mentioned TBA as a place of antenatal care.

Eighty one percent of women were told by medical personnel (nurse, doctor, or medical assistants) to come to the hospital for delivery. Eight percent said they have decided by themselves, whereas only one respondent mentioned TBA.

Sixty-two percent of respondents are residing within 30 minutes of travelling time from antenatal care. The majority of respondents enjoy easy access to antenatal clinic.

Eighty three percent were accompanied by her guardian at the day of the survey.

Majorities of respondents were from villages within Salima district and not many are from Dedza East area. This is because Mua hospital functions as referral place for women in Dedza East area. Apart from Pemba TA, number of respondents were evenly distributed among TAs of the districts with slightly high number from

Khombedza TA.

When asked about reasons for choosing the hospital as their delivery place, being primigravida was the most common medical cause of coming to the hospital. There are some women who were referred by health centre but did not know the reason.

Majority of women cited availability of emergency care at hospital as the biggest advantage of hospital delivery. Medical interventions listed by respondents include blood transfusion, caesarean section, episiotomy, and emergency resuscitation. Shortage of food and high expense were mentioned as disadvantages of hospital delivery.

As for home delivery, few mentioned convenience as an advantage, but many did not list any advantage. Lack of blood transfusion facility was most frequently mentioned as disadvantage.

From qualitative interviews with nineteen women, an emerging pattern of decision making process for hospital delivery is as follows: a pregnant woman visits antenatal care, she is told by a health worker that she has some problems or high risk and she should go to hospital for delivery. The woman consults her husband and her mother. Once they agree she is sent to hospital with a guardian and food. In some cases, women are threatened by health worker that if she decides to deliver at home and found herself in trouble, then health centre would never try to help her.

Many seem to encounter problems with shortage of food at hospital and other expenses. Their husband or father would bring food, wood for cooking, and money to the hospital once to three times per week. Some believe that when at the hospital, people at her village can not bewitch her during her delivery.

5.7 ANALYSIS

According to a survey conducted in Dedza district on district accessibility profiles, access to water was the most frequently listed first priority access problem by villagers followed by access to health services. Fifty one percent of villages listed water access and 25 percent health services. However, if second and third priority access problems are included in the analysis, access to health services is the most frequently cited problem, 66 percent of villages in the district.<sup>30</sup>

This figure indicates the importance of access to health services and unmet needs expressed by villagers for easier access to health services. The MOHP recognises this problem and has set a national target of provision of one health centre to a population of 10,000. In Salima district with population of about 340,000 and eighteen government or CHAM operated health facilities

in place, population per health facility is 19,000. As shown in Vol.5, Fig.1.21, the population per health facility varies from facility to facility. Judging from the expected catchment population, the government may need to prioritise areas currently covered by Muchoka, Maganga, Khombedza, and Kaundu health facilities for the future establishment of health facilities. At the same time, since the level of actual utilisation of these facilities are less than half of expected utilisation, the MOHP should investigate further on reasons for the under-utilisation in these facilities.

In Dowa district, the average population per health facility was about 22,000. Similar to the situation of Salima district, the distribution of health facilities is not uniform throughout population. Areas covered by Chakaza, Dzeleka Ref Camp, Dzole, Kayembe, Madisi, Mbingwa, Mponella, Mtengowanthenga, and Mvera Mission facilities requires urgent attention.

General accessibility to health services in all three districts examined is good at eight kilometres radius level in comparison to the other Sub-Saharan African countries. Preferred access distance to the primary care is less than five kilometres according to the exit interviews. If this distance is applied in the analysis, the access drops to about 50 percent. Moreover, when functional access is considered, the network analysis revealed 30 percent reduction in population coverage, indicating only a third of population in Salima district are within five kilometres from health facilities.

Impact of improved physical access to the utilisation of health services is greater on primary health level facilities than on higher level facilities. Exit interview demonstrated this pattern well, about 70 percent of under five years old patients found at primary level health facilities are from villages within five kilometres. Whereas at hospital level, patients within five kilometres constitutes only 35 percent.

5.7.1 Referral Practice

Referral system for under five years old patients is almost non-existent. Eighty patients participated in the exit interviews at two hospitals in Salima District, none of them said that they were referred by other health providers. However, approximately 40 percent of these patients visited other health providers prior to coming to hospital, of which about half of patients' first contact was with grocery, pharmacy, or market and eighteen percent was with government or CHAM operated health facility. This remarkably low rate of referral could be explained by informal referral system where patient's family does not recognise that they were referred by their first contact.

On the other hand, majority of pregnant women found at the Salima district hospital were referred by medical personnel. The proximity of patients' villages to locations of antenatal care indicates that the access to the first contact plays a significant role in motivating women to come for hospital delivery.

The lack of bilateral communication between first level

30 Dedza District Accessibility Profiles (draft) Ministry of Local Government and Sports, Pilot Integrated Rural Transport, Oct. 1997

facility and district hospital is one of the major problems. Following advice of health workers in case of pregnant women, they have to make a major financial decision to come to hospital for their delivery. In many cases, they even do not know reasons for their hospital referral. These patients are unlikely to report back about the outcome of their pregnancy to the health facilities which "ordered" patients to go to the hospital. First level facilities would not know the exact number of pregnancies which went to hospital and did not. By having records of pregnant women advised for hospital delivery, follow-up would be easier. This record can also help health facilities to review their referral record and keep its outcome, which can then be used to improve their antenatal care actively.

As previously discussed, proportion of women with access to the emergency obstetrics care services within 10 km is 20 percent in Salima. In case of emergency at home delivery, patient's family needs to communicate with a hospital on foot or by bicycle, then ambulance is dispatched to collect patients. Shortening of this time lag would be crucial in saving women's lives.

To reduce the time lag, the health system needs to bring its maternity services points close to where women live or bring pregnant women close to service points. With the limited resource of the government, it would be very difficult to bring maternity services close to every woman. One possible solution is to bring women close to health centres with capability of emergency obstetrics services; waiting room or antenatal ward has been tried in various countries with mixed results. In case of Malawi, there are already fifty pregnant women waiting even without antenatal ward, by accommodating these women first under some form of shelter and providing antenatal checkup and cooking facilities, the number of women who would come to hospital may increase in the future. Upgrading all health facilities with capability of emergency obstetrics care would be ideal but unrealistic solution to reduce mortality. Instead, health centres with large number of antenatal care patients may be upgraded to function as core emergency service points. For example considering the number of antenatal care and number of emergency referral by the Kombedza Health Centre, upgrading it would be a logical choice.

#### 5.7.2 Communication Between Health Centres and Hospitals

Less than half of the facilities are equipped with wireless communication. These facilities lack in communication mode and have to rely on other governmental institutions or messenger to call for an ambulance. Provision of wireless communication to all the health facilities would be an important step to improve emergency care.

#### 5.7.3 Transportation

Provision of transportation remains as the biggest problem for emergency referral services. The number of ambulances is limited and is unlikely to improve in the near future given the financial constraints of the government.

Ambulance vehicles also serve as staff transport in many hospitals. If ambulance request is sent while an ambulance vehicle is out transporting hospital staff, further delay in patient transport is evident. Ideally provision of staff transportation would improve the situation, however due to the cost of fuel and driver, it would not be possible to do so in many hospitals. One alternative is to contract commercial transportation for staff pick up services, thus sparing ambulance vehicle and its driver for emergency purposes. Collaboration between private transportation company and health system may contribute to the reduction of travel time of messengers and patients. Under this collaboration, villagers indicate the emergency by using a flag on road side, track drivers are requested to stop and take messengers or patients from the road side to near a hospital. This reduces a travel time especially during the wet season.

## CHAPTER 6: LOGISTICS SYSTEM OF DRUGS AND MEDICAL SUPPLIES

### 6.1 BACKGROUND AND OBJECTIVES

The main objectives of the study in this section are: 1) to describe the general logistics system for drugs and medical supplies in Malawi, 2) to identify the problems, gaps and concerns in the logistics system, and 3) to understand the actual availability of drugs and medical supplies at the health facilities in the district. The study was carried out through reports and literature review, interviews with key actors in health facilities and institutions involved in the logistics system at MOHP headquarters, Central Medical Stores and Salima District Health Office, and a drug inventory survey of selected drugs and contraceptives, which was carried out in 28 health facilities in Salima District and Dedza East Area as a part of the health facility inventory exercise described in Chapter 7.

### 6.2 GENERAL LOGISTICS SYSTEM IN MALAWI

#### 6.2.1 Public Sector

Malawi has had problems with ensuring an adequate and cost effective supply of drugs to its facilities due to combination of reasons. The main reasons include: inadequate support systems for demand forecasting, stock management, pricing and financing management. Approximately 90% of drugs used in Malawi are imported. This means that changes in the dollar/kwacha exchange rate greatly influence the real value of the budget allocated to drugs.

#### 1) Spending on Drugs

The government consistently spent US\$0.5-0.8 per capita on drugs during the 1990s and the CHAM facilities spent an additional US\$0.18. This adds up to less than



US\$1.00 per capita, which is below the World Bank's estimate that a well-run district health system with health centres and a district hospital would have to spend US\$1.60 per person (\$1 for routine conditions, and \$0.6 to slow the HIV epidemic by treating all STDs). This figure is based on the assumption that selection of drugs is rational and that purchase prices are reasonably low.<sup>31</sup>

Several countries and UN organisations continue to supplement the drug supply through regular donations. Given the poor state of the Malawi economy, it is unlikely that significant increases in the annual budget for drugs and medical supplies will be forthcoming. Thus the country will have to depend on continuing contributions from donors in order to supplement the grossly insufficient recurrent budgetary allocations. It will be important for these to be carefully planned and coordinated in order to maximise the potential benefit and to ensure that donations are properly integrated into existing national procurement and distribution systems.<sup>32</sup>

## 2) Selection

The Malawi Essential Drug Programme (MEDP) was introduced to the country in 1987 with the cooperation of World Bank, WHO and Dutch Government. The Malawi National Drug List, revised in 1995 as its third edition, is now in use. New edition of the National Drug List as well as Malawi Standard Treatment Guidelines will be issued in January 1999. The drugs are categorised according to the level of institution (health centre, district hospital and central hospital) at which they would normally be permitted to be used.

## 3) Procurement

The main agency responsible for pharmaceutical and medical supplies is the Central Medical Store (CMS), which also handles contraceptive storage, distribution and customs clearance. The CMS was set up as a Treasury Fund in 1968. It was initially established to do the purchase and supply of all medical supplies to government hospitals. The CMS services were later extended to hospitals falling under the Christian Hospital Association of Malawi (CHAM) and other government-assisted hospitals. As a Treasury Fund, the CMS is expected to operate as a revolving fund and to generate sufficient revenues from its fees and charges to cover its operating costs and not to resort to government subventions for its operations. Due to a combination of reasons, including deficiency of financial resources, inefficient drug procurement and supply processes, a reliable and regular supply of essential drugs to health care providers is not yet assured.

Around 60% of drugs and medical supplies imported by the CMS are air-freighted into Malawi. These drugs and supplies are received and warehoused in the Lilongwe warehouse which has a combined storage place for

headquarters and Central Region. The remainder is transported into Malawi by roads from South African ports. These are received and warehoused in the Southern Region warehouse. Goods received at the headquarters warehouse are quarantined for quality checking at an adjacent quality control laboratory before distribution.<sup>33</sup>

## 4) Distribution

The CMS presently distributes to its three regional medical stores (RMS) in the Southern, Central and Northern regions from its central warehouse located in Lilongwe. The current drug distribution is based on a 'push' system based on regional population. Currently 15% of the drugs are distributed to the Northern, 35% to the Central and 50% to the South Regional Stores. Distribution from the regional stores is based on orders from various user units (central hospitals, DHOs and others). As availability of stocks in general are usually 75% of what is needed, the amount of drugs and supplies actually distributed to the user units is often less than the ordered amount. As a result, user units tend to order larger amounts than what they actually need, or orders are made more frequently than they are supposed to be. The fee charged to user units by CMS is 12.5% of the value of supplies. As for donated drugs and contraceptives the fees charged by CMS is 5% of the value of the goods.

In principle, supplies are distributed by RMS to user units quarterly. However, the delivery schedule is irregular and delayed. Therefore, the user units often have to collect their orders at RMS. Flow of drugs and medical supplies is shown in Vol.5, Fig.1.27.

## 5) Drug Use

A number of initiatives (prescriber's training, public drug education (IEC), rational drug use curriculum, patient registers) were undertaken by MEDP to promote understanding of essential drugs concept and rational drug use by health professionals and the general public. However, the impact of many of these activities was seriously compromised by recurring drug shortages, shortage of relevant human resources and lack of efficient information system on drug supply and its use.

### 6.2.2 Christian Health Association of Malawi (CHAM)

In principle, mission hospitals do the purchase of drugs and medical supplies on their own. Their drug budget mainly depend on donations (either as financial resources or drugs and supplies) and user fees. They do the procurement from CMS, private companies in Lilongwe and Blantyre, and also from abroad. Between 10% and 15% of their drugs and medical supplies are donated from abroad. A CHAM headquarters pharmacist commented problems of logistics at their institution as follows:

31 Malawi Health Sector Strategic Plan Background report, Health Finance Working Group, MOHP, 1997

32 Chris Forshaw (WHO/MEDP Advisor), MOHP, "Malawi Essential Drugs Programme", March 1998

33 Deloitte Touche Tomatsu International, "Transformation Plan for the Malawi Central Medical Stores", June 1996

- Donations do not arrive regularly, and it is difficult to estimate their amount.
- As orders are made in relatively small quantities, they sometimes result in higher unit prices.
- Over prescribing of drugs is observed when health facilities have a lot of stock.
- Stock-out period is not very long, but exists.
- Shortage of pharmaceutical staff and needs for further training on drug management and prescribing.

### 6.3 LOGISTICS OF DRUGS AND MEDICAL SUPPLIES AT DISTRICT LEVEL

#### 6.3.1 Centralised Drug Budget

Until 1996 District Health Offices purchased drugs and medical supplies directly from CMS. In 1996 the MOHP recentralised the Ministry's drug budget. MOHP's reason for recentralising its drug budget was to avoid overspending on drugs, and also to avoid spending of drug budget for other items. Hence, drug funds are released directly to CMS to procure items, instead of being released to user units (central hospitals and districts).

MOHP's central hospitals and DHOs are informed of the total annual budget of drugs allocated to each of them, and they send orders to CMS through RMS within the budgetary limitations. At the time of the interview at Salima DHO, however, it was found that DHMT members were not yet informed of their budget allocated to drugs for the fiscal year 1998/99, although they were informed of the total national budget for drugs for the same fiscal year. According to a DHMT member, the expenditure on drugs during 1997/98 was around 4.1 million kwacha, however, the district could not spend all, as CMS did not have enough supply to meet the orders. By contrast, according to the district management audit report, some districts overspend their drug budget.<sup>34</sup>

#### 6.3.2 Procurement of Drugs at District Level

In principle, DHO makes orders of drugs and medical supplies for the whole MOHP facilities in the district quarterly based on previous year's consumption. As for TB drugs, DHO makes requisition for the CHAM facilities as well, and they are provided free-of-charge to these facilities. DHO sends the orders to CMS by completing Form MED914, which shows the types of drugs requested, the number of units of each type of drug, and the value of the drug in U.S. dollars. Dollar values for drugs are listed in CMS catalogues provided to pharmacies. When a district prepares a requisition for drugs and medical supplies it does not calculate the total value of its order, since the ability of CMS to fill an order is not known when a requisition is prepared.<sup>4</sup> When CMS invoices arrive to DHO, they are kept in the accounting unit.

Deliveries of drugs and medical supplies are supposed to be made by the RMS to DHO. However, actually, DHO often has to send its own vehicle and personnel to RMS to collect their orders. There were complaints on the part of the DHO staff, as the commission charged by the CMS, which is 12.5% of the value of the goods, include transportation charges. A DHMT member commented that even when CMS does not have stock of some items, the district is not allowed to do the purchases themselves. Therefore, sometimes the district has to investigate which supplier have these items, and then ask CMS to do the purchase for the district.

When the CMS does not have enough stock of certain items, a reduced amount will be delivered or none delivered at all. In the book where the district keep record of orders to CMS it was found that orders to CMS are made much more often than quarterly, sometimes even twice a month, to order the items not previously filled.

#### 6.3.3 Storage

Once drugs and medical supplies are received at the district pharmacy they are placed on shelves in a room in the district hospital under lock and key. Drugs and supplies for the hospital and health centres are stored in the same room, but on different shelves. An inventory sheet is attached to each drug supplied.

#### 6.3.4 Distribution of Drugs to the Health Centres

Requisitions from the health centres are received on a monthly basis at the district hospital, and deliveries are made monthly in a locked box for each health centre using the DHO's vehicles. At the time of the delivery, a pharmacy assistant from the district hospital checks the state of stocks, how they are stored, and examines if there are any expired items at each health facility.

According to the interviews carried out with some of the nurses and medical assistants (MAs) of the health centres, the orders are made monthly, but sometimes additional orders are made in between. Seasonal epidemiological pattern or possible outbreak of infectious diseases is taken into consideration to estimate the necessary amount of drugs for the following month. However, they are not accustomed to planning the needed amount of drugs for one year period. One MA commented that as the order form for health centres do not include drugs for STD treatment, these should be included as standard drugs.

#### 6.3.5 Availability of Drugs at Health Facilities

##### 1) Drug Inventory

The results from the drug inventory survey is shown in Vol.5, Table 1.16. It was found that seven out of nine MOHP health centres had experience of out-of-stock for some drugs for more than one week during the past six months, while none of CHAM facilities had such experience.

Salima District Hospital had 3 weeks out-of-stock for

34 Government of Malawi, Ministry of Health and Population, "District Health Office Management Audit Draft Report", April 1998

some drugs during the past 6 months. In MOHP health facilities including the district hospital, out-of-stock period varied between 2 weeks and 6 months, and frequency of out-of-stock varied between once and six times. Items most frequently out-of-stock were aminophylline (in 5 facilities), cotrimoxazole (in 3 facilities), tetracycline eye ointment (in 3 facilities), salicylic acid + sulphur ointment (in 2 facilities), ferrous, magnesium trisilicate comp., metrifonate, and penicillin (in 1 facility each). Out of nine MOHP health centres, seven received their orders without delay, but eight health centres claimed that the deliveries usually last only two to three weeks.

CHAM facilities staff commented that they sometimes had out-of-stock items, but not longer than one week. Among six other health facilities visited, two clinics had out-of-stock items between one and two weeks. Focus group discussions and exit interviews conducted by the study team<sup>35</sup> and other organisations<sup>36</sup> identified that CHAM facilities were viewed more positively with regards to drug availability.

## 2) Drug Use

Malawi Standard Treatment Guidelines and Malawi and Malawi Prescriber's Companion are found in most of the MOHP and CHAM facilities, and they are used by MAs and nurses. The first was found also in 4 other health facilities visited.

In MOHP health facilities, the drugs used in general are only those listed in essential drug list.

### 6.3.6 Community Drug Revolving Fund (DRF)

Community DRFs are a response to the inaccessibility of remote villages to basic curative care and, specifically, to basic essential drugs. Diagnosis skills are introduced into the community through a village health worker who receives initial training and then continued supervision from a nearby fixed health facility. DRFs have been started by some NGOs in the late 1980s in Malawi. The MOHP has taken a decision to promote the system nationally, with the financial assistance of the World Bank. There are so far only 7 DRFs in Salima, while there are a total of 361 in the whole country. The DRF programmes in Salima District are described in Chapters 3 and 9.

### 6.3.7 Distribution of Family Planning Methods at the District Level

#### 1) Distribution to Health Facilities

The JSI/Family Planning Logistics Management Project (FPLM) was started in 1995 with funding provided by USAID. Since then the project has been providing technical and training assistance to the MOHP/Family Health Unit.

The FP methods are received quarterly and stored in the district pharmacy together with drugs and medical

supplies. District Family Planning coordinator and Pharmacy assistants of the district hospital are responsible for the planning, control of stocks and distribution. Contraceptives are delivered from district pharmacy to the MOHP health centres, CHAM facilities with FP service (facilities run by Catholic missions are not providing FP services), as well as to BLM (an NGO) clinic and the clinics run by army and police. Most of the health facilities with FP services had enough stocks of methods except for copper T, a method not available yet at the health centre level.

#### 2) Community Based Distribution

Community based distributors (CBDs), volunteers, are distributing pills and condoms. There are ten CBDs, all females in Salima. They are supervised by HSAs who have been trained on family planning.

## 6.4 PROBLEMS OF THE LOGISTICS SYSTEM

The problems of the logistics system observed in the study area are as follows:

- The district level is not well informed of their budget allocations for drugs and medical supplies, or spending limits to CMS.
- The district cannot spend all the drug budget when the needed drugs and medical supplies are not available at the CMS.
- Some items are not delivered to the districts for relatively long period when CMS does not have stocks.
- As deliveries by CMS through RMS are irregular and delayed, the district often has to collect ordered supplies at RMS. As orders are made almost monthly due to shortage of supplies at CMS, collection of supplies are also made frequently. As a result, the district has to spend costs for fuels and manpower, which otherwise could be spent on supervision.
- Amount and kind of drugs in stock vary facility by facility suggesting uneven supply or uncoordinated distribution planning.
- Records of stocks are kept item by item using an inventory sheet for each drug. The records are hand-written. Although at times there were intentions to keep records of whole state of drug stocks, when they were ordered and when they were received in a book, it was not constant. Therefore, it is difficult to use the recorded information for planning for orders and distribution.

## 6.5 CURRENT EFFORTS TOWARDS IMPROVEMENT

### CMS reform

CMS reform has been a concern for many years. DFID plans to support the reform of CMS with proposed duration of 3 years and proposed budget of 3.5 million pounds. The project aims to create an efficient drug supply organisation. The support will be specifically provided for reforming management, procurement, warehousing and supply systems. The implementation

35 Further results are described in Chapters 12 and 13.

36 MOHP and UNICEF, "Malawi Programme Plan of Operation for Health for the Period 1997-2001", May 1996

has been delayed, partly due to the long and intensive discussion on two fundamental issues:

1) CMS did not accept the recommended contract-out of distributions to private distributors, although the current distribution performance by CMS's own fleet of vehicles is poor and costly. It was agreed that CMS would keep the situation under review and obtain more comparative information on distribution cost, i.e., use of CMS vehicles versus the use of private distributors.

2) Government of Malawi did not agree to the suggested closure of two of the regional stores and centralisation of CMS at one location, which was recommended by the consultancy report, although this was supported by DFID as a mean to reduce operational (especially staff) cost. A compromise was worked out whereby the regional stores in the north and south would be reduced to satellite depots for strategic stocks of the most important drugs and supplies.

## 6.6 OTHER CONCERNS

### 6.6.1 Shortage of Pharmaceutical Staff

There are no institutions for the training of pharmacists, although the establishment of a School of Pharmacy (later re-named Department of Pharmacy) had been under active discussion for some time. According to Poisons and Pharmacy Board, there are 62 pharmacists, 11 pharmacy technicians and 92 pharmacy assistants registered in the country as of 1996. Total number of pharmacists is small, and those working in the public sector are very few. There are only 3 pharmacists for the whole MOHP. Other pharmaceutical staff working for public sector and CHAM are 8 pharmacy technicians and 52 pharmacy assistant in MOHP, and 11 pharmacy assistant in CHAM facilities as of 1996.<sup>37</sup>

There are only 2 pharmacy assistants working in the MOHP facilities in Salima district and Dedza East area, both of them are deployed in the Salima district hospital. There are no pharmaceutical staff working in health centres. Among CHAM facilities in the study area, only Mua Hospital has a pharmacy assistant.

### 6.6.2 Need for Adequate Information System

It is argued that the logistics system can be enhanced if the information system is improved particularly in gathering data on the following: population, morbidity and mortality patterns, workload in health facilities, and actual use of drugs and supplies in facilities. Compilation of all these data at the district level can be facilitated by the use of computers and user-friendly reporting forms. This would require in-depth analysis of existing record-keeping materials and considerable input from health care providers.

37 Human Resources Team, "Human Resources in Support of Implementing Essential Health Care Package in Malawi", July-September 1997

It might also be necessary to first analyse the factors that influence the use of data and information in estimating drug requirements. For as long as field staff feel that the information system is just a time consuming exercise and not linked to planning, then the success of logistics management information system would remain questionable.

## CHAPTER 7: HEALTH FACILITIES AND EQUIPMENT

### 7.1 INTRODUCTION

This chapter focuses on the health facilities and equipment in selected areas of central region in Malawi. The survey was conducted by the Study Team. One Japanese expert visited all health facilities in Salima district and Dedza East area and completed inventory exercise. There are thirty health facilities in the study area. These health facilities in the study area were categorised by type and operating agency. (Vol.5, Table1.17)

The health facility inventory exercise was carried out to grasp distribution of health facilities and condition of equipment and to assess physical condition of facility building including availability of water supply and electricity.

### 7.2 STUDY RESULTS

#### 7.2.1 Distribution of Health Facilities

As shown in Vol.5, Table1.18, health facilities are categorised in 12 types. The Ministry is redefining facility types, characteristics and needs in collaboration with CHAM. Of 1571 health facilities listed for 1992, three are specialised hospitals for psychiatric patients or leprosy and 781 are mobile clinics.<sup>38</sup>

Salima district is one of nine districts that make the central region. The population of the district was about 280,000 in 1997 with estimated population density of 128 per square kilometres. The average population density in Malawi for the same year was 101. Availability of hospitals in Salima district is almost same as the national average, whereas the availability of health centre is twice as high as the national average (Vol.5, Table1.19). Comparison of districts in terms of availability of health facilities for the central region is shown in Vol.5, Table 1.20.

Detail analysis of distribution of health facilities and services can be found in the chapter on Referral System Assessment.

38 Health Information System, MOH, 1992