

**CODE OF PRACTICE
FOR THE
HEALTH CARE
WASTE MANAGEMENT
AT
LERATONG HOSPITAL**



Table of contents

1.	Introduction	1
1.1	Objectives of the Code of Practice	1
1.2	Limitations of the Code of Practice	1
2.	Waste Definitions	1
2.1	Standard Definitions for Health Care Waste (HCW)	1
2.2	Health Care Risk Waste (HCRW)	2
2.3	Health Care General Waste (HCGW)	3
2.4	Impact of Health Care Waste on Health	4
3.	Health Care Waste Management (HCWM) System	6
3.1	Main Principles of HCWM	6
3.2	Overview of the Two Systems	7
3.3	Colour Coding and Labelling	8
3.4	Identification and Labelling	8
3.5	Intermediate Storage Areas for Waste	9
3.6	Central Storage Area	9
3.7	Transportation	9
3.8	Treatment	9
3.9	Equipment: Wheelie bin/liner and Stackable Box systems	10
4.	Health Care Waste Management Organisation, Training and Reporting	12
4.1	Legislation and Health Care Waste Management	12
4.2	Organisational Structure for Health Care Waste Management	12
4.3	Roles and Responsibilities for General Assistants, Nurses and other staff categories	14
4.4	Coaching and Training	15
4.5	Supervision and Enforcement	15
4.6	Incident and Accident Reporting	15
5.	Health Care Waste Management Procedures	17
5.1	Segregation at source	17
5.2	Handling of health care risk waste	19
5.3	Handling of Sharps	21
5.4	Manual handling of waste	22
5.5	Closing of containers	22
5.6	Closing of liners	23
5.7	Collecting the waste from source containers	23
5.8	Cleaning the containers	24
5.9	Replacing the liners	24
5.10	Storing at intermediate storage area	25
5.11	Internal transportation of waste	25
5.12	Collection routines	26
5.13	Storing at central storage area	27
5.14	Weighing of waste and record keeping	27
5.15	External transportation of waste	27
5.16	Emergency procedures	28
5.17	Ordering of waste equipment	29
Appendix A	Types of Containers and Usage	30
Appendix B	Specifications and Sizes of Equipment	32

1. Introduction

1.1 Objectives of the Code of Practice

The disposal of waste originating from health care institutions can have an effect on the health and well being of staff of the institution, patients, visitors and the general public if not properly managed. The environment is also adversely affected by the indiscriminate disposal of health care risk waste.

The Code of Practice (CoP) for Health Care Waste Management at Leratong Hospital is a set of general instructions for how to handle all solid and liquid wastes arising from activities taking place within the premises of Leratong Hospital. Hence, the CoP covers all parts of the Hospital including, where applicable, the outsourced services such as the Blood Bank and the Laboratory.

The Code of Practice describes the principles for management of Health Care Waste (HCW), defines the different types of waste categories and describes the different handling procedures. In this respect, the Code of Practice shall therefore be regarded as the internal by-law for Health Care Waste Management.

A complete and updated version of the full Code of Practice, including annexes must always be found at the Leratong Hospital management office and must be available to all senior management, nursing, medical and cleaning staff and be accessible to all staff via their superiors.

1.2 Limitations of the Code of Practice

Although this Code of Practice does cover some aspects of Health Care General Waste, the main focus is on the Health Care Risk Waste. The emphasis is on good segregation and in order to achieve this, aspects relevant to the general waste stream must be considered. This code does not cover garden refuse, demolition or building rubble or other general litter found in and around the premises.

Radioactive wastes are not found at Leratong Hospital and are therefore outside the scope of this Code of Practice.

Where required, separate policies and procedures must be prepared for departments with special needs, such as laboratories, blood banks, gynaecology and obstetric departments, ionisation and radiation units (e.g. oncology), however following the overall guidelines laid down in this Code of Practice.

2. Waste Definitions

2.1 Standard Definitions for Health Care Waste (HCW)

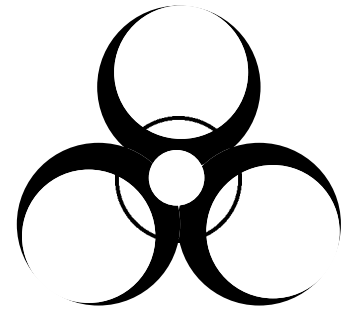
Health Care includes any medical activities such as diagnosis, monitoring, treatment, prevention of diseases or alleviation of handicaps, in human or animals, including research performed under supervision of medical, dental or veterinary practitioner.

Health Care Waste is defined as the total waste stream from health care. Health care waste includes health care risk waste and health care general waste.

2.2 Health Care Risk Waste (HCRW)

Health care risk waste is broken into the following components:

- Infectious Waste
- Infectious Liquid Waste
- Sharps
- Anatomical (pathological) Waste
- Hazardous Chemical and Pharmaceutical Waste.



Infectious Waste:

This category forms the largest component of health care risk waste generated in the hospital and consists of discarded materials arising out of activities on humans that have the potential of transmitting infectious agents to humans. These include:

- Discarded materials or equipment from the diagnosis treatment and prevention of disease that have been in contact with body fluids
- Wastes from infection and isolation wards such as cultures, stocks, tissues, dressings, excreta, swabs or other items soaked with blood
- Nappies, blood bags
- Incontinence material
- Waste that has been in contact with infected patients undergoing haemodialysis (e.g. dialysis equipment such as tubing and filters, disposable towels, gowns, aprons and gloves)
- Any other utensils and materials having been in contact with infected persons and animals.

Infectious Liquid Waste:

This category includes faeces, urine, blood or other body secretions (such as sputum or lung secretions) from infected patients in isolation or ICU.

Sharps:

All sharps such as syringe needles, scalpels, infusion sets, knives, blades and broken glass should be treated as sharps whether contaminated with infectious material or not.

Anatomical Waste:

All recognisable body parts, organs, and body tissue such as placentas, non-viable foetuses, amputations etc. fall into this category and are treated as infectious.

Hazardous Chemical and Pharmaceutical Waste:

All discarded solid, liquid and gaseous chemicals, for example from diagnostic and experimental work, and cleaning, housekeeping and disinfecting procedures.

Examples of chemical used include formaldehyde, gluteraldehyde, organic compounds in disinfectants, oils and pesticides and inorganic compounds in acids caustic and ammonia solutions. All expired, unused, spilled and contaminated pharmaceutical products, drugs and vaccines. All sera and bottles, boxes and vials used to contain pharmaceuticals, which are no longer required.

A sub-category of pharmaceutical waste is “genotoxic waste” (also known as anti-neoplastic drugs) which is potentially highly hazardous if not carefully handled. Genotoxic waste includes primarily cytotoxic drugs.

2.3 Health Care General Waste (HCGW)

Waste can only be considered general if it contains no products or potential properties that are known to have either a reactive or toxic effect, either to humans or the environment. It is generated during the administrative and housekeeping functions of the hospital and include food preparation, cleaning and sweeping, repair and replacement, clerical and office services, packaging, cardboard, damaged containers, discarded flowers, bags, tins, wrappings and plastics. Approximately 60% of the waste generated at Leratong is general waste.

Segregation of materials that can be reused or recycled will greatly reduce the impact burden of the general waste stream.



Teaching poster: *How to segregate waste correctly*

2.4 Impact of Health Care Waste on Health

Health care waste includes a large component of general waste and a smaller proportion of risk waste. General health care waste is similar to municipal waste or household waste and does not create more health or other hazards than mismanaged municipal waste. However mismanaged health care risk waste has many potential hazards associated with it. If the health care risk waste is not properly segregated from other waste fractions the whole mixture has to be handled as infectious waste.

2.4.1 Types of Hazards

The hazardous nature of the pathogens found in body fluids are summarised in the table below.

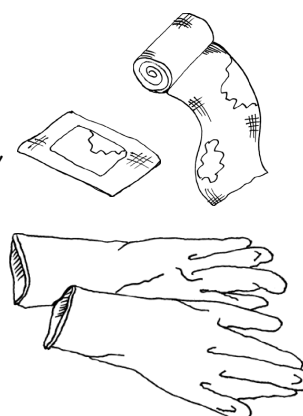
Pathogens found in body fluids	Types of infection
<p>Blood Straphylococcus (sp) Human immunodeficiency virus (HIV)</p> <p>Straphylococcus aureus, Enterobacter, Enterococcus, Klebriella, Streptococcus sp</p> <p>Candida albicans Hepatitis B and C viruses</p> <p>Junin, Lassa, Ebola and Marburg</p>	<p>Septicaemia Acquired immunodeficiency syndrome (AIDS)</p> <p>Bacteraemia</p> <p>Candidaemia Viral hepatitis B and C</p> <p>Haemorrhagic fevers</p>
<p>Faeces and/or vomit Salmonella, Shigella sp, Vibro cholerae helminths Hepatitis A virus (faeces only)</p>	<p>Gastroenteric infections</p> <p>Viral hepatitis A</p>
<p>Saliva Mycobacterius tuberculosis, measles virus, streptococcus pneumoniae</p>	<p>Respiratory infections</p>
<p>Pus Streptococcus sp.</p>	<p>Skin infections</p>

Reference:

Hazards from infectious waste

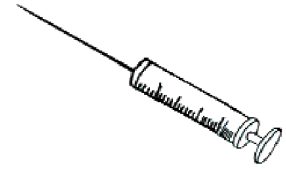
Infectious waste may contain a great variety of pathogenic micro-organisms, that may infect the human body through the following pathways:

- absorption through a crack or cut in the skin (injection);
- absorption through the mucous membranes; and rarely by
- inhalation and
- ingestion.



Hazards from sharps

Sharps may not only cause cuts and punctures, but also infect the wounds by agents that previously contaminated the sharps. Due to this double risk of injury and disease transmission, sharps are considered as a high risk. The main diseases of concern are infections that may be transmitted by subcutaneous introduction of the agent, e.g. viral blood infections.



Hazards from chemical and pharmaceutical waste

Many chemicals and pharmaceuticals that are used in health care establishments contain toxic, corrosive, flammable, reactive, explosive, shock sensitive, cyto- or genotoxic properties. They may cause toxic effects, either by acute or by chronic exposure, and injuries, including burns. Intoxications can result from absorption of the chemicals/pharmaceuticals through the skin, the mucous membranes, from inhalation or ingestion. Injuries can be provoked by contact of flammable, corrosive or re-active chemicals with the skin, the eyes or the mucous membrane of the lung (e.g. formaldehyde and other volatile chemicals). The most common injuries are burns.

Mercury constitutes another hazardous issue within hospitals due to its prevalent use literally hundreds of different devices most concentrated in diagnostic devices such as thermometers, blood pressure meters, oesophageal dilators, Miller Abbott/Cantor tubes. It is also found in more mercury sources such as fluorescent light tubes and batteries.

Disinfectants constitute a particularly important group, as they are used in large quantities and are often corrosive. It should also be noted that reactive chemicals may form secondary compounds of high toxicity.

Chemical residues discharged into the sewage system may have toxic effects on the operation of biological sewage treatment plants or on the natural ecosystems of receiving waters. Pharmaceutical residues may have the same effects, as they may include antibiotics and other drugs, heavy metals such as mercury, phenols and derivatives and other disinfectants and antiseptics.

Hazards from cytotoxic waste

The severity of health hazards for health care workers handling cytotoxic waste is the combined effect of the substance toxicity and of the magnitude of exposure, which may occur during waste handling or disposal. Exposure to cytotoxic substances in health care may also occur during preparation for treatment. The main pathways of exposure are inhalation of dust or aerosols, skin absorption, and ingestion of food accidentally in contact with cytotoxic (antineoplastic) drugs, chemicals or waste, or from contact with chemotherapy patient's secretions.

2.4.2 Persons at Risk

All persons exposed to Health Care Risk Waste are potentially at risk of contamination through accidental exposure. The main groups at risk are the following:

- Nurses, and assistant nurses
- General assistants
- Allied workers
- Doctors
- Public
- Patients
- Management
- Mortuary workers
- Municipal workers.

Incorrectly segregated health care risk waste that is put into the general waste stream will be taken to the landfill site. Scavengers at the landfill site are then exposed to health care risk waste. Waste collection contractors or service providers and treatment plant operators are also vulnerable to accidental exposure.

3. Health Care Waste Management (HCWM) System

3.1 Main Principles of HCWM

The main principles of waste handling are as follows:

- *All waste generated must be sorted and disposed of as close to the source (point of generation) as possible*
- *The waste generated must in principle be touched only by the person generating the waste.*

The guidelines for waste handling are as follows:

- **Segregation** at the source by the generator of the waste
- **Intermediate storage** for temporary storage of waste within the units
- **Internal transportation** of each waste category of waste between intermediate storage rooms to the central storage room
- **Central storage** of waste awaiting collection by the service provider
- **External transportation** of waste to the treatment plant
- **Treatment** of all HCRW
- **Landfilling** of all residue from the treatment plant (ash or shredded waste) and the disposal of HCGW, other domestic waste.

Segregation at generation is critical to the success of both the systems. The HCR waste is segregated according to the categories of:

1. sharps
2. infectious waste
3. anatomical waste
4. expired medication.

3.2 Overview of the Two Systems

The test sites for Leratong hospital will have approximately 50% of the hospital on the 770 wheelie bin/liner system and the other 50% on the stackable box system.

The two systems to test have a combination of reusable containers and liners that is both economical and flexible. Red liners of different sizes, microns are used in a selection of standardised containers, baskets and stands.

Environmentally friendly re-usable standardised containers, baskets and stands are positioned as close as possible to the generation of the waste.

Disposable containers made of the more environmentally friendly polypropylene or polyethylene plastic will be used for the disposal of sharps. The same sharps container will be used in both systems.

Glass vials will be collected in specicans and taken for recycling.

The anatomical waste will be contained in polyethylene containers (specicans) and stored separately in the Mortuary or in small refrigeration units placed in theatre, maternity and casualty. These will be individually labelled, transported and disposed of separately.

All intermediate storage areas in the places using the 770 wheelie bin system will be equipped with 110 litre liners supported by custom-built stands for the disposal of infectious waste. The smaller liners in baskets at the points of generation, when full, will be securely closed using a rubber band and placed inside the larger containers. When 3/4's full, the larger liners in turn will be securely fastened using rubber bands, and placed inside the 770 wheelie bin for transportation to the central storage area.

All intermediate storage areas in the areas using the stackable box system will be equipped with a 50 or 100 litre red box. The liner used in the 25 litre box on the nursing trolley or positioned in a bracket on the wall will be tied with an rubber band and placed inside the 50 or 100 litre box in the storage area. When the larger boxes are full, they will be closed and replaced with another container. The stackable boxes will be collected in a custom built trolley and transported to the central storage area.

This trolley will contain a maximum of 8 x 100 litre boxes and will be secured.

The sharps containers and speci-cans used for the disposal of vials and bottles will be placed inside the 770 wheelie bin or the 100 litre stackable boxes for transportation to the central storage area. Alternatively the specicans for the disposal of glass vials will be taken for recycling.

The Central Storage Area will house the full 770 wheelie bin and trolleys with stackable boxes to await transport off the site.

All items to be removed are counted and weighed and the numbers and weights to be recorded on a day-sheet for the purpose of verifying invoicing and monitoring trends in the waste generation and waste segregation.

The Service Provider using a custom-built transportation truck with a mechanism for loading the bins and stackable boxes will transport the waste to the treatment plants. The full bins and stackable boxes, when removed, will be replaced with cleaned and sanitised bins ready for deployment back into the hospital.

3.3 Colour Coding and Labelling

The colour coding for both systems will be:

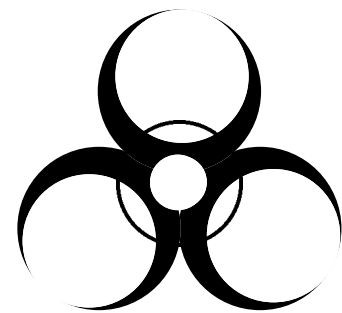
- **Red** for health care risk waste
- **Black** for general waste.

Wherever possible, these colours will be used on the containers but in most instances it is the coloured liner that will distinguish the different categories.

3.4 Identification and Labelling

The wheelie bins, trolleys and stackable boxes will be individually labelled with the internationally recognized sign for infectious waste and numbered.

Each 770 Wheelie bin and custom-built cage trolley will be uniquely numbered with an aluminium plaque. Wheelie bins will be prefixed with WB.. and the Trolleys with CT..



International sign for biohazardous waste



Wheelie bin plaque

Each Stackable Box will have a unique number pressed into the side of the container using heated number dies. The numbering will be 100/001 for the 100 litre boxes and 50/001 for the 50 litre boxes. In addition, each box will have the following label:



Stackable box label

Specicans used for glass vials must be marked with a sticker for recycling.

3.5 Intermediate Storage Areas for Waste

The intermediate storage areas are used to temporarily store the waste before transportation to the central storage area. Easy access to the area for the ward or unit staff is provided. A dedicated area is preferable. Where this is not possible, an area will be made available in the sluice rooms.

The intermediate storage area must be well ventilated, well illuminated and easy to clean. Access to the area by the internal transportation medium is essential to prevent manual handling of the equipment.

Waste should not be allowed to accumulate in the ward areas and a routine programme will be devised for the regular collection and storage in the intermediate storage area.

3.6 Central Storage Area

The Central Storage Area is where the waste is stored for collection by the external service provider. This is a large brick building that can contain the anticipated number of 770 wheelie bins and stackable boxes. A daily collection during the week is preferred. There should be sufficient space available to accommodate a weekend accumulation. The area is presently accessed by a ramp. Security arrangements must be such that unauthorised entry is prohibited. Anatomical waste will be stored in the mortuary in the specicans until collection by the service provider.

3.7 Transportation

Internal Transport:

There are different transportation methods for the two systems.

Stackable Boxes: A custom built nesting wire caged trolley of approximately 1 metre x 2 metres and able to contain 8 x 100 litre stackable boxes is used.

Wheelie bin/liner System: 770 wheelie bin used for the storage of the sealed waste liners is used for the internal transportation of the waste from the intermediate storage areas to the central storage area.

External Transport:

Both the nesting wire cages containing the stackable boxes and the 770 wheelie bins are taken off the site. The external service provider will collect the waste with a truck that has a mechanical tail gate.

3.8 Treatment

Treatment for health care risk waste will be off-site at an incinerator.

3.9 Equipment: Wheelie bin/liner and Stackable Box systems

The table below shows a comparison of the two systems against the main system elements.

KEY COMPONENTS	770 Wheelie bin/liner System	Stackable Box System
Sharps containerisation	<i>A rectangular plastic sharps container, supported in brackets, with a horizontal loader</i>	
Containerisation vials and glass bottles	<i>A 10 litre cylindrical plastic specican with a firmly fitting lid</i>	
Containerisation of long sharps	<i>A 70 cm tall cylindrical plastic container with a vertical loader</i>	
Containerisation of specimens, placentas and other anatomical waste	<i>Human tissue (placentas etc.) will be contained in a 10 litre cylindrical plastic specican with a firmly fitting lid Larger anatomical waste will be double bagged in a plastic liner and placed inside the wheelie bin for removal</i>	<i>Human tissue (placentas etc.) will be contained in a 10 litre cylindrical plastic specican with a firmly fitting lid Larger anatomical waste will be placed into a dedicated 50 or 100 litre container, labelled and removed separately</i>
Containerisation of general infectious waste at the point of generation	<i>12 litre pedal bins, kick-about trolleys Nursing trolley 30 litre baskets and small 30 litre wall baskets with fitted red liners of varying micron thicknesses (50-60 micron)</i>	<i>12 litre pedal bins, kick-about trolleys Nursing trolley 30 litre bin on a bracket and 30 litre wall-mounted bins, fitted red liners of 50 micron</i>
Containerisation of health care general waste at the point of generation	<i>Pedal bins and small 30 litre wall-mounted baskets fitted with black liners of 30 micron</i>	
Containerisation of general infectious waste at Intermediate Storage Areas	<i>110 litre stands fitted with red liners of 80 micron</i>	<i>50 or 110 litre plastic boxes fitted with red liners of 50 micron</i>
Containerisation of health care general waste at Intermediate Storage Areas	<i>110 galvanised stand or 110 litre black bin with fitted black liner of 30 micron</i>	
Collection from the point of generation	<i>Liners from smaller containers to be closed with rubber bands and placed into larger bins in the intermediate storage area of corresponding colour (red or black) Larger liners when full are closed with rubber bands</i>	<i>Red liners from the 30 litre boxes, kick-about trolleys and pedal bins to be placed into either 50 or 100 litre boxes Full boxes are closed with a lid Black liners are closed with rubber bands and placed into larger liners on stands and placed into larger liners on stands or into black bins</i>

KEY COMPONENTS	770 Wheelie bin/liner System	Stackable Box System
Internal transportation of HCRW to Central Storage Area	<p><i>Full and sealed large red liners from wall-mounted racks to be collected in 770 litre wheelie bins</i></p> <p><i>Full wheelie bins to be locked and transported to central storage area</i></p> <p><i>Sharps containers and specicans with vials and bottles to be placed inside the wheelie bins for transportation off-site</i></p>	<p><i>Full and sealed 50 or 100 litre stackable boxes to be collected in custom-built trolley (8 x 100 litre capacity)</i></p> <p><i>Trolley locked and transported to the central storage area ready for transportation off-site</i></p> <p><i>Sharps containers and specicans with vials and bottles to be placed inside the 50 or 100 litre boxes for transportation off-site</i></p>
Internal transportation of HCGW to Central Storage Area	<i>Sealed black liners transported in a 660 wheelie bin to the central storage area for transfer into the skip</i>	
Final receptacle at Central Storage Area awaiting off-site transportation	<p><i>All HCRW to be placed in 770 wheelie bins, including closed sharps containers and specicans with vials and bottles</i></p> <p><i>All HCGW to be placed into the skip supplied by the local municipality and transported to a landfill site</i></p>	<p><i>All HCRW to be placed into 50 and 100 litre stackable boxes, including closed sharps containers and specicans with vials and bottles</i></p> <p><i>Boxes stacked into lockable custom-built trolley</i></p> <p><i>All HCGW to be placed into the skip supplied by the local municipality and transported to a landfill site</i></p>
Waste Storage Building	<i>Large building for the storage of both 770 wheelie bins and secured custom-built trolleys</i> <i>Area to be regularly treated for vermin and vectors</i>	
Sealing of containers for HCRW transported off-site	<i>Wheelie bins are sealed using cable tires or similar through a hole drilled through the lid and the main body of the bin</i>	<i>Trolleys to be secured</i>
Collection vehicle for HCRW	<i>Truck to be fitted with mechanical lifting tail gate (supplied by the project)</i> <i>Wheelie bins and trolleys are wheeled onto the lifting tail gate, after lifting the tail gate, they are wheeled into the truck where they are fastened</i>	
Treatment plant for HCRW	<i>The treatment method is incineration</i>	
Washing and returning of emptied wheelie bins	<p><i>The treatment service provider to wash the bins and trolleys for recirculation</i></p> <p><i>The transport service provider to collect cleaned wheelie bins and trolleys and return them to the pilot institutions for subsequent filling</i></p>	

4. Health Care Waste Management Organisation, Training and Reporting

4.1 Legislation and Health Care Waste Management

The Occupational Health and Safety (OHS) Act No 85 of 1993 and regulations are in place to provide for the health and safety of persons at work, as well as for the protection of other persons who may be affected by the hazards to health and safety arising out of the work activities. There is no specific reference to waste management but the Act does contain some important requirements that are related to waste management:

1. The CEO of the hospital is legally responsible for the health and safety of anyone who may be affected by the activities carried on inside the hospital.
2. Health and Safety Representatives are elected on behalf of the employees and attend health and safety committee meetings as representatives of the employees.
3. The CEO is required to establish an Occupational Health and safety committee when there are more than two health and safety representatives elected.
4. The CEO is required to identify all hazards (exposures to danger) in the workplace and provide procedures and standards to remove, reduce or protect the employees.
5. All injury incidents (accidents) are required to be reported to the Department of Labour and investigated. All other incidents (unsafe incidents) that could have resulted in an injury (accident) are also required to be reported in accordance with Section 24 of the OH&S Act.
6. There must also be a regular reporting of all incidents to the OH&S Committee and the CEO.

4.2 Organisational Structure for Health Care Waste Management

The key components of the organisational structure for health care waste management are:

- The CEO of the hospital
- The Health Care Waste Officer
- The Assistant Health Care Waste Officers
- Buying department
- Infection Control
- Cleaning Department
- The Occupational Health and Safety Committee
- Unit managers and Ward and Departmental Supervisors for all medical and non-medical support and other services
- Health Care Waste Management Task Team

The roles and responsibilities are as follows:

CEO hospital

The CEO has overall responsibility for ensuring effective waste management and legal responsibility for occupational health and safety at Leratong. All aspects of health care waste management are delegated to the appropriate line function. The Health Care Waste Officer may on occasion report directly to the CEO with regard to health care waste management. The OH&S committee reports on a monthly basis to the CEO on all serious matters to do with OH&S and including waste.

Health Care Waste Officer

The Health Care Waste Officer is the waste champion. His/her primary role is to facilitate the development and effective management of the health care waste system. He/she has no direct line responsibility for health care waste management. He/she reports regularly to the OH&S Committee and to the CEO as necessary.

Assistant Health Care Waste Officers

Leratong has two Assistant Health Care Waste Officers. The Assistants provide support to the Health Care Waste Officer. One Assistant is from medical staff and provides support in the medical departments and the other assistant is from the cleaning department.

Buying Department

It is the Buying Department's responsibility to ensure financial management of the service contract with the health care risk waste collector or service provider. The Buying Department must ensure correct billing.

Infection control

Infection control has always played a lead role at Leratong in health care waste management. The present Health Care Waste Officer is Sr. Mpela from infection control. Infection control will continue to advise on relevant matters with regard to infection control.

Cleaning Department

The cleaning department has major line responsibility for health care waste management. The detailed role of the general assistants is described in the section 4.3.

Occupational Health and Safety Committee

The OH&S committee is responsible for reporting accidents and unsafe incidents through the Health and Safety Representatives. All accidents must be investigated. A regular report must be sent from the OH&S committee to the CEO.

Unit Managers and Ward and Departmental Supervisors

All managers at Leratong are responsible for the activities in their departments and areas. This includes all activities related to waste and to promote correct waste segregation. Managers are also responsible for ensuring that their staff is informed about relevant waste management procedures.

Health Care Waste Management Task Team

The Health Care Waste Management Task Team will help facilitate all activities at Leratong related to the Health Care Waste Management Pilot Site. These activities will cease from June 2003 and the role of the task team will be incorporated into the Occupational Health and Safety Committee.

4.3 Roles and Responsibilities for General Assistants, Nurses and other staff categories

All staff categories

All medical and non-medical staff is responsible for correct segregation of waste at source.

General Assistants and ward helpers

The following waste duties apply to general assistants working in the wards and departments:

1. At scheduled times, collect all waste bags/liners at bedsides and waste containers in the ward, seal and place in container in intermediate storage area
2. Thoroughly clean all waste containers and stands when emptied
3. Replace all stands and containers with clean liners of the correct size and colour
4. At routine times or when 3/4's full, close and seal the liners or containers in the intermediate storage areas.
5. At routine times leave the sealed liners and containers ready for collection and transport to central storage area
6. Supply new containers and liners in the intermediate storage area
7. Close and seal the large black liners for transport to central storage area
8. Close and seal sharps containers when 3/4's full and place in the intermediate storage area
9. Put all sealed sharps containers in the red boxes
10. Replace sharps containers in the wards and departments
11. Keep the intermediate storage area (sluice room) clean at all times.

The following waste duties apply to general assistants involved with the internal transport of waste and at the central storage area:

1. At scheduled times collect all sealed red liners and sealed red boxes from intermediate storage areas or from designated site in the passage or corridor.
2. Put all sealed sharps containers in the wheelie bins
3. Seal/lock all filled wheelie bins and cage trolleys
4. Weigh and record waste in the wheelie bins and cage trolley at the central storage area
5. Place all health care risk waste in a locked area ready for collection by the service provider
6. Place all general waste in the skip ready for collection by the local authority
7. Keep the central storage area clean at all times.

Nursing staff

The following waste duties apply to all nursing categories other than nursing supervisors:

1. To seal and replace all liners and containers including sharps containers in the absence of general assistants.

Unit managers

1. To order sufficient equipment for unit and departments

4.4 Coaching and Training

The Health Care Waste Officer in collaboration with the service provider will ensure that all staff is trained about health care waste management. The following activities are part of the health care waste management training programme:

1. All supervisory staff will be trained and provided with a teaching package and the Leratong Code of Practice for Waste.
2. Supervisory staff will train their staff in the departments and wards using the teaching package
3. Skills posters will be used in key areas to reinforce good practice
4. Staff will be encouraged through training to skill each other and to encourage good practice
5. Senior hospital management will be introduced to elements of the waste management system through a separate presentation/s by the Health Care Waste Officer
6. PDD (Personnel Development Department) will use the teaching package to orientate health sciences' students.

4.5 Supervision and Enforcement

Area, unit and department heads and management are responsible for all activities and staff working in their areas. This includes all activities relating to waste. Therefore supervision for waste rests with the appropriate line and unit or department management.

Supervisors at Leratong are encouraged to recognise and reward good work in relation to waste. All staff perform better when they see that good work is often acknowledged.

In the event of poor performance by a staff member or negligence in relation to waste segregation or any other aspect waste management it is expected that supervisors will refer to the relevant hospital policy and procedure and institute the necessary disciplinary measures.

4.6 Incident and Accident Reporting

4.5.1 Reporting of incidents

The reporting of some incidents is a legal requirement. (See Occupational Health and Safety Act Section 24 and General Admin Regulation 8.) Incidents that result in an injury (accident) and incidents that either result in damage or no consequence (near miss/unsafe incidents) are reported and a cause analysis conducted so that remedial action can be taken to rectify the situation. A pink accident report form and a yellow unsafe incident report card are available in all units and departments. All persons have the responsibility to report accidents and unsafe incidents to their supervisor and/or Health and Safety Representative. Completed report cards must be sent to the Occupational Health and Safety Committee for review and recording.

4.5.2 Incidents involving human injuries

Any human injury must be immediately reported to the Supervisor.

- Immediate human injuries occur from pricks, tissue scratches, inhalation etc.
- If a superficial (minor) injury occurs First Aid may be applied.
- For significant (major) injuries a Doctor shall be consulted.
- In severe cases the injured person shall be brought to the casualty department for treatment.
- All major injuries requiring medical treatment and/or results in time off from work must be reported to the Compensation Commissioner in accordance with the requirements of the Compensation for Injuries and Diseases Act. A WCL1 or WCL2 form must be completed and submitted. These are available from the OH&S Committee.
- All injuries are reported to the infection control nurse and OH&S Committee.
- Needlestick Injuries must be handled in accordance with the Needlestick Policy.

4.5.3 Damaged packaging at departments or intermediate storage areas

- If packaging material (i.e. plastic liners or plastic containers) for waste is damaged within the department, repackaging shall be done immediately into a new liner or container.
- If sharps are spilled utmost precaution must be taken during unloading; heavy-duty nitrile gloves must be used during this process.
- If a big liner is damaged in the intermediate storage room reloading of all waste and the damaged plastic bag must be placed in a new liner.
- If a liquid container is damaged in the intermediate storage room, the liquid must be filled into an undamaged container.
- Damage to packaging material must be reported to the head of department and/or a health and safety representative and a yellow unsafe incident report form completed.

5. Health Care Waste Management Procedures

The procedures described below will apply to both systems. If specific requirements are necessary for either the wheelie bin/liner or the stackable box system, these will be indicated. The following procedures are guidelines only. Detailed requirements are contained in separate policy and procedure documents.

The procedures for each health care waste category are described under the following headings:

- Segregation at source
- Handling of health care risk waste
- Handling of sharps
- Manual handling of waste
- Closing of containers
- Closing of liners
- Collecting the waste from source containers
- Labelling of waste
- Cleaning the containers
- Replacing the liners
- Storing at intermediate storage area
- Internal transportation of waste
- Collection routines
- Storing at central storage area
- Weighing of waste and record keeping
- External transportation of waste
- Emergency procedures
- Ordering of waste equipment

5.1 Segregation at source

All segregation of HCRW must take place at source. This requires the placing of smaller, user-friendly containers as close as possible to the point of generation; for example on the nursing trolley, at the patient's bed or near the operating table.

The following is a list of correct segregation of health care waste at source:

Infectious waste

- Solid or moistened infectious waste must be placed in into red lined kick-about trolleys, pedal bins, nursing trolley baskets or wall mounted baskets.
- Liquid infectious waste, such as body fluids (excretions from congested lungs, sputum, faeces and urine, etc.) collected in ICU's or from highly infectious diseases such as TB and Ebola or from patients who may be undergoing treatment for cancer, (cytotoxic) should be placed in leak-tight specicans.

Sharps

- Syringe needles, scalpels, blades, IV lines etc. capable of pricking or injuring a person must be placed in small "sharps" containers that are supported on a bracket on the nursing trolley, or on the wall.
- All glass vials or bottles must be placed into a separate specican. (Plastic vials may be placed directly into a liner.)

Anatomical

- Small anatomical waste such as human tissue, small amputations, placentas etc. are placed inside specicans, sealed and taken to the mortuary.
- Large anatomical waste such as large amputations are doubled bagged in large red liners, closed, placed inside the large box and taken to the mortuary to await collection.
- Non-viable foetuses are placed into red bags or the specican and taken to mortuary to await collection.

Expired medications

- Expired medications are returned to the pharmacy where it taken out of stock, placed into specicans, sealed and returned to the supplier.
- Unused medication is placed into specicans, sealed and returned to the supplier.

General waste

- Health care general waste shall be placed into black lined dustbins, wall mounted baskets or pedal bins.
- Cardboard shall be separately collected and folded, in order to occupy as little space as possible.

X-rays

- Used developer used in x-ray department is collected in 25 litre plastic drums and returned to the supplier to extract the silver.
- Old x-ray plates are collected in appropriate containers, as per the contractor for recycling.

Chemicals

- Chemicals such as those used for cleaning laboratory tests are disposed of in the drain, provided that the concentration does not exceed the limits set by the local municipality.

Food waste

- Food waste such as greens and peelings that are generated during the preparation of food is put in the black lined bins.
- Leftover food is put in black lined bins unless there is a facility for collection for animal consumption.

Remember:

It is dangerous to re-sort health care waste. Health care waste must be segregated correctly the first time.

If medical waste is found in the general waste, then the whole bag of waste should be disposed of as medical waste.

Likewise, general waste should not be removed from medical waste.

5.2 Handling of health care risk waste

To prevent the spread of disease from contact with the pathogens found in body fluids, health care risk waste must be handled with care.

Note:
All body fluids are regarded as waste. Preventing exposure during the spills is extremely important.

5.2.1 Protective clothing

Protective clothing must be worn by all handlers of health care waste. The type of protective clothing will depend on the risk involved and the level of exposure.

Medical staff

Uniform

- A disposable cap that covers the head must be worn if there is the risk of splashing / spraying of blood and other body fluids, e.g. during birth or operations.
- Caps are discarded into a red liner when they are removed.

Goggles

- Goggles are worn if there is a risk of splashing / spraying of blood or other body fluids.
- Goggles must be washed with soap and water / wiped with 70% alcohol daily and when visibly soiled.

Face masks

- Disposable particulate masks are worn if there is a risk of splashing / spraying of blood or other body fluids during birth or an operation.
- Used masks are discarded into red liners.

Aprons/gowns

- A full 'theatre type' gown must be worn if there is a risk of splashing / spraying of blood or other body fluids.

Gloves

- Sterile or unsterile surgical/latex gloves are worn where there is potential exposure to body fluids.

General assistants

Boots

- Light-weight rubber boots should be worn when working in the central waste storage area to protect the workers' shoes from soaking up fluids that may contain blood and other bodily fluids. Boots are washed with soap and water daily.
- Transporters are to wear closed, thick soled shoes (preferably safety shoes).



Aprons/gowns

- A plastic apron must be worn when handling red bags. Reusable aprons must be wiped clean with 70% alcohol daily and when visibly soiled.

Gloves

- Nitrile rubber gloves are recommended when working with waste. Surgical or latex gloves are not appropriate for waste.





Teaching poster: *Protective clothing for general assistants*

5.2.2 Basic Hand Washing

Hands must be thoroughly washed before and after the handling of waste. Hands are the single most important means of cross infection and must therefore be thoroughly decontaminated:

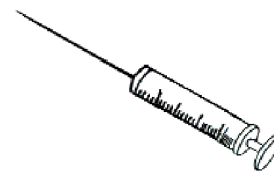
- before and after each patient contact
- between procedures, even if contact is minimal e.g. taking a blood pressure
- before and after eating
- after handling all types of waste
- after using the toilet.

Each step described below consists of 5 strokes backwards and forwards:

- Use a liquid detergent hand soap (Hibiscrub or Betadine), and place hands under either hot or cold water running tap.
- Put palms together and stroke backwards and forwards 5 times.
- Put back of fingers into the opposite palm with fingers interlocked.
- Place left palm over right dorsum; then right palm over left dorsum.
- Rotational rub the right thumb in the left palm; then the left thumb in the right palm.
- Place palm to palm with fingers interlaced.
- Rotational rub the tips of the fingers and the thumb of right hand in left palm; then the left hand in the right palm.
- Rotational rub the left and right wrists.
- Hands and wrists should be washed for 1 minute.
- Dry hands on a paper towel and discard the paper in the correct container.

5.3 Handling of Sharps

The hazardous nature of sharps requires dedicated care to ensure that injury and infection does not occur.



5.3.1 Safe handling of sharps

- Do not recap, bend or remove needles from the syringes.
- Dispose of the needle and the syringe, as a single unit into the sharps container i.e. **do not** detach the needle from the syringe.
- If a sharps container is not available in an area, then sharps can be carried in a receiver to the sharps container, preferably covered.
- Never pass a sharps or needle to another staff member unless it is in a receiver and passed with care. In the event of an exceptional emergency, sharps can be passed and then only by the person holding the sharp placing the item on a solid surface (e.g. a table top) from where it is carefully picked up by the second person.
- Glass slides, blood vials and glass drug ampoules must be disposed of in a rigid container specially designed for the purpose.
- Vacuum Collection systems (Vacutainer) are widely used for the collection of blood. These require a different degree of operator skill and carry a high risk. These needles unfortunately need to be recapped in order to be able to reuse the barrel. This is done using a 'one hand technique' whereby the needle 'follows' the cap. The needle must be unscrewed with care from the barrel and disposed of into the sharps container.

5.3.2 Safe disposal of sharps

- All sharps containers must be provided to the specifications as prescribed by this code of practice.
- Where possible, sharps containers are to be securely contained inside a bracket.
- Sharps containers, marked with the ward (unit) name/number and of the correct size for the type of sharps must be situated in a convenient place in each area where the sharps are generated.
- The sharps containers must be positioned as to as ensure quick and safe disposal without walking any distance to dispose of the sharps.
- Sharps containers must be fully and safety assembled before first use.
- When 3/4's full, sharps containers must be sealed at the generation point and transported to the intermediate storage area for final removal to the incinerator.

Remember:

Never empty sharps containers for re-use.

Never remove any items, even if mis-segregated, from a sharps container .



5.4 Manual handling of waste

The incidences of back injuries are frequent among health care workers. The complex nature of the spine means that stresses placed on the back can injure the discs, fibrous or supporting ligaments and small joints.

Lifting Techniques – to lift boxes

- Get a firm footing with feet shoulder-width apart
- Bend at the knees and at the hips and use the strong muscles of your legs to lift
- Have a good firm grip of the load
- Keep the load close to your body
- Brace your spine and keep your back as straight as possible for the whole lift
- Make all movements smooth, avoiding jerking or twisting.



Lifting techniques – to lift plastic bags

- Get a firm footing with feet shoulder-width apart
- Bend at the knees and at the hips and use the strong muscles of your legs to lift
- Have a good firm grip of the neck of the plastic liner without touching the part of the bag that contains waste
- Hold the bag approximately 10 cm from your body and avoid contact with the body at all times (to avoid injury from mis-segregated waste and contamination of clothes)
- Brace your spine and keep your back as straight as possible for the whole lift.

5.5 Closing of containers



Sharps containers

When 3/4's full, fold the flap forward and push into the hooded area until the flap is lying horizontal.



Specicans

Ensure that the lid is the correct size. Place lid on top of container and apply pressure to ensure that the lids seals properly



Stackable boxes

The lids for the stackable boxes must either be hanging on the outside of the container, and then the top covered by the inner liner, or the lids will be laying loosely or be placed behind/next to the box for final closing. The lid can rest on the top of the box without being closed, and thus allow of one-handed removal of the lid while disposing waste. The lid is closed by firstly securing the larger lip on the lid under the rim of the top of the box followed by firmly pressing on the opposite side of the lid, where the smaller lip is situated. If the firm press is insufficient a light whack will make the lid snap in place.



770 Wheelie Bin

The lid of the wheelie bin must be kept closed. The lid must not be removed from the bin. It is very important not to overfill the wheelie bin so that the lid can be closed properly.

5.6 Closing of liners

The liners of all sizes must be properly sealed at all times using a rubber band.

- When the liners are 3/4's full, pull the two ends of the liner together and holding the opening away from the face, gather the ends together and securely fasten with elastic band.
- To fasten the elastic band, hold the two sides of the band together and wrap the double pieces of elastic around the gathered plastic liner. Pull the one end through the loop of the folded band and pull tight. Fold the end of the plastic liner over and, opening up the elastic band, loop the ends over 3-4 times.
- Liners inside the stands: drop the bag down and pull it to one side. Securely close the liner as above and lift out of the stand.
- Liners inside the nursing trolley and wall mounted baskets: Pull the ends of the basket together to release the liner. Securely close the plastic liner as above and lift out of the basket.
- Liners inside the stackable boxes: Pull the liner away from the edges of the boxes. Securely close the plastic liner as above and lay gently on top. Do not push down! Securely close the box with the lid.



5.7 Collecting the waste from source containers

Routines for the collection of health care waste must be devised to ensure that there are no overfull waste containers at any time. The responsibility for the collection and cleaning is with the General Assistants. However, should containers be full, the nursing staff in the area must immediately securely close the liners and seal the boxes

Health care risk waste:

The collection of health care risk waste must take place at least once a day. When containers are full, they must immediately be secured and new liners fitted.

- When 3/4's full, all small and medium red liners on kick-about trolleys, pedal bins, baskets and stands must be securely closed using the appropriate method.
- The closed small and medium red liners must be placed inside either the large liner in the large stand or into the 50/110 litre stackable box in the intermediate storage area.
- All closed sharps containers must be placed inside the 770 wheellie bin or the 50/100 litre stackable box.
- All specicans with anatomical waste must be labelled "anatomical waste" and taken separately to the mortuary.

Health care general waste:

The collection of health care general waste must be carried out at the routine times in the same manner as above. The small and medium black liners are placed into either a larger liner on a stand or into a lined black bin.

5.8 Cleaning the containers

All containers must be kept clean at all times and washed immediately if required, e.g. in the event of splashes or similar. Reusable containers will be cleaned and sanitised by the service providers at the treatment plant after before the empty containers are returned.



Bins and trolleys in the hospital must be washed with soap and water daily and more often if visibly soiled. They must then be wiped over with a chlorine-based disinfectant solution. Chemicals must be mixed according to manufacturer specifications to ensure maximum efficacy against micro-organisms. Gloves must be worn to prevent contact with blood, other bodily fluids and chlorine-releasing chemicals.

5.9 Replacing the liners

The correct liner for the container, basket or stand must be used.

Description	Size	Container/stand/basket
Small red	46 x 54 @ 50 micron	12 litre pedal bins kick-about trolleys
Medium red	56 x 66 @ 60 micron	Nursing trolley basket 30 litre wall mounted basket Nursing trolley 30 litre box in basket
Large thin red	100 x 95 @ 50 micron	50 litre stackable box
Large thick red	75 x 95 @ 80 micron	Stands in intermediate storage area
Extra large red	100 x 95 @ 50 micron	100 litre stackable box

Description	Size	Container/stand/basket
Small black	46 x 54 @ 50 micron	12 litre pedal bins 12 litre wire baskets other general containers
Medium black	56 x 66 @ 30 micron	30 litre wall mounted baskets
Large black	75 x 95 @ 60 micron	110 litre black dustbin

5.10 Storing at intermediate storage area

The intermediate storage area is the place where both health care risk waste and health care general waste is stored temporarily awaiting transportation to the central storage area.

- The large red liners in the stands must, when 3/4's full, be tightly closed using the elastic bands and placed into the 770 wheelie bin for transportation to the central storage area.
- Sharps containers must, when sealed be placed into the 100 litre stackable box or directly into the 770 wheelie bin for transportation to the central storage area.
- Specicans with bottles, vials, slides etc. must also be placed into the 100 litre stackable box or directly into the 770 wheelie bin for transportation to the central storage area.
- Recycled bottles collected in specicans are stored for collection by the recycle company.
- Containers with liquids must, when full, be sealed with the correct lid and placed at the floor in the department's intermediate storage room and labelled/marked.
- The large black liner must, when 3/4's full, be sealed with an elastic band and placed into a 770 wheelie bin for transportation to the central storage area.
- All cardboard material shall be folded and placed on the floor within the intermediate storage room.
- Daily cleaning of the intermediate storage room is the responsibility of the General Assistants in the area.

5.11 Internal transportation of waste

The internal transportation of the health care risk waste is different for the two systems.

770 red wheelie bin – The full, sealed, heavy duty red liners, are placed inside the red wheelie bin and locked for transportation to the central storage area. The full wheelie bin left there and another clean wheelie bin is used.

Nesting wire cage trolley – The full, closed 50 and 100 litre stackable boxes are placed inside the trolley (maximum 8 x 100 litre boxes – or 2 x 50 litre). The trolley is secured and taken to the central storage area where it is left and another clean trolley used.

770/660 green wheelie bin – The full, sealed, heavy duty black liners are placed inside the green wheelie bin and transported to the skip area. The liners are removed from the bin and thrown into the skip for removal by the local authority.



Red wheelie bins are used for the internal transportation of health care risk waste

5.12 Collection routines

The timetable for waste collection of waste is summarised in the table below:

GROUPS	07h00 - 09h00	13h00 - 14h00	15h30 - 18h00
Group A Ground Floor	Foyer Pharmacy Admissions Casualty OPD OOPD Ward 25 X-Ray Kit Room Physiotherapy	Wards 1 & 2 Wards 7 & 8 Ward 14 Wards 19 & 20 Stores	Renal Unit Laboratory Doctor's Night Quarters Wards 3 & 4 Wards 9 & 10
Group B First Floor	Doctor's Night Quarters Laboratory Renal Unit Wards 3 & 4 Wards 9 & 10 Ward 15 Wards 21 & 22	Wards 3 & 4 Wards 5 & 6 Theatre Ward 20	
Group C Second Floor	Theatre Wards 5 & 6 Wards 11 & 12 Ward 17 Ward 23 & 24		Theatre Wards 5 & 6 Wards 11 & 12 Ward 17 Wards 23 & 24 Stores Nurses Home Wards 19 & 20 Wards 14 Wards 7 & 8 Wards 1 & 2

5.13 Storing at central storage area

The central storage area is where the waste is securely stored awaiting removal by the service provider. This room must have a notice forbidding unauthorised entry. A regular programme of vermin and vector control must be carried out by the cleaning department. Good ventilation is essential.

The following are stored in the central storage area:

- Full 770 red wheelie bins awaiting removal by the service provider
- Empty, clean 770 red wheelie bins
- Nesting wire cage trolleys containing 8 x 100 litre stackable boxes
- Empty, clean nesting wire cage trolleys
- Folded cardboard for recycling
- 660 Green wheelie bin.

Food drums must not be stored here as it attracts vermin.

5.14 Weighing of waste and record keeping

A weighing platform will be placed within the Central Storage where a recording book/ recording sheets must be kept. All filled reusable containers must be counted and weighed before removal on each day of removal. The type, ID number and mass must be recorded for each container. The ID numbers of each reusable bin must be recorded when received empty and cleaned as well as when removed full. There must at all times be a precise record of the number and ID numbers of reusable containers in the store and distributed in the hospital.

5.15 External transportation of waste

The Service Provider will collect all closed reusable containers, i.e., all closed wheelie bins and all full as well as one partially full roll-tainer with stackable boxes. The containers must be wheeled onto the lifting tailgate and secured in the truck. Under no circumstances should the workers be allowed to manually lift the stackable boxes or the wheelie bins into the truck.

The loading of the truck can either be directly from the elevated central storage into the truck via the tailgate resting on the loading platform, or via the ramp and unto the lifting tailgate to be elevated and pushed into and secured in the truck.

At least one wheel brake must be locked when wheelie bins and roll-tainers are being elevated using the lifting tailgate to avoid containers rolling of the tailgate.

The pavement and all relevant surfaces shall at all times be maintained sufficiently smooth to allow trouble free movement of the wheelie bins and the roll-tainers.

5.16 Emergency procedures

For emergency situations all departments shall have their own detailed emergency plan. This procedure only describes the basic emergency procedures in connection with health care waste.

Body fluid spill

- Cover the spill with paper towels and cordon off the area with “wet floor” signs.
- Collect equipment: Red plastic bag, unsterile latex gloves, Hypochlorite detergent 10 000ppm or 1% sodium hypochlorite, a mask and goggles may be worn if the spill is large and there is risk of splashing.
- Put on gloves and carefully wipe up the spill, taking care not to splash any of the fluid on your body.
- Cover the spill area with more paper towels.
- Pour the hypochlorite / sodium hypochlorite solution onto the paper towels and leave to stand for 10 minutes.
- Wipe up the area and discard paper towels and gloves into a red plastic bag and dispose of as infectious waste.

Broken mercury thermometer

- Scoop the glass up using a piece of cardboard.
- Discard glass in a sharps container or specican.
- Scoop up the mercury using a piece of cardboard and place in a glass bottle.

Note: mercury should be collected and sent for “special disposal”.

Gluteraldehyde or formalin

- Open windows and ventilate the area as much as is practical
- Cordon off area with a wet floor sign
- Collect paper towels and a bucket, bowl or red plastic bag.
- Wear a mask, gloves and eye protection
- Clean up the area using paper towels
- Work as quickly and safely as possible
- Scoop up any broken glass using a piece of cardboard
- Discard glass in a sharps container or specican.
- Place paper towels into the bucket, bowl or red plastic bag and discard in the sluice into normal sewerage
- Wash the area with water and follow up with routine cleaning methods

Spillage of infectious waste during transportation of health care risk waste

- If solid infectious waste is spilled during transport inside a hospital, the waste shall immediately be shovelled into a new red plastic bag.
- If solid infectious waste is spilled during external transportation, the waste shall immediately be shovelled into a container, regardless of whether packed in a red plastic bag or not.
- If liquid health care risk waste is spilled during transportation inside a hospital, the manager of the central storage room shall be contacted for immediate action. The collector makes the contact.

- If liquid health care risk waste is spilled during external transport, the spillage shall be remedied by shovelling sand and/or dirt on to of the spilled liquids, where after the soaked sand/dirt shall be shovelled into a health care risk waste container.
- All spillages shall be reported to the head of the central storage room.

Needle stick injuries

- Needle stick injuries are to be reported to the Head of the Department who is required to keep records in a book. The reporting of needle stick injuries and the administration of AZT treatment is clearly laid out:
 1. Both the patients' blood (with consent) and the injured person's blood is tested.
 2. AZT 200 mg/p.o. and 3TC 150 mg p.o. is administered 4 hourly until HIV results of the patient are available.
 3. Tests are taken every two months for one year after the injury.
 4. Counselling and guidance is given if the person tests HIV positive.
 5. An accident report form is to be completed.

5.17 Ordering of waste equipment

Waste equipment is ordered by unit and department supervisors from the Buying Department using the VA2 order form. Orders are taken fortnightly in accordance with the programme issued by the Buying Department. Stock is issued through the stores.

Appendix A

Types of Containers and Usage

The following tables detail the types, quantities and usage for the equipment for each system.

CONSUMABLE CONTAINERS		
Type of container	Colour	Placing / Use
8 litre sharps	White / red	All needles, blades and other sharp objects
70 cm tall sharps	White / red	Tro-catheters and other long sharp objects
10 litre specican - anatomical	White / red	Placentas and other human tissue
10 litre specican - bottles and vials	White / red	Bottles and vials
LINERS		
Size of liners	Colour	Placing
46 x 54 @ 50 micron	Red	Placed in pedal bins, kick-about trolleys
56 x 66 @ 60 micron	Red	Placed in nursing trolley baskets, wall-mounted baskets and 30 litre boxes
75 x 95 @ 80 micron	Red	Placed in stands in intermediate storage areas for bags from smaller containers
75 x 95 @ 50 micron	Red	Placed inside 50 litre boxes for all types of infectious waste; can be used at point of generation or in intermediate storage area
100 x 95 @ 50 micron	Red	Placed inside 100 litre box for all types of infectious waste
46 x 54 @ 30 micron	Black	Placed in pedal bins and other containers for general waste
56 x 66 @ 30 micron	Black	Placed in wall mounted baskets for general waste
75 x 95 @ 50 micron	Black	Placed in stands or black bins for general waste

REUSABLE CONTAINERS		
Type of container	Colour	Placing / Use
770 Wheelie bin	Red	Kept at central storage. Used to transport the waste from intermediate storage areas to central storage. Also used to transport the waste off the site.
100 litre roto-mounted box with lid	Red	At intermediate storage area with red liner. Full, closed smaller liners from pedal bins, kick-about trolleys and 30 litre bins are placed into this box. Liner closed with rubber band and container sealed with lid.
50 litre roto-mounted box with lid	Red	At point of generation or at intermediate storage area with red liner. When full, liner closed with rubber band and container sealed with lid.
30 litre Addis bin	Grey	At point of generation supported on bracket on wall or nursing trolley. Contains red liner.
12 litre pedal bin	White / grey	At point of generation and fitted with red or black liner. Used for both infectious and general waste.
Kick-about trolley	Stainless steel	Used in theatre, maternity, ICU and renal with red liner for infectious waste.
STANDS, BRACKETS, BASKETS AND TROLLEYS		
Type of equipment	Finish	Placing / Use
110 litre stand	Electro galvanised	In intermediate storage areas with red or black liner for smaller full closed bags from containers at point of generation.
30 litre wall basket	Electro galvanised	Placed on walls with red or black liners at point of generation.
Nursing trolley basket	Electro galvanised	Placed on nursing trolley with red liner for general infectious waste at point of generation.
Nursing trolley bracket	Electro galvanised	To support the 30 litre bin on the nursery trolley.
Wall bracket	Electro galvanised	To support the 30 litre bin on the wall.
Sharps wall bracket	Powder painted	To support the 8 litre sharps container
Nursing trolley sharps bracket	Powder painted	To support the 8 litre sharps container on the nursing trolley
Nesting wire cage	Electro galvanised	To transport the stackable boxes from the intermediate storage area to the central storage area. They are also taken off the site.

Appendix B

Specifications and Sizes of Equipment

Liners:

The liner-based system requires that they are sufficiently strong enough to withstand the maximum weight to be contained. The specifications for the liners must be in accordance with international standards for environmental friendly disposal. The two colours are red and black. The colour dye for the red can be reduced to allow a degree of transparency.

- ♦ Polyethylene (PE) plastic
- ♦ Linear low density virgin plastic for liners
- ♦ Micron in liners increases according to size
- ♦ Tensile strength to hold maximum of 20 kgs.
- ♦ Dyes not to contain heavy metals

The following sizes are to be used:

770 Wheelie Bin System:

- 46 x 54 red @ 50 micron (12 litre pedal bins, kick-about trolleys)
- 56 x 66 red @ 60 micron (nursing trolley basket and 30 litre wall mounted basket)
- 75 x 95 red @ 80 micron (on stands in the intermediate storage areas)

Stackable Box System:

- 46 x 54 red @ 50 micron (12 litre pedal bins, kick-about trolleys)
- 56 x 66 red @ 60 micron (Nursing trolley 30 litre reusable box)
- 75 x 95 red @ 50 micron (50 litre box)
- 100 x 95 red @ 50 micron (100 litre box)

Disposable Containers:

The specifications for the disposable containers must be manufactured to international standards for environmental friendly disposal.

- ♦ Polyethylene or polypropylene plastic
- ♦ Rigid and puncture proof
- ♦ Tightly fitting lid
- ♦ Dyes not to contain heavy metals

The following sizes are to be used for both systems:

- 8 litre horizontal loading, rectangular container with firmly fitted lid
- 70 cm tall, cylindrical sharps container
- 10 litre cylindrical specican with fitted lid

Reusable Containers:

The re-usable containers must be hardwearing and robust to withstand some abuse.

770 Wheelie Bin System:

- 770 Red Wheelie Bin
- 12 litre pedal bins
- Kick-about trolleys

Stackable Box System:

- 100 litre roto-moulded red box + lid
- 50 litre roto-moulded red box + lid
- 30 litre grey Addis bin (wall or nursing trolley mounted)
- 12 litre pedal bin
- Kick-about trolleys

Baskets, Stands and Brackets:

A variety of baskets, stands and brackets will be used to fix the containers either to the walls or nursing trolleys.

770 Wheelie Bin System

- 30 litre galvanised nursing trolley basket
- 30 litre galvanised wall basket
- Wall brackets for 8 litre sharps containers
- Nursing Trolley brackets for 8 litre sharps containers

Stackable Box System

- Galvanised bracket for nursing trolley 30 litre bin
- Galvanised brackets for wall mounted 30 litre bin
- Wall brackets for 8 litre sharps containers
- Nursing Trolley brackets for 8 litre sharps containers

Other Equipment:

- Nesting wire cages for transporting stackable boxes
- Elastic Bands to close the liners
- Deep Freeze at Itireleng
- Scales
- Stainless steel kick-about trolleys
- Nursing Trolleys
- Gloves