



REPUBLIC OF UGANDA

MINISTRY OF HEALTH

**National Health Care Waste Management Plan
2009/10- 2011/12**

Prepared by
Healthcare Waste Management Technical Working Group

ACRONYMS

AIDS	:	Acquired Immunodeficiency Syndrome
DHT	:	District Health Team
GH	:	General Hospital
HC	:	Health Centre
HCF	:	Health Care Facility
HCII	:	Health Centre II
HCIII	:	Health Centre III
HCIV	:	Health Centre IV
HCW	:	Healthcare Waste
HCWM	:	Healthcare Waste Management
HIV	:	Human Immunodeficiency Virus
HMIS	:	Health Management Information System
HSD	:	Health Sub District
MMIS	:	Making Medical Injections Safer Project
MOH	:	Ministry of Health
NEMA	:	National Environment Management Authority
NH	:	National Hospital
NHP	:	National Health Policy
PNFP	:	Private Not For Profit
RRH	:	Regional Referral Hospital
Ug.	:	Uganda
WHO	:	World Health Organisation

EXECUTIVE SUMMARY

Uganda and its citizens are exposed to unnecessary health and environmental risks from unsafe healthcare waste management (HCWM) practices. Healthcare waste management (HCWM) in Uganda is well below minimum hygiene standards and as a result, healthcare workers, patients, and communities are exposed to nosocomial infections both within Healthcare Facilities (HCFs) and the surrounding communities. Furthermore, negative impacts on Uganda's natural resources (air, soil, and water) occur when healthcare wastes are disposed of improperly.

In the first part of this document, an expert analysis by the HCWM Technical Working Group (HCWM TWG) presents the current situation affecting HCWM in Uganda. The second part of the document presents concrete recommendations of how Uganda can systematically improve HCWM to provide safe disposal of healthcare wastes. Finally, these recommendations are translated in the third part of this document into a strategic 5-year National Action Plan to progressively improve HCWM in Uganda.

The current situation affecting HCWM in Uganda includes the following:

- 1) There are currently significant gaps in the legislation for an efficient and well monitored HCWM system in Uganda. There are no healthcare waste management regulations and the National Environment Act does not make specific and detailed provisions for HCW management. Enforcement of proper HCWM by regulatory bodies therefore remains a challenge.
- 2) Current HCWM practices include poor segregation, handling and disposal practices of many health facilities and these are representative practices throughout Uganda and pose serious health hazards to people living in the vicinity of healthcare institutions.
- 3) The institutional capacity to handle HCW is currently inadequate. The weaknesses include inadequate legislative and enforcement tools, poor financial base of most health facilities, inadequate human resource base especially in key technical areas, poor maintenance habits and poor administrative and management capabilities among others.

The recommendations for improving HCWM are covered under five main objectives as follows:

1. Develop the legal and regulatory framework for HCWM
2. Rationalise the HCWM practices within healthcare facilities.
3. Launch capacity building and training measures
4. Develop specific financial resources dedicated to HCWM
5. Set up a monitoring plan for HCWM
6. Reduce the pollution associated with HCWM.

The National Healthcare Waste Management Plan identifies several opportunities and activities to advance HCWM in Uganda. Some key activities and/or opportunities include the following:

- 1) Review and update the National Policy and National Guidelines on HCWM by HCWM stakeholders and disseminate to all stakeholders particularly in all healthcare facilities.
- 2) Review the planning guidelines for healthcare facilities to cater for HCWM.
- 3) Formulate subsidiary legislation on HCWM particularly regulations on HCWM.
- 4) The National Action Plan prepared as the third part of this National HCWM Plan should be implemented over the HSSPII period to progressively upgrade the current HCWM practices.
- 5) Standardise segregation procedures in Healthcare Facilities as indicated in the standards for HCWM by implementing a three bin system associated with colour coding and labelling system. The following bins/classes are recommended;
 - a. Domestic waste (black)
 - b. Infectious waste (Yellow)
 - c. Sharps (safety boxes) Yellow
- 6) Development of treatment and final disposal methods according to the level and the location of the healthcare facility where waste is generated.
- 7) Reinforce institutional capacities of the health facilities through technical training of health workers.
- 8) Develop ongoing awareness and training programmes for existing healthcare staff and support staff. Review the curricula of medical and nursing schools introducing critical HCWM concepts where missing.
- 9) Incorporate HCWM into annual work plans at all levels.
- 10) Develop tools for monitoring HCWM to measure the implementation of the HCWM guidelines in the facilities and enforce a minimum standard of HCWM.

This National Healthcare Waste management Plan including the five year national Action Plan is intended to address the problems associated with HCWM and provide a way forward for the improvement of HCWM in Uganda.

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PART 1: SITUATIONAL ANALYSIS

SECTION 1: OVERVIEW OF HEALTH SYSTEM

Uganda has a population of more than 28million (July 2006 estimate) and a population growth rate of 3.4% (2006 estimate).

1.1 Structure of the Health Services

The policy objective for health infrastructure is to provide a network of functional, efficient and sustainable health infrastructure for effective health care delivery closer to the people.

The national standard is to have the following structures in place and functional

i) Ministry of Health and other National level institutions

The core functions of the Ministry of Health are clearly defined and the roles of the National level institutions are defined.

ii) National referral hospitals

In Uganda, hospital services are provided by public, private not for profit and private health institutions. The degree of specialisation varies between hospitals. The public hospitals are divided into three groups according to the level of service available and their responsibilities: general hospitals, regional referral hospitals and national referral hospitals. For the national referral hospitals, in addition to the services offered at regional referral hospitals, they provide comprehensive specialist services and are involved in teaching and health research.

iii) Regional referral hospitals

In addition to the services offered at the general hospital, these hospitals offer specialist services such as psychiatry, ear, nose and throat (ENT), radiology, pathology, ophthalmology, higher level surgical and medical services including teaching and research. General hospitals provide preventive, promotive, outpatient curative, maternity, inpatient health services, emergency surgery, blood transfusion, laboratory and other general services. They also provide in-service training, consultation and research in support of the community based health care programmes.

iv) District Health Service:

The District Health system comprises a well defined population living within a clearly delineated administrative and geographical boundary and includes all actors in the recognized spheres of health within the district. The National Health policy established the health sub district(HSD) as a functional subdivision or service zone of the district health system to bring essential care closer to the people, allow for identification of local priorities, involve communities in the

planning and management of health services and increase the responsiveness to local need.

v) Health sub district:

Referral facility

The leadership of the HSD is located in an existing hospital or a Health Centre IV (HCIV) Public or PNFP located within the HSD.

Health Centre III

HC III offers continuous basic preventive, promotive and curative care and provides support supervision of the community and HCII's facilities under its jurisdiction. There are provisions for laboratory services for diagnosis, maternity care and first referral cover for the sub-county.

Health Centre II

HC II represents the first level of interface between the formal health sector and the communities. HC II's provide only ambulatory services except in strategic locations such as poor access to HCIII or HC IV where as interim strategy maternity services are being provided.

Village health team (health centre I)

The NHP calls for the establishment of a network of functional village health teams to facilitate the process of community mobilization and empowerment for health action.

1.2 Administrative structure affecting HCWM

a) At Central level

The Ministry of Health initiates policy, coordinates overall sector activities and brings together stakeholders at the central, district and community level. The NHP defines the core functions of the Ministry of Health as

- i) Policy formulation, setting standards and quality assurance
- ii) Resource mobilization
- iii) Capacity development, training and technical support
- iv) Provision of nationally coordinated services e.g. Epidemic control
- v) Coordination of health research
- vi) Monitoring and evaluation of the overall sector performance.

It is important to note that responsibility for the development of healthcare waste management (HCWM) policy, regulations as well as plan formulation at national level lies with the Ministry of Health.

b) At District level

Under decentralisation, the roles and responsibilities of the centre and the districts were redefined. The HSD is a functional subdivision or service zone of the district health system. The responsibility for service delivery lies with the

HSD. The District Health Teams (DHTs) retain the functions of planning, budgeting, coordination of resource mobilization and monitoring of overall district performance. The HSDs are administratively accountable to the district local government which is directly under the Ministry of Local Government. However the HSDs are technically accountable to the Ministry of Health.

SECTION 2: LEGAL AND REGULATORY HCWM FRAMEWORKS

This section reviews the current legal provisions for HCWM in Uganda. Legal and institutional HCWM policies on HCWM constitute the essential backbone for safe management of healthcare waste (HCW).

Relevant policies in place include:

- National Health Policy
- Injection safety and healthcare waste management policy
- Hospital policy

2.1 Review of the Existing Environmental and Health Legislation

Although currently there is no specific legislation, regulations or bye laws for the management of healthcare waste In Uganda, there are relevant laws and regulations pertaining to the protection of the environment and health.

I) The Constitution of the republic of Uganda, 1995

This has several objectives and articles referring to environment.

In objective XII, the constitution requires the state to protect important natural resources including land, water, wetlands, minerals, oil, fauna and flora on behalf of the people of Uganda. Objective XXI requires the state to take all practical measures to promote a good water management system at all levels.

Under Objective XXVII,

- i) The state shall promote sustainable development and public awareness of the need to manage land, air, water resources in a balanced and sustainable manner for the present and future generations.
- ii) The utilisation of natural resources of Uganda shall be managed in such a way as to meet the development and environmental needs of the present and future generations of Ugandans and in particular, the state shall take possible measures to prevent or minimize damage and destruction to land, air and water resources resulting from pollution or other causes.
- iii) The state shall promote and implement energy policies that will ensure that peoples basic needs and those of environmental preservation are met.

Under Article 39, the constitution of the Republic of Uganda entitles every person to a clean and healthy environment.

ii) The Public Health Act, 2000

The Act provides for prevention of diseases to the public arising from sewage, poor sanitation and pollution of the environment. It regulates the use of chemicals for public health and sets up the Health Inspectorate to ensure compliance. It also sets up the drainage and sanitation rules which specifically

mention technical aspects of waste disposal. It gives guidance on waste management in general.

It also prohibits throwing or emptying any matter likely to injure public sewers or drains or interfere with the free flow of the contents of sewers into a public sewer.

Section 105 of the Public health Act imposes a duty on the local authority to take measures to prevent any pollution dangerous to health of any water supply which the public has a right to use for drinking or domestic purposes.

Section 139 of the Public health Act prescribes for contravention of any provision of the Act by a company. The manager or Secretary may be held liable for such contravention.

iii) The National Environment Act, cap 153,

It prohibits the discharge of hazardous substances into any part of the environment except with the guidelines of the National Environment Management; prohibits pollution contrary to established standards; prohibits the illegal traffic of hazardous wastes and gives any person generating hazardous wastes the duty of the management of his wastes. This is a new law whose effect is yet to be felt.

The National Environment Act, Cap 153 requires NEMA in consultation with lead agencies to establish environment standards. Currently many environmental standards have been prescribed and some of the relevant ones include

- The National Environment Waste Management regulations, 1999, require a person who owns or controls a facility or premises which generate waste to minimize the waste generated by adopting cleaner production methods. They also offer guidance on application for a license to transport or store waste, license to operate a waste treatment plant and other requirements for waste in general. They do not explicitly address the area of healthcare waste management.

iv) The Occupational safety and Health Act No.9, 2006

The purpose of this Act is to provide for the safety and health of persons at work such as in factories, plantations and other work places where hazardous work may be found. It spells out what should be done before anyone operates a factory. The Act spells out the duties and obligations of both employers and the employees in ensuring safety and health for all persons at work places. It points out the methods and measures that should be put in place to ensure safety and health at work.

iv) The Water Act, Cap 52

The water Act, Cap 52 provides for and regulates supply of water to the public. Under Section 34, any person who pollutes or causes risk of pollution by any foul

liquid gas or other noxious matter to enter into a waterworks shall be liable on conviction to a fine not exceeding shillings 500 and to a further fine of shillings 20 per day while the offence continues. The Act is enforced by the national Water and Sewerage Corporation and the Water Development Directorate.

v) The Land Act

This Act provides for prevention of pollution of public land including water bodies in it with dangerous materials.

2.2 Hospital healthcare Waste Regulations

There are no specific hospital healthcare waste regulations.

2.3 Conclusions

The existing legal provisions do not ensure that medical institutions, Local Government Authorities and Central Government units associated with the generation and management of HCW ensure a duty of care and take precautionary measures to protect health workers, waste handlers, the general public and the environment from adverse effects of improper handling of HCW.

This lack of provisions makes it difficult for the medical institutions to set up integrated HCWM plans and treatment and disposal facilities since there is no legal framework or codified penalties for improper conduct.

There are currently significant gaps in the legislation for an efficient and well monitored HCWM system in Uganda. There are no National Healthcare waste management regulations and the National Environment Act does not make specific and detailed provisions for HCW management.

- Protection is more for the environment and does not emphasize infection control.
- Solid waste management is not stressed.
- Institutional laws and regulations were not revised ??

There are no legal indications on authorised HCWM practices. Enforcement of proper HCWM by regulatory bodies therefore remains a challenge.

SECTION 3: CHARACTERISATION OF HCW PRODUCTION

In order to develop an efficient HCWM plan, it is important that decision makers in Uganda do the following:

- Select appropriate HCW treatment and disposal technologies
- Decide on a centralized or decentralized system for each facility
- Develop reliable cost estimations and
- Identify regular and sufficient funds for operation and maintenance.

There is a need therefore for relevant bodies such as the Ministry of Health and the local Governments to evaluate the current and the future levels of waste production per health facility category and region with a maximum accuracy. Characterization of the types of waste, source of waste generation, and volume of waste generated are also important considerations in the development of HCWM plans.

3.1 Types of HCW Generated

A major portion (75-90%) of HCW is non-hazardous or general in nature, comparable to domestic waste. The remaining 10-25% of HCW is regarded as hazardous. The hazardous nature of HCW may be due to the following properties:

- (a) It contains infectious agents
- (b) It is cytotoxic or genotoxic
- (c) It contains toxic or hazardous chemicals or pharmaceuticals
- (d) It is radioactive
- (e) It contains sharps

HCWM plans must be developed at all health sector levels as accidental exposure to hazardous or potentially hazardous HCW can induce disease or injury hence the need to safely manage hazardous waste. Hazardous healthcare waste can be classified by the type of risk that it presents.

Table 1: Classification, description, and examples of healthcare waste classes

CLASSIFICATION AND DESCRIPTION	EXAMPLES
NON-HAZARDOUS	
Class 1: NON-RISK GENERAL WASTE Similar to normal household municipal waste and can be managed by the municipal waste services.	Paper, cardboard, plastic, kitchen waste, ash, sawdust, pieces of wood segregated from hazardous waste at the point of generation
HAZARDOUS	
Class 2: INFECTIOUS WASTE Generated by both inpatients/out-patients or animals, this waste is known or likely to contain pathogenic micro-organisms and can be dangerous or infectious to both patients, healthcare workers and the public. It therefore requires special management both inside and outside the hospital.	Laboratory waste, materials potentially infected blood, swabs, materials that have been in used in surgery or been in contact with patients.
Class 4: PATHOLOGICAL / ANATOMICAL Includes amputations and other body tissues resulting from surgical operations, autopsy (post-mortem), or delivery. Requires special treatment for ethical and aesthetic reasons.	Internal body organs, amputated limbs, placentas, foetus. Also includes urine and blood products.
Class 5: CHEMICAL, PHARMACEUTICAL, GENOTOXIC WASTE Wastes, including expired products, generated from the pharmacy, radiology and from chemotherapy.	Vials, connecting tubing, drugs, vaccines, pharmaceutical products, disinfection solutions.
HIGHLY HAZARDOUS	
Class 3: SHARPS These are sharp-edged wastes that can cause cuts or puncture wounds (e.g. needle stick injuries). They are hazardous whether or not they are contaminated with blood. They must be segregated, packaged, and handled with specific procedures within the health facility.	Needles, syringes, surgical blades, scalpels, test tubes, ampoules, glass instruments, pipettes.
Class6: HIGHLY INFECTIOUS These highly infectious wastes required immediate treatment by chemical disinfectants or autoclaving before joining the hazardous HCW stream.	Sputum cultures of TB laboratories, contaminated blood clots and glassware, highly concentrated microbiological cultures carried out in medical analysis laboratories.
Class 7: RADIOACTIVE WASTE Any solid, liquid, or pathological waste contaminated with radioactive isotopes of any kind	Radioactive papers, gloves, cotton swabs, needles (sharps), liquid-patient excretion, spent radiation sources radium needles.

3.2 Sources of Healthcare waste

Healthcare waste is generated from both public and private healthcare facilities. Healthcare waste facilities can be classified as major or minor sources depending on the volume of healthcare waste generated as follows:

Major sources: National/Teaching/Specialist hospitals, Regional Referral hospitals, General hospitals, Big Private hospitals and Laboratories, Mortuaries, and Research centres.

Small sources: Small Private Laboratories, Health Centres, Clinics, Pharmacies, Veterinary, Maternity Homes, bone setting centres, tattoo centres, acupuncture clinics, and other centres.

The amount and composition of healthcare waste generated by healthcare facilities depends on waste management system, type of health-care establishments, the number of patients treated on a daily basis, and the level of complexity specialization of the health care facility.

3.3 Estimation of Healthcare Waste Quantities Generated by Facilities.

Data on healthcare waste volumes generated by healthcare facilities in Uganda is extremely limited. A national study on HCWM in Uganda (Carl Bro, 2003) estimated the waste generation as follows:

- 0.1kg/bed/day (excl. pathological waste) at hospital level.
- 1.5kg/day at HCIV level
- 0.6kg/day at HCIII level
- 0.5kg/day at HCII level

The results are estimations but give an indication of waste production at the different levels.

Estimations carried out during the National Assessment can only give an indication of total volumes collected but are not accurate.

SECTION 4: CHARACTERISATION OF THE HCWM PRACTICES

The HCW generated within a HCF should always follow an appropriate and well-identified stream from their point of generation until their final disposal. This stream is composed of several steps that include: generation, segregation, collection and on-site transportation, on-site storage, offsite transportation (if needed) and finally on or off-site treatment and disposal.

4.1 Summary of present state of HCWM practices in Uganda

4.1.1 Segregation, Packaging and Labelling

Segregation is one of the most important steps to successfully manage HCW. It consists of separating the different waste streams based on the hazardous properties of the waste, the type of treatment and disposal methods that are applied. A recommended way of identifying HCW categories is by sorting the waste into color coded, well-packed and labeled containers. Segregation must always be applied at source.

Given the fact that 10-25% of the HCW is hazardous, treatment and disposal costs could be greatly reduced if proper segregation were performed. Segregating hazardous from non hazardous waste also significantly reduces the risks of infecting workers handling HCW. Actually the part of the HCW that is hazardous and requires special treatment could be reduced to some 2-5% if the hazardous part were immediately separated from the other waste.

a) In Hospitals

According to the results of the national assessment (2007) using the WHO Rapid assessment tool, 42% of the hospitals did not segregate their waste and did not have protective gear for handling the waste. This also includes some hospitals where there was an effort to segregate but only into two categories of waste that is sharps and other waste. Storage containers were available for infectious wastes and sharps and only 14% had problems of either no specific container of infectious waste, no rigid container for sharps or shortages of sharps containers. In particular sharps are discarded into separate containers which are a very positive aspect.

Segregation Containers:

Waste produced within the hospitals is segregated as follows:

- Non risk HCW or domestic waste: Usually collected in plastic or metallic bins of different sizes (10, 20 litres etc) and colors. The bins are not lined with bags.
- Infectious waste: Usually collected together into a variety of containers like plastic bins that are usually covered. These containers, located at strategic points inside the wards are not lined with leak proof bags. They

are often mixed at storage points and disposed of with domestic waste. Anatomical waste and placentas are generally collected and disposed of separately. According to national assessment (2007), 14% did not have a specific container for infectious waste, no rigid container for sharps and had reported shortages of sharps boxes where they were used. Even where there were specific containers, segregation was not well done.

- Sharps: Generally collected in plastic containers or safety boxes. Most hospitals utilized plastic containers and safety boxes were mainly used for immunization services. In some facilities, needles manually separated from syringes and needle put in plastic container or empty Jik bottle to maximize space in bucket or jerry cans for syringes. Also they felt it made it safer and easier to handle. Recapping was also carried out in some facilities and this was reported to be in areas where the standards are not applied yet. Shortages were only reported in 25% of the hospitals according to the national assessment (2007). This was due to the use of multi purpose containers for sharps. Safety boxes were also overfilled in most cases. Where segregation was not well done, sharps were seen with other waste in plastic bins.
- Hazardous and non hazardous pharmaceutical waste: These are generally collected from the hospital in their containers or put aside in boxes or plastic containers.
- Highly infectious waste: This is put aside and pre-treated before being disposed of with the medical waste. The pre-treatment consists in putting the items to be discarded in a solution of Sodium hypochlorite over night. However some hazardous waste such as TB sputum cups are not systematically disinfected before being discarded.
- Radioactive waste: This is kept behind a lead shield for half life to expire but there are no clear guidelines and regulations on this.

b) In Health Centres and clinics

The HCW segregation practices in health centre do not differ significantly from the ones observed in the hospitals. According to the national assessment (2007) using the WHO rapid assessment tool, 54% of the HC III's and HCIV's were not carrying out segregation and had no protective gear for handling of waste. In addition 61% of the HCII's were not carrying out segregation and had no protective gear for handling of waste.

The national assessment (2007) revealed that only 26% of the HCIII's and HCIV's did not have a specific container for infectious waste, did not have a rigid container for sharps and reported shortages of sharps boxes where they were used. This was a positive aspect in terms of containers. However it should be noted that even where there was a specific container for infectious waste, segregation was not well done in most cases.

According to the mid term survey of phase 2, MMIS Districts (2007)³ - Hoima, Mbale, Yumbe, Kabale, the following were the findings:

- 7% of HC's had evidence of loose sharps, overflowing, pierced or open sharps containers.
- No unit with evidence of used sharps outside HC.

According to the Evaluation of Phase1, MMIS districts (2006)⁴ - Mpigi, Nebbi, Mbarara, Pallisa the following were the findings:

Less than 5% of HC's had overflowing or pierced safety boxes (15% at baseline).

- Less than 10% of HC's had sharps in open container or improperly disposed of.
- 5% of HC's had sharps outside the HC.

In addition evaluation of phase1 MMIS districts (2006)⁴ Mpigi, Nebbi, Mbarara and Pallisa revealed that 93% of HC had safety boxes present in injection areas.

According to the baseline survey. of phase 2, MMIS districts (2004)²- Hoima, Mbale, Yumbe and Kabale, the following were the findings:

- 45% of HC's were carrying out segregation.
- 55% of HC's had safe storage of filled safety boxes.
- 51% of HC's had tightly sealed safety boxes awaiting destruction.
- 25% of HC's had sharps waste outside health facility.

The baseline of phase 2 MMIS districts (2004)² - Hoima, Mbale, Yumbe and Kabale revealed the following:

- No HC had safety boxes for curative services
- All HC's had safety boxes for immunization services.
- 45% of HC's had safety boxes as sharps containers in all in injection areas.

4.1.2 Collection, On-site transportation and storage

Waste must be collected on a regular basis and transported to a central storage area within the HCF before being treated or removed. The collection must follow specific routes through the HCF to reduce the passage of loaded carts through wards and other clean areas.

In hospitals, HCW is temporarily stored before being treated/ disposed of on-site or transported off site.

a) Collection and on-site transportation

The organization of the collection and onsite transportation depends on the type of HCF and the human resources available. One to two collections per day are normally scheduled (one in the morning and one in the afternoon), depending on the size of the HCF and in general cleaners are in charge of this duty. The following problems have been identified in almost all the facilities surveyed:

- Waste handlers are often not properly protected during waste handling. Personal protective equipment such as heavy duty gloves, aprons or overalls and boots are not available.

- Waste including syringes and needles often drop from overfilled bins/sharp boxes and can be found scattered on the ground inside the hospital compounds. There are no special carts for collection of the waste and waste is carried using the containers for waste.
- Collection of waste is not done on regular basis for health centre where the amount generated is limited.
- Deficient /non existent HCW color coding and libeling system making mistakes in segregation easy to occur and the risk of a waste handler coming accidentally into contact with hazardous waste high.

b) Storage in hospitals

In large health care facilities, medical waste and sharps are some times stored in specific locations. When there is no on-site disposal facility and when no special collection services are organized medical and domestic wastes are stored in the same location although segregation has been previously ensured.

According to the national assessment (2007), 58% of the hospitals did not have restricted access to the storage area. This may appear satisfactory but in view of the types of waste generated, the inadequate behaviors (no regular hand washing practices, free access to wards etc) the risk is high.

In municipalities where off site disposal is ensured by the local authorities, the skip containers are removed when full and therefore the recommended maximum storage time of 24hrs is exceeded. This leads to leakages from the skip container and sometimes strong putrefaction occurs.

c) Storage in health centre and clinics

Due to the limited amounts of waste generated at the health centers and clinics, there is no storage of waste. However the HCW may not be disposed of on a regular basis and very often it remains for days in the pits or drums before being burnt. According to the national assessment (2007) this was found to be the case for 67% of the HCIII's and HCIV's and 64% of the HCII's. In most cases the waste was not burnt regularly and therefore the disposal pits acted as temporary storage facilities.

4.1.3 Treatment and Disposal

Hazardous /infectious HCW can be treated on-site or off-site. On-site treatment is often the only possible option in rural HCF's but on site treatment can also be carried out for HCW generated in urban HCF's.

On-site treatment systems are particularly appropriate in areas where hospitals are situated far from each other and the road system is poor. Above all in urban areas on site treatment remains the only possibility to be considered when the municipal authorities cannot ensure a regular and reliable transportation system of the waste.

Incineration and burning are the only treatment/disposal technologies known in the Uganda medical institutions. Alternative technologies exist to treat hazardous/infectious waste to reach an acceptable level to be regarded as general waste.

a) In Hospitals

None of the hospitals visited had the necessary equipment to correctly incinerate or treat the hazardous HCW generated. This is with the exception of one hospital where the incinerator was adequate but not sustainable in terms of running costs and therefore not used. Therefore all categories of hazardous/ infectious waste are burnt except placentas and anatomical waste that are too difficult to burn and are therefore buried or disposed off in placenta pits. Current disposal is affected by inadequate funds, lack of specific budget lines and limited technical knowledge.

The following practices have been observed:

- Medical and pharmaceutical wastes as well as sharps are burnt in shallow pits with kerosene or any other flammable material to initiate the combustion. The burning is carried out on a periodic basis (from daily to weekly depending on the resources of the HCF). Waste is burnt at low temperatures that are insufficient to properly deal with these wastes. In addition, air pollutants are released that constitute environmental health threats.
- Due to poor segregation, medical wastes can be collected by the municipal services and disposed of together in dump sites. There is no proper sanitary landfill where the waste could be safely buried.
- Anatomical and pathological wastes generated in operation theatres are disposed separately. They are buried inside the hospital compound. Placentas are also disposed off in placenta pits. In some regions they are given back to the family who then buries them.

In some hospitals, the MOH tried to build Demontfort incinerators and another type of brick incinerator. The Demontfort incinerator had some limitations which affected its performance (MOH, 2004). The other type of incinerator (Mubende type) has performed well on a limited scale but needs to be modified in view of reported cracking and difficulty in sourcing for an appropriate burner.

Finally the lack of affordable transport services in municipalities, low monitoring capacities of the health authorities reduce drastically the waste treatment and disposal options.

b) In health centre and clinics

There is no significant difference in the way HCW is treated and disposed of at the lower level units compared to hospitals. Waste is generally burnt except the placentas that are buried or disposed off in the placenta pit. The following practices were observed:

- Open burning is the main method of treatment. Infectious waste, sharps and some pharmaceutical waste are burnt with kerosene in open pits. This is done at low temperatures leading to release of air pollutants. In addition the burning is irregular and affected by availability of kerosene.
- In a few HCF's with incinerators, waste is burnt in the incinerator.
- Disposal of HCW is done in shallow pits that do not differ much from dump sites. There is no proper sanitary landfill where the medical waste could be safely buried.

According to the report on Evaluation of phase1 MMIS districts (2006)⁴, Mpigi, Nebbi, Mbarara and Pallisa the following were the findings:

- 17% of sampled facilities had incinerators.
- 70% of health units used open burning for disposal of sharps waste.
- Over 60% of health units use open burning for waste disposal.

The mapping of existing waste disposal facilities in Hoima, 2005⁷ revealed that only 3 out of 44 health units mapped had standard medical waste pits.

From the report on assessment of Demontfort incinerators (2004), Demontfort incinerators were constructed at HCIV in most cases. Fifty six (56) incinerators were constructed including a medical waste/ash pit. The following were the findings:

- 44% of sampled incinerators (18No.) were in use, mainly for burning of safety boxes.
- Performance of incinerator dependent on type of waste, proper loading and skill of operator.
- Good performance for readily combustible waste.
- Main limitations of the incinerator include limited capacity of the incinerator, ability to deal with wet waste, labour intensive nature of operation and the need for regular maintenance.

According to the Uganda National survey on injection practices (2003)⁵ 2% of the health units had incinerators.

The study on Improvement of healthcare waste management in Uganda (Carl Bro, 2003)¹ also revealed that 12% of incinerators were functioning optimally.

C) Specific cases

The disposal of pharmaceutical waste

Pharmaceutical waste has in the recent past been burnt using the incinerator at Nakasongola barracks. In a few isolated cases, some pharmaceutical waste has been burnt in open pits.

Disposal of waste from specialized units

Need to ascertain what happens to waste from the nuclear medicine unit, x-ray unit and others.

4.1.4 Risks from current HCWM practices

The poor segregation, handling and disposal practices of many hospitals, clinics and health centre are likely representative of practices throughout Uganda and pose serious health hazards to people living in the vicinity of healthcare institutions. Almost all the healthcare institutions dispose of all wastes to dumpsites or shallow pits without pre-treatment leading to unhealthy and hazardous environment around the health institutions affecting patients, staff and the community.

Without a proper segregation system for sharps waste, the National assessment (2007) shows that scavengers who collect waste from dump sites or shallow pits are at risk of injury from sharp instruments and direct contact with infectious materials. The Kiteezi “sanitary landfill” which is the designated disposal site for waste in Kampala is operated like a dump site and because of poor segregation exposes the scavengers to the above risk.

The current burning practices at low temperatures (300 to 400deg. C) release significant quantities of air pollutants that constitute an environmental health threat.

Untreated injection equipment in particular poses a transmission risk for blood borne infections. Unsafe injections practices are responsible for transmission of several blood borne infections like HIV/AIDS, Hepatitis B and C.

According to the Uganda national survey on injection practices (2003), there was a needle stick injury prevalence of 44% in a period of one year prior to the survey. These risks potentially affect not only the health personnel but the capacity of the entire health system of Uganda.

SECTION 5: APPRAISAL OF THE INSTITUTIONAL CAPACITIES OF THE HEALTH SYSTEM

The institutional capacity to handle HCW within the Health Services is currently inadequate. These weaknesses include but are not limited to:

- Inadequate legislative and enforcement tools
- Poor financial base of most HC institutions in the country
- Inadequate human resource base especially in key technical areas
- Poor maintenance habits in the country
- Poor administrative and management capabilities.

5.1 Management and Planning Capacities

a) Central Level

The Ministry of Health plays a major role in the day-to-day management of the Public Health Services.

Capacity to carry out its role still remains limited and overstretched. Statistical data sharing across sectors and also across different services in the same organization remains a challenge. The project approach and the implementation of vertical programmes lead to fragmented planning and implementation arrangements with many parallel systems co-existing with a serious lack of horizontal coordination.

b) Local Government Level

The planning for Health services is decentralized but with guidance from the central level. The District Health Teams are key components for health planning, budgeting, monitoring and evaluation. Unfortunately, their limited human, logistic and financial resources jeopardize their capacity to implement or supervise the health programmes that are planned annually. Their institutional capacities remain severely restricted.

c) Healthcare facility Level

The health facility is responsible for service delivery in accordance with the annual plans.

The major problems facing this level include:

- Gross under-funding for HCWM
- Weak management structures
- Poor infrastructural development
- Lack of basic work equipment.
- Lack of adequately trained staffed

5.2 Financial Resources

Funding for HCWM is poor or almost non-existent. This is due to the following:

- Low priority for HCWM

- Lack of planning and budgeting for HCW
- Inadequate funds for the health sector

5.3 Monitoring and Control Capacities

Monitoring and control capacities are an integral part of an effective HCWM plan. At central level, this is done through quarterly Area teams supervision to the districts while at district level, this is done by district health teams to the lower facilities. However, HCWM has not been part of the monitoring check list until recently. In addition follow up of the supervision recommendations has not been adequately done in the past.

Other monitoring challenges include:

- Inadequate expertise at various levels
- Limited financial resources;
- Inadequate legal and regulatory provisions
- Understaffing of Health and Environmental Management Authorities.

5.4 Operation and Maintenance

There is a lack of preventive and routine maintenance of facilities in the country. The trend has always been to buy new equipment (often times very sophisticated ones with no plans on their maintenance). Over the years, the country has thus become a dumping ground for equipments which the purchasing facilities do not have the technical capacity or the will to maintain. Problems supporting proper operation and maintenance of HCWM systems and technologies include:

- Poor procurement habits
- Inadequate planning and logistics
- Poor maintenance culture

5.5 Training and capacity building

Curricula for most pre-service training only covers infection control and does not address detailed aspects of HCWM. The existing training manuals for inservice training does not have adequate content for HCWM.

Low level of training of manpower currently exists for HCWM at all levels in the country. This is because of the low priority accorded to HCWM. There is also a low level of awareness of the need to ensure proper HCWM practices.

Even where there is a designated officer in charge of HCW, no activities are carried out. There is also little capacity across the entire sector in the country for

PART 2: RECOMMENDATIONS

FUTURE PLANS FOR IMPROVING HCWM

1.1 Introduction:

The situation analysis of HCWM in the country clearly reveals that the current practices do not ensure safety for all the patients, health workers and the community. There is therefore need to systematically strengthen all segments of HCWM in Uganda. This will be achieved through implementation of an effective HCWM plan as elaborated below. The actions needed in the implementation of the plan require multi-sectoral cooperation, collaboration and interactions among all stakeholders.

A more comprehensive approach to HCWM should be adopted to ensure the success of the National HCWM plan. In principle, the following key objectives are recommended:

1. Develop the legal and regulatory framework for HCWM
2. Rationalise the HCWM practices within health care facilities
3. Launch capacity building and training measures
4. Develop specific financial resources dedicated to HCWM
5. Set-up a monitoring plan for HCWM
6. Reduce the pollution associated with HCWM

1.1 Develop the Legal and Regulatory Framework

To strengthen the legal regulatory framework for HCWM:

- The MOH should build capacity among health managers to ensure that they are well conversant with existing HCWM policies and laws. This will be achieved through meetings, written communications and interactive discussion.
- Where gaps in legislation have been identified; the MOH should formulate subsidiary legislation to bridge the gap. Such legislations could include a requirement for districts to allocate funds for HCWM and training of health workers.

- MOH, LGs and Heads of major health institutions should review health facility/institution plans to ensure that HCWM is incorporated.

- MOH, NEMA, NDA and LGs will:
 - a) Review the existing system for accrediting health facilities with the view of including standards on health infection control/HCWM. This could be achieved by putting in place updated standard forms for accrediting facilities that can be used throughout the country.
 - b) Advocate for raising awareness on the dangers of unsafe HCWM among health workers and communities by law enforcement agencies e.g. District environmental offices and health inspectorates.

- MOH and NEMA should develop standards on prohibiting pollution and illegal traffic of hazardous waste in regard to HCWM. Make sure the standards developed are disseminated to all districts, heads of major institutions (e.g. medical schools) and NGOs.

- MOH will develop guidelines/strategies for strengthening private sector involvement in HCWM.

- DHMT and heads of health institutions will implement HCWM plans and re-enforce internal rules in the health institutions to improve compliance with standard operating procedures.

- MOH will as need arises select members of the HCWM working group to participate in international scientific meetings (target three events annually).

1.2 Rationalise the HCWM Practices within Health Care Facilities.

- Comprehensive guidelines on HCWM will be developed by the MOH and will be disseminated through district workshops targeting members of Infection Control Committees and Infection Control Focal Persons. The trained infection control committee members and focal persons will then introduce the guidelines to all health workers in their facilities. The committees and focal persons will have to ensure compliance with set procedures. Similarly, detailed guidelines for safe on

and off site transportation of HCW will be developed. The guidelines will be simplified and translated into local languages for waste handlers.

- To enhance compliance with good HCWM practices, the MOH , LGs and health facility managers will procure and distribute HCWM equipments and supplies like protective gears, bins, bin liners, safety boxes, paraffin, disinfectants and autoclaves.
- MOH, LGs and stakeholders will develop final disposal methods that are affordable and environmental friendly.
- Health workers, partners and MOH will regularly conduct operational research to inform service providers of the best practices while identifying risks. Findings of the research and lessons learnt will be used to improve program efficiency.
- Efforts will be made by all stakeholders to design and implement evidence based safety procedures for waste handlers. These safety procedures will be reflected in tender bid documents for contracting out HCWM services.
- Health managers will identify appropriate storage space for HCW within health facilities including hospitals. The MOH will ensure that the space is provided for in architectural plans when designing or renovating health facilities.

1.3 Launch Capacity Building and Training

- Several strategies will be used to achieve the launching of capacity building and training. The one of the strategies will be to equip health care managers and handlers with competence to appropriately manage HCW. To achieve this, a training needs assessment will be carried out existing training materials in HCW will be revised/and or adopted and a guide for induction courses of all the new staff will be developed. A training of trainers at both National and District level will be conducted to be followed by training of all health care workers including medical students in various health institutions, waste care handlers and tenderers at health facility level.

- Another strategy will be to mobilize all stakeholders to support HCWM interventions at all levels. The activities for this intervention will include developing a communication strategy for HCWM, developing/reviewing or updating IEC materials, printing the developed IEC materials, disseminating and distributing IEC materials. Other activities will be sensitizing communities through local languages & health unit management committees on HCW and carrying out advocacy for HCWM and sensitization for policy regulators and decision makers such as parliamentary committees, professional councils/associations, district councils, sub-county local councils, health providers and community.
- To ensure regular and effective support supervision for HCWM a review and adoption of supervision tools/checklist will be carried out to support conduction of regular support supervision. HCWM/Infection Control Committees will be established and/or strengthened at every health facility and a review of terms of reference for HCWM/Infection Control Committees with the view of incorporating HCWM will be done.

1.4 Mobilise Financial Resources for HCWM

- MOH (clinical services) should incorporate HCWM recommendations and work plan in the mid-term review report for HSSP II implementation.
- MOH/DHOs/HCF in-charges and management teams should make appropriate adjustments in annual work plans for FY 2007/08 to incorporate HCWM as a priority action at all levels.
- Heads of departments in MOH and DHTs should incorporate HCWM in annual work plan for FY 2008/09 at all levels.
- MOH - HCWM working group should develop and submit terms of reference to cater for HCWM working groups in the MOH.
- MOH (ICS and HPD) and DHOs should create awareness among stakeholders on the need to support HCWM at all levels (centre, district and sub-county) and report of the awareness meeting should be available.

- MOH – Pharmacy should incorporate HCWM commodities and equipment into existing credit lines and other funding mechanisms.

1.5 Setting up a monitoring plan for Health Care Waste Management

Effective monitoring will be conducted with the view of; improving service provider skills, detecting changes in Practices, identifying risks, investigating factors contributing to Unsafe Practices, collecting accurate data that can be used for decision making, and to improve Program efficiency. To achieve this;

- Existing standards for practicing will be updated by the department of clinical services to ensure that they meet safety requirements. Such safety will include preventing cross transmission of infections even in an outbreak setting when the outbreak is not yet confirmed. **(we agreed this to be in the IPC unit)**
- The HCWM working group will select a set of indicators that will be used to evaluate the level of safety when handling waste while at the same time measuring progress made towards achieving set targets
- Specifications for Health Care Waste Management commodities will be developed by stakeholders. Upon approval, the specifications will be submitted to NDA for regulation.
- The Director of Health will write a communication to all district health offices advising them on the new monitoring requirements. Information communicated will include:
 - An update on Standards for Practising,
 - The need to routinely monitor and submit accurate data,
 - Details on the new specifications for HCWM commodities
 - The need to appoint and/or activate the Infection Control Committees and Infection Control Focal Persons at each health facility.

- To ensure quality monitoring, HCWM monitoring indicators will be incorporated into existing supervision checklists and area teams will be trained on how to capture the required information. To improve the technical capacity, the supervisors will all undergo training in Health Care Waste Management during which they will be equipped with skills to solve HCWM problems.
- Supportive supervision will be conducted regularly by supervisors at all levels (quarterly by central supervisors, monthly by district and HSD supervisors or health unit in-charges within the facilities). The supervisors will submit reports to their DHO's who will forward these reports quarterly to the Department of Clinical Services for compilation analysis and review. The findings will be presented on quarterly basis to the HCWM working group for further planning and action.

1.5.1 Institutional Framework:

A plan to monitor progress made in policy implementation will be generated and coordinated at the central level by the National HCWM working group and will be implemented at all levels by government, private not for profit and private for profit health facilities.

HCWM will fall under administration of clinical services. The training of health workers, development of implementation guidelines and continuous standardization of practices (minimization, segregation, treatment, handling and storage, on site transportation) will fall under Infection Prevention and Control unit. The planning, development, maintenance of final waste disposal units and off site transportation will fall under the division of infrastructure. The inspection and law enforcement especially compliance with environmental concerns, and creating awareness on existing laws will continue to be under the environmental division. Other environmental concerns like impact assessment and regulation will be under NEMA. Overseeing the safety of the health workers will be under Ministry of Gender and Labour through occupational safety and health but the MOH takes primary day-to-day responsibility of ensuring the safety of health workers.

1.6 To Reduce Pollution Associated with HCWM

- The need to reduce the pollution associated with HCW will be addressed through the strategies of;
 - Mobilizing stakeholders to participate in HCWM
 - Advocating for and Promoting the use of environment friendly options for treatment and disposal
 - Promoting the segregation of waste including plastics and glass
 - Ensuring maximum use of available options for treatment and disposal
- Quarterly review meetings to discuss environmental concerns of HCWM and continuous sensitization of communities on the dangers of pollution will be conducted as a way of mobilizing stakeholders to participate in HCWM.
- In order to advocate for and promote the use of environmental friendly options for treatment and disposal of HCW, MOH **through NMS** will regularly, retrieve and destroy waste that **MUST** not be destroyed by the health facilities; such waste include radioactive materials, pharmaceutical waste and waste that contain heavy metals such as mercury and lead. Another activity will be conducting research into environmental friendly disposal options that are affordable in Uganda. Recommended incinerators will be constructed and autoclaves for treating waste will be provided at selected facilities.
- To ensure maximum use of available options for treatment and disposal of HCW, all health workers will be sensitized on effective use of existing treatment and final disposal units. Guidelines for operationalising existing incinerators with the view of sharing (Mulago and Butabika incinerators) and a tool for monitoring implementation of waste minimization will be developed.
- Promotion of segregation of waste including plastics and glass will be conducted through sensitizing health workers on segregation of waste. Plastics and glass will be given special attention because of the hazards involved in treating and disposing them. The health unit managers will be linked to manufacturers or managers of recycling firms to streamline the process of segregation and handling of plastics. Containers for temporary storage of HCW and plastics will be provided.

PART 3: NATIONAL ACTION PLAN

NATIONAL HCWM ACTION PLAN

The Government of Uganda in consultation with the key stakeholders developed a National Health Care Waste Management Action Plan to improve the management of health care waste in the country. The plan was developed within the framework of the National Health Sector Strategic Plan (HSSP II) which covers a five year period from 2005/06 – 2009/10. Since the implementation of HSSP II is remaining with only two and half years, the National Health Care Waste Management Action Plan will also cater for two and half years hence covering the period 2007/08 to 2009/10.

The plan was developed along the following six strategic objectives:

1. Develop the legal and regulatory framework for Health Care Waste Management
2. Rationalize the Health Care Waste Management practices within health care facilities
3. Launch capacity building and training measures
4. Develop specific financial resources dedicated to Health Care Waste Management
5. Set-up a monitoring plan for Health Care Waste Management
6. Reduce the pollution associated with Health Care Waste Management

The health sector is conducting the Mid Term Review of the implementation of the HSSP II. The development of the National Health Care Waste Management Plan has therefore happened at a very opportune time of the HSSP II implementation. The recommendations of the Assessment of the Health Care Waste Management and the National Plan for improving Health Care Waste Management has the opportunity of being incorporated in the Mid Term Review report and become an addendum to HSSP II.

All levels of the National Health System, from the health care facility to Ministry of Health Headquarters, will develop Annual Work-plans for Health Care Waste Management as part of the Integrated Annual Work-plans for each level. Health Care Waste Management will therefore be planned for as an integral part of the annual planning process for every level of the National Health System. The health sector will revise the Planning Guidelines for both the centre and districts, to cater for Health Care Waste Management.

NATIONAL HEALTH CARE WASTE MANAGEMENT ACTION PLAN – 2009/10 – 2011/12

No.	Description of Activities	Indicators	Responsibility Centre	Budget (UShs. '000)	Source
	<i>Objective 1: Develop the legal and regulatory framework for HCWM</i>				
1.1	Strengthen the legal and regulatory framework for HCWM				
1.2	Formulate subsidiary legislation on Health Care Waste Management	Regulation on HCWM	MoH	102,000,000	GoU
1.3	Review planning guidelines for HCFs to cater for HCWM	Reviewed planning guidelines and work plans of HCFs reflecting HCWM	MoH, LGs, Heads of major institutions	30,000,000	GoU
1.4	Strengthen the enforcement mechanisms through:				
	a). Improve advocacy for accrediting health facilities by putting in place current protocols for inspection	HCWM incorporated in the supervision tools. Number of supervision visits conducted	MoH, NEMA, NDA, LGs	15,000,000	GoU
	b) Advocacy among law enforcement agencies to raise awareness on the dangers of unsafe health care waste management	Proportion of law enforcement agencies aware of unsafe HCWM		135,000,000	
1.5	Develop standards on prohibiting pollution and illegal traffic of hazardous waste in regard to HCWM	Standards developed and disseminated	MoH and NEMA	15,000,000	GoU

1.6	Develop guidelines/strategies for strengthening private sector involvement in HCWM.	Availability of Guidelines or strategies and Number of private institutions involved in HCWM	MoH	15,000,000	GoU/USAID
1.7	Review and update the National Policies and National Guidelines on HCWM	Existing policies and guidelines reviewed, updated, and disseminated	MoH with stake holders	60,000,000	GoU
1.8	Formulate and disseminate a National strategy for HCWM	National strategy formulated and disseminated	MOH 15,000,000		GoU/USAID
1.9	Reinforce internal rules in health institutions to comply with the HCWM plans	Number of Standard operating procedures available in health institutions Number of H/U following recommended procedures.	DHMT and Heads of Health Institutions	100,000,000	GoU
1.10	Establish an Expert Committee on Health Care Waste Management which will from time to time participate in international scientific meetings.	No. of technical advisors available in the country. No. of international events attended (target is 3 events annually).	MoH	81,000,000	
	Objective 2: Rationalize the Health Care Waste Management practices within Health Care Facilities				
2.1	Develop and disseminate HCWM guidelines, standards, policies	Availability of guidelines, standards, policy at user level. No. staff using the guidelines	MoH	344,000,000	GoU/USAID/WHO

2.2	Procure and distribute health care waste management equipment & supplies, eg; protective gear, bins, bin liners, safety boxes, paraffin, disinfectants, autoclaves	Availability of supplies & equipment.	MoH/LGs	20,388,836,000	GoU
2.3	Development of treatment and final disposal methods (incinerators and other environmentally friendly options):	Availability of functional incinerators + pits in defined areas	MoH/LGs	3,151,000,000	GoU/USAID/WHO
	a). Construction of incinerators			4,783,500,000	
	b). Conduct regular operational research to inform service providers on the best practices while identifying risks.	No. and types of research conducted.	MOH/Partners/health workers.	30,000,000	
	c). Advocacy among key stakeholders and partners			135,000,000	
2.4	Develop health unit / Hospital HCWM plan (including formation of HCWM committees)	Work plans available	LGs	430,000,000	GoU
2.5	Design HCWM safety procedures for waste handlers in hospitals to be included in tender bid documents	tender bid documents reflecting HCWM safety procedures for waste handlers	MoH/Hi/MMIS	15,000,000	GoU/USAID WHO
2.6	Provide for transportation facilities on-site & off site of HCWM eg; Carts, vehicles	Transport facilities in place	MoH/LGs	1,379,100,000	GoU/USAID/WHO
2.7	Provision of adequate storage for the health unit / hospital (including designing appropriate architectural plans)	Storage space created in institutions	MoH/HID	411,000,000	GoU
	Objective 3: Launch capacity-building and training measures				
	<i>3.1 Equip health care managers and providers with competences to appropriately manage HCW</i>				

3.1.1	Carry out training needs assessment	Report	MoH/HRD/MMIS	647,400,000	MoH/WHO/USAID
3.1.2	Review/adopt existing training materials in HCWM	Current training materials available	MoH/HRD/MMIS	30,000,000	MoH/USAID
3.1.3	Develop training materials (curriculum, modules and job aids)	Training materials available	MoH/HRD/MMIS	60,000,000	MoH/USAID
3.1.4	Develop guide for induction courses for all new staff	Induction guide available	MoH/MMIS	20,000,000	MoH
3.1.5	Conduct ToT at national level	Number of trainers/report	MoH/MMIS	32,000,000	MoH/WHO/USAID
3.1.6	Conduct ToT at district level	Number of trainers/report	MoH/MMIS and national trainers	103,200,000	MoH/WHO/USAID/LGs
3.1.7	Conduct training in HCWM for all health workers, waste care handlers and tenderers at health facility level	Number of h/w trained/report	DLGs	194,220,000	MoH/WHO/USAID/LGs

	<i>3.2: Mobilise all stakeholders to support HCWM interventions at all levels</i>				
3.2.1	Develop Communication Strategy for HCWM	Communication strategy in place	MoH/HP&E/MMIS	15,000,000	MoH/WHO/USAID
3.2.2	Develop, review or update IEC materials	Report /Draft IEC materials	“	20,000,000	MoH/WHO/USAID
3.2.3	Print IEC materials	Printed IEC material available64,740,000	“		MoH/WHO/USAID
3.2.4	Disseminate and distribute IEC materials	IEC materials in use at all levels	MoH/DHOs	Integrated with other activities	MoH/WHO/USAID/LGs

3.2.5	Sensitization of community & HUMCs on HCWM	Proportion of population sensitized	MoH/LGs	2,000,000,000	GoU/USAID/WHO
3.2.6	Carry out advocacy and sensitization for policy regulators and decision makers (Parliamentary Committees, Professional Councils/Associations, District Councils, Sub-county Local Councils, health providers and community)	Report on advocacy and sensitisation meetings No. of opinion leaders advocating for HCWM.	MoH/HP&E, MS, DHO	86,000,000	MoH/WHO USAID/LGs
	3.3: Ensure regular and effective support supervision for HCWM				
3.3.1	Review and adopt supervision tools/checklist	Tools available	MoH/MMIS	9,000,000	GoU/USAID/WHO
3.3.2	Conduct regular support supervision	Report/no. of H/u supervised.	MoH/MS/DHOs	2,150,000,000	GoU
3.3.3	Establish HCWM/Infection Control Committees at every health facility	Proportion of health facilities with functional HCWM/Infection Control Committees	MS/DHO/HSDs	3,237,000	GoU
3.3.4	Review terms of reference for HCWM/Infection Control Committees with the view of incorporating HCWM	Reviewed ToRs for HCWM/Infection Control Committee	MoH – ICS and QA	15,000,000	
	Objective 4: Mobilise financial resources for Health Care Waste Management				
4.1	Incorporate HCWM recommendations and work-plan in the MTR report for HSSP II implementation.	HCWM incorporated in the MTR report and adopted as addendum for HSSP II	MOH-Clinical services.	5,500,000	GoU
4.2	Make appropriate adjustments in Annual work-plans to incorporate priority HCWM actions at all levels.	Work-plans for FY 07/08 reflecting HCWM	MoH/DHOs/HCF in-charges and management teams.	10,000,000	GoU

4.3	Incorporate HCWM into annual work-plans for all levels.	Annual works reflecting HCWM at all levels.	Heads of departments-MOH and DHTs	464,400,000	GoU
4.4	Develop and submit terms of reference to cater for HCWM for appropriate working groups in the MOH.	Terms of reference developed and submitted.	MoH-HCWM working group.	1,600,000	GoU
4.5	Create awareness among stakeholders on the need to support HCWM at all levels (centre, district and sub-county levels)	Report of the awareness meeting.	MoH (ICS & HPD) DHOs	516,000,000	GoU/USAID/WHO
4.6	Incorporate HCWM commodities and equipment into existing credit lines and other funding mechanisms.	HCWM commodities incorporated into credit lines and funding mechanisms.	MoH- Pharmacy	2,000,000	GoU/USAID/WHO
	Objective 5: Set-up a monitoring plan for Health Care Waste Management				
5.1	Update existing standards for practicing and specifications of commodities for HCWM to make them comprehensive	Updated standards available Specifications for HCWM commodities available.	MoH/Clinical Services.	48,000,000	GoU/USAID/WHO
5.2	Develop tools for monitoring HCWM	Availability of monitoring tools	MoH	12,000,000	GoU/USAID/WHO
5.3	Communicate to DHOs to establish HCWM/Infection Control Committees and assign focal persons for HCWM at every health facility.	Communication to DHOs Focal persons available at every health facility level.	MoH/DGHS	Intergrated with other activities.	GoU

5.4	Establish HCWM/Infection Control Committees and assign focal persons for HCWM at every health facility	HCWM/IC Committees in place Focal persons available	MS and DHO	Intergrated with other activities	GoU
5.5	Training of supervisors at all levels in HCWM	No of supervisors trained		9,711,000	GoU/USAID/WHO
5.6	Conduct support supervision including on HCWM	Reports on supervision/No. of health units supervised.	MoH, Districts & HCF	323,700,000	GoU
5.7	Review of HMIS to include indicators on HCWM (e.g. Proportion of Health facilities with safe methods of waste disposal and Proportion of health facilities able to segregate waste)	Reviewed HMIS and HCWM indicators incorporated.	MoH	2,000,000	GoU/USAID
	Objective 6: Reduce the pollution associated with Health Care Waste Management				
6.1	Promote segregation of plastics and glass:				
	a). Sensitize Health workers on segregation of plastics and glass	No. of health workers sensitized and No. of H/U implementing targeted segregation.	DHO and H/U In-Charge	647,400,000	GoU/USAID/WHO
	b). Link health managers with manufacturers of recycling firms	Proportion of health managers supplying medical waste plastics for recycling	MoH/MMIS/DHO	6,000,000	
	c). Provide containers for temporary storage	Availability of containers for temporary storage	HU in-charges	525,000,000	

6.2	Hold Quarterly Review Meetings to discuss environmental concerns of HCWM at all levels	Number of review meetings held, report of meetings	HSDs in-charges, DHOS	275,200,000	GoU
6.3	Regular retrieval and destruction of wastes that MUST not be destroyed at health facilities (eg. Radioactive materials, pharmaceuticals, heavy metals – Hg)		MoH	172,000,000	
6.4	Develop, implement and monitor waste minimization strategies	Strategies in place and reports	DMO	154,800,000	GoU/USAID/WHO
6.5	Continuous sensitization of communities on the dangers of pollution	Proportion of population aware of dangers of pollution	MoH/LGs, partners	60,000,000	GoU/USAID/WHO
6.6	Promote the use environmentally friendly options of treatment and disposal of HCWM:				GoU/USAID/WHO
	a). Conduct research into environmentally friendly final disposal options that are affordable by Uganda.	Report with recommended actions .	MOH/Development partners.	50,000,000	
	b). Advocacy for environmentally friendly options for treatment and disposal of health care waste	Proportion of health facilities with environmentally friendly options	MoH and DPs	27,000,000	GoU/USAID/WHO
	c). Construct recommended incinerators at selected facilities e.g. auto clove	No. of H/U with approved incinerators or technologies	MoH - HID Partners	1,080,000,000	GoU/USAID/WHO

6.7	Sensitise health workers on effective use of existing treatment and final disposal units	Number of health workers sensitized, proportion of health facilities where existing final disposal/treatment units are being effectively used	DHO	Intergrated with other activities	GoU/USAID/WHO
6.8	Develop strategies for operationalizing existing incinerators with the view of sharing the incinerators e.g. Mulago and Butabika incinerators	Private operator running the incinerator	MoH/Hospital Mgt Boards	20,000,000	GoU