REPUBLIC OF MALAWI

HEALTH CARE WASTE MANAGEMENT PLAN

Executive Summary

March, 2003

EXECUTIVE SUMMARY

1. INTRODUCTION

The present proposal has been developed within the framework of the national HIV/AIDS and infection prevention program whose objectives are to contribute to the reduction of the HIV/AIDS prevalence and to reduce the impacts of the HIV/AIDS on the infected and affected people, through a community and multisectorial approach. The objective of this report is to elaborate a Health Care Waste Management Plan appropriately assessed, with clear institutional dispositions for its implementation. The plan of action was developed as a result of an assessment of Health Care Waste Management (HCWM) in 29 Health facilities of Malawi.

Health care services in Malawi are provided by three main agencies: the Ministry of Health and Population (MOHP); the Christian Health Association of Malawi (CHAM) and the Ministry of Local Government. Health services are provided at three levels: primary, secondary and tertiary. The country has 504 health care facilities, which include central hospitals, district hospitals, rural hospitals, private hospitals, health centres, maternity units and dispensaries. In 1998, the health staff comprised 3347 agents.

The assessment found that the main constraints in HCWM are:

- The institutional and legal framework is weak: HCWM is not a priority in the national health policy, and the institutional framework is marked by a lack of national strategy, clear responsibilities, specific guidelines and procedures in HCWM.

- Organization, collection and treatment of HCW are deficient: In spite of remarkable efforts in some health centres, the organization of HCWM by health facilities leaves a lot to be desired: absence of reliable data on amount of waste produced; no person/team responsible for HCW issues; insufficient protective equipment for staff; lack of HCW segregation; inadequate pre-collection, collection and storage containers; unsustainable HCW treatment systems; and inadequate financial resources.

- Knowledge and good HCWM practices are generally insufficient: Several socio-professional categories (hospital staff, collection staff, scavengers, people using recycled objects, etc.) are come into direct contact with HCW and are liable to HIV/AIDS contamination. Generally, medical staff are relatively conscious of the risks associated with HCW manipulation, even though most of them were not trained in HCW management. Ward attendants, ground staff and cleaners (responsible for the removal and emptying wastes dustbins within the health centres) have little awareness of the impacts and effects of bad HCW management. Health workers responsible for collection generally have a low level

of education. Most of them work in poor hygienic and protective conditions: not enough safety equipment, etc. Informal scavenging and recycling activities in the garbage dumps are opportunities and sources of income for poor people. Due to their very low level of education and precarious living conditions, it is difficult for them to understand the dangers related to waste scavenging and handling. The general public needs information about the dangers related to the materials collected in HCW, especially people using recycled products and those giving and/or receiving health care at home.

- Private companies are not involved in HCWM: In Malawi, no private companies are involved in solid waste collection (City Assemblies perform this function). For external transportation of HCW, the inexistence of specialized companies constitutes a major constraint for the health centres in need of external treatment.

- Financial resources allocated to HCW are not sufficient: Solid waste management suffers from lack of financial support from the state and local governments. In health facilities, financial resources are generally allocated more to clinical services than to waste management.

In order to address these weaknesses, a plan of action was recommended.

2.0 THE PLAN OF ACTION

2.1 Goal:

The goal of the Plan of Action (POA) is to prevent and mitigate the environmental and health impact of HCW on health care staff and the general public.

2.2 Objectives:

(i) to reduce infections due to HCW
(ii) to improve service in HCWM and mitigate the impacts of HCW on individuals and communities
(iii) to establish a well-managed multi-sector institutional framework for coordination and implementation of HCWM measures

Measures advocated in the HCWM plan have been structured around the following components:

Objective 1: Improve the institutional and legal framework in HCWM

Activities:

- Set up a structure for coordination and follow up of the HCWM plan
- develop regulations linked to HCWM
- develop technical guidelines in HCWM

Objective 2: Improve HCWM in health facilities

Activities:

- Regulate HCWM in the health facilities

- Supply the health facilities with materials and equipment for HCWM
- Promote the use of recyclable materials
- Set up procedures of control in HCW management
- Allocate financial resources for HCWM activities

Objective 3: Train the hospital staff and the HCW handlers

Activities

- Develop training programs and train trainers
- Train all the staff working in health care waste management
- Evaluate the implementation of the training program

Objective 4: Make the general public aware of the risks linked to HCWM

Activities

- Inform public of dangers linked with HCW and reuse of scavenged materials
- Ensure sound HCWM in the household (home based care)

Objective 5: Support private initiatives and partnership in HCWM

Activities

- Inform private companies of the business opportunities in solid waste management
- Set up framework and partnership between public sector and private sector in HCWM

Objective 6: Monitoring and Evaluation of HCWM plan

Activities

- Follow up the execution and evaluate the HCWM Plan

2.4 Treatment and elimination systems

Based on a comparative analysis taking into account economic and technical criteria, resulted in the following treatment recommendations :

- modern incinerators in Central /national and district hospitals because of their fairly low cost;
- local incinerators (built with local material) in health centres and urban health posts because of their very low cost and small quantities of HCW produced in these facilities;
- pit latrines in rural health posts because of very low HCW production;
- stabilized sides of pits and bottom pits for health posts.

All solid waste cannot be incinerated. Inappropriate incinerators or the inability of waste to complete combustion (plastic, chemical and radioactive products, mercury, heavy metals, etc.) can generate air pollution. For this reason, incinerators are recommended in the action plan as part of a waste segregation strategy at the source, in order to greatly reduce the infectious wastes and restrict the contamination of other non contagious wastes (papers, plastics, pipes and syringes, etc.). All types of wastes shall not be incinerated. Selective sifting will be used to send all non contaminated wastes towards more classical treatment systems (disinfection, burial, garbage dumps), so that only the contaminated or risk-based wastes (needles, etc.) will be incinerated. These categories of wastes do not emit toxic products (or very few), especially dioxins and mercury. Moreover, the system allows total melting of needles which are the most feared vectors for the accidental transmission of HIV/AIDS. In health centres located in district and rural areas, the quantities of health care wastes produced are very small. If segregation is respected, the volume to be incinerated will be insignificant. In addition, the promotion of the use of non-chlorinated plastic containers will help reduce pollution stemming from incineration. In order for institutions to meet waste management standards, the following alternative options are

proposed: chemical disinfection; safe land-filling or burial within hospital grounds (if appropriate area is available). Other systems (autoclaving, microwaves) are not recommended because they are very expensive and require highly qualified staff for operating.

For liquid wastes, chemical disinfecting is the most effective way of treating infectious wastes. A combined system would be recommended (disinfecting and septic tank) for Regional and rural health facilities. In the central hospitals, owing to the important volumes of water involved, it is preferable to choose a physico-chemical treatment, including a disinfecting post. However, this system requires more detailed study in terms of feasibility.

3.0 ACTION PLAN FOR THE IMPLEMENTATION

3.1 PROGRAM

Before such an elaborate plan is implemented, certain activities can be started immediately, and others can be implemented over the medium/long term.

3.1.1. Immediate activities

The following actions could be carried out **immediately**:

- set up a structure for coordination and follow up of the POA
- elaboration and dissemination of regulations and basic technical guidelines in HCWM
- elaboration of HCWM training program
- elaboration of public awareness programmes
- planning of start-up activities
- set up of HCWM procedures in health facilities, including health staff responsibilities

3.1.2 Short term activities:

- training of trainers
- training all the stakeholders involved in the HCWM
- diffusing public awareness programmes
- assessment of training program implementation
- halfway appraisal

3.1.3. Medium/longer term activities:

- improvement of HCWM in health facilities
- Supporting private initiatives and partnership in HCWM
- Monitoring and evaluation of the HCWM plan

3.2 IMPLEMENTATION

3.2.1 Improvement of the institutional and legal framework

The Ministry of Health and Population (MOHP) will be responsible for the improvement of the institutional and legal framework. These activities should be conducted in the first year of the programme by the Department of Preventive Health Services (DPHS) and through the Environmental Health Service (EHS).

3.2.2 Training

The training activities should be led by the DPHS /EHS of the MOHP. This structure has competence in HCWM and could be assisted by training institutions in this field. At district

levels, management of training activities should be assigned to the District team. Specific training activities will be done in the first two years of the programme

3.2.3 Public awareness

The Health Education Unit of the MOHP will lead the activities intended to make the general public aware about HCW. At the local level, the District team will do the supervision. These activities will take place over a four year period, through district public meetings, radio and television messages, posters, etc.,

3.2.4 Control and Monitoring of POA

At the local level, the control and monitoring of HCWM plan implementation should be done by the District team which will ensure monthly monitoring, while the yearly follow up will be realized by EHS/DPHS.

3.2.5 Evaluation and supervision of POA

The evaluation of the HCWM Plan should be assigned to international consultants (under supervision of EHS/DPHS), to ensure objectivity. This evaluation should be done halfway through (at the end of the 2nd year) and at the end of the project.

4.0 COST OF THE HCWM PLAN

The cost of the HCWM activities related to the reinforcement of the institutional and legal framework, training and public awareness, is estimated at 423 000 USD, broken down as follows:

- Improvement of institutional and legal framework : 20 000 USD
- training : 270 000 USD
- public awareness : 81 000 USD
- Implementation of HCWM plan : 52 000 USD

For the complementary measures to improve HCW collection and treatment in the health facilities, the cost of initial complementary measures amount to 548 000 USD.