

# Appendix J HCRW Training Booklet

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## Healthcare Risk Waste Management Training Booklet

This is a guideline on best healthcare risk waste practices within a healthcare facility based in South Africa. The legislation and guidelines contained herein, are available from the respective government departments and SANS guidelines which can be purchased directly from SANS.

## Introduction

Compass Medical Waste Services will find the right healthcare risk waste (HCRW) management solution for you. Our excellent track record and customer-centric approach, coupled with our capacity, means we are fully equipped to manage the 'cradle to grave' process of HCRW containment, transportation, treatment and disposal.

We are committed to carrying out the essential function of HCRW treatment and disposal in an environmentally sound and responsible manner, continuously striving for improvements in all aspects of environmental performance.

Compass is currently the largest HCRW treatment company in South Africa, with our head office in KwaZulu-Natal and a footprint which extends to Gauteng, North West, Mpumalanga, Free State, Northern Cape, Limpopo, Eastern Cape and Western Cape.

With over 20 years' experience, our expert advice and solution-orientated approach will give you peace of mind that you are partnering with an experienced, reliable and compliant service provider. Our goal being to partner with you to create longevity and solid relationships.

### Objectives:

1. Define what healthcare waste is.
2. Differentiate between the various types of waste.
3. Ensure correct segregation and containerisation of each waste stream.
4. Assist in reducing waste and controlling costs.
5. Assist with safety and compliance.
6. Provide a quick reference guide to HCRW management.

### What is healthcare waste (HCW)?

Healthcare waste comprises of all the waste that is generated at healthcare facilities.

This waste is broken down into two categories:

- Healthcare general waste (HCGW)
- Healthcare risk waste (HCRW)

#### 1. Healthcare general waste (HCGW)

HCGW comprises of the **non-hazardous** portion of the waste that is generated at the healthcare facility e.g. paper, plastic, cardboard, flowers, cans, water bottles, packaging etc. This waste stream can be greatly reduced by recycling initiatives. This is the only part of the healthcare waste stream that can be recycled.



#### 2. Healthcare risk waste (HCRW)

HCRW comprises of the **hazardous** portion of the waste that is generated at the healthcare facility. This is any waste that is a hazard to human health or the environment. No healthcare risk waste is allowed to be recycled and should be collected, treated and landfilled. HCRW is broken down into **nine different waste streams**.



## 1. Categories of healthcare risk waste (HCRW)

Compass collects, transports, treats and disposes of HCRW from categories 1 - 6

- 1.1 **Infectious waste:** gloves, bandages, nappies, dressings and swabs etc.
- 1.2 **Sharps waste:** needles, scalpel blades, knives, infusion sets, saws, amino hooks, broken glass, ampoules etc.
- 1.3 **Anatomical waste:** non-viable foetuses, placentas, blood and bodily fluids from patients.
- 1.4 **Pharmaceutical waste:** expired, unused, spilled and contaminated pharmaceutical products or medication.
- 1.5 **Cytotoxic / Genotoxic waste:** genotoxic waste which may include drugs, vomit and urine from patients treated with cytotoxic drugs.
- 1.6 **Radioactive waste:** items contaminated with radioactive substances that are under 74 Becquerel.

Compass does not collect, transport, treat or dispose of waste from categories 1.7 - 1.9 but we can provide information on whom to contact for assistance.

- 1.7 **Hazardous chemical waste:** liquid, gaseous or solid chemical that is ignitable, corrosive, reactive, toxic e.g. formaldehyde.
- 1.8 **Heavy metal waste:** metallic chemical element that has a high density and is toxic or poisonous at low concentrations e.g. Mercury, cadmium, lead.
- 1.9 **Pressurised containers:** container with internal pressure higher than external pressure e.g. gas cylinders.

### 1.1 Infectious waste

- This category forms the **largest component of HCRW** generated in a facility.
- It consists of materials that could transmit infectious agents for e.g. gloves, bandages, nappies, dressings, swabs, bodily fluids (blood and urine) and faeces etc.
- No sharps must be placed into the infectious waste stream.
- No outer wrapping or HCGW should be mixed with the infectious waste.
- Both reusable (RUCs) and single-use (disposable) containers are supplied to the healthcare facilities for containerisation of infectious waste.
- Both RUCs and single-use containers must be lined with a red bag then sealed with a cable tie once  $\frac{3}{4}$  full.
- The RUCs and box sets need to be correctly sealed with biohazard tape once the full bags have been sealed with a cable tie.
- **Mixing of waste is unacceptable and extremely costly.**

For more information, refer to the management of infectious waste training brief on Compass' Document Management System (DMS).



Reusable container (RUC)



Single-use cardboard box set



Red bag / liner



Biohazardous tape

## 1.2 Sharps Waste

- A sharp is any object capable of causing cuts or puncture wounds, for e.g. needles, scalpel blades, knives, infusion sets, saws, amino hooks, broken glass, ampoules etc.
  - These items are considered as hazardous HCRW, even if they are not infectious, because of their ability to cause a sharps injury.
  - They must be disposed of so as not to cause harm to any individual.
  - Both reusable and single-use sharps containers are available and are yellow in colour.
  - Sharps containers must be rigid and puncture proof.
  - Ensure the lid is on securely before use. Open the flap on the top of the container lid and place the sharps into the container through this opening.
  - All sharps, whether contaminated or not, should be placed into a sharps container.
  - Needles should not be separated from syringes due to risk of injury.
  - Brackets should be used to secure sharps containers to the wall or trolley.
  - Do not overfill containers. They must be sealed once they reach the fill line.
  - Sharps containers must be dated with an opening and closing date. Compass has an opening and closing date sticker available.
  - Sharps containers should be disposed of within 90 days of opening.
  - Do not dispose of any other type of waste stream (gloves, bandages, nappies, cotton wool swabs, paper, plastic, masks, food etc.) other than sharps waste into the sharps container.
- The sharps containers are more expensive compared to the other waste stream containers.

For more information, refer to the management of sharps waste training brief on the Compass DMS.



Single-use sharps

Reusable sharps containers

## 1.3 Anatomical waste

- Waste consisting of organs, tissues, body parts, non-viable fetuses, placentas, blood and bodily fluids from patients.
- Only use single-use (disposable) containers.
- Containers must be red in colour and are called anatomical waste bins / box sets.
- For larger tissue e.g. leg or arm amputations, the 50L or 142L cardboard box set can be used. The body tissue should be double bagged and sealed and placed into the cardboard box set. The box set must then be marked 'anatomical waste' by placing on a barcoded anatomical waste sticker.
- A tissue register should be kept by the healthcare facility, completed and signed by the relevant person on duty.

- Ideally, there should only be one organ / body part placed into a red bag and then into a container i.e. each placenta should have its own anatomical waste container.
- Each anatomical waste bag should be labeled with the patient's details / patient's sticker prior to the bag being placed into the anatomical waste container.

For more information, refer to the management of anatomical waste training brief on the Compass DMS.



Anatomical waste bins



Anatomical waste box set



Anatomical sticker



Tissue register

#### 1.4 Pharmaceutical waste

- This is expired, unused drugs or vaccines, spilled and/or contaminated pharmaceutical products or medication.
- Containers must be green in colour with a 'toxic substance' label.
- Special precautions must be taken to prevent theft and illegal distribution of this waste stream.
- Pharmaceutical drugs are categorised into schedules 0 - 6 substances according to their hazard potential.
- Schedule 0 - 4 drugs can be disposed of together in one container, regardless of the schedule, if they are the same type i.e. pills in one container and ointments in another.
- Schedule 0 - 4 drugs are deemed less hazardous than 5 - 6 drugs and are therefore not as strictly controlled.
- Schedule 5 - 6 need special permission from the National Department of Health (DOH) prior to disposal. A pharmaceutical register must be filled in and this must accompany the application letter to the DOH.
- A barcoded schedule 5 - 6 sticker is to be placed on the container to differentiate from schedules 0 - 4.

For more information, refer to the management of pharmaceutical waste training brief on the Compass DMS.



Pharmaceutical containers

Pharmaceutical container with schedule 5 & 6 sticker

### 1.5 Cytotoxic waste

- This waste is highly hazardous and is used in chemotherapy for the treatment of cancer.
- Cytotoxic waste must be containerised in a single-use container. A barcoded cytotoxic sticker must be placed onto the container, prior to collection for treatment and disposal.
- All infectious waste should be discarded into a green pharmaceutical container with a barcoded cytotoxic sticker.
- Sharps that are contaminated with cytotoxic waste must be placed into a single-use sharps container with a barcoded cytotoxic sticker.

For more information, refer to the management of cytotoxic waste training brief on the Compass DMS.



Cytotoxic sharps container

Cytotoxic pharmaceutical container

Cytotoxic sticker

### Various bags

There are a variety of bags available for use in the different waste streams.

- Colour coding of bags for waste segregation is very important – as recommended by SANS 10248-1:2009.
- Red bags are used for infectious waste.
- Yellow bags are used for contaminated linen.
- Black or clear bags are used for HCGW.



Red for infectious waste



Yellow for contaminated linen



Black / clear for HCGW linen



## 2. Cradle to grave management of HCRW

Refers to the **management of waste from the point of generation** i.e. from the cradle, to the end or final treatment and disposal of the waste - the grave.

There are **seven steps** to the 'cradle to grave' management of HCRW:

- 2.1 Segregation and containerisation
- 2.2 Intermediate storage
- 2.3 Internal collection and transportation
- 2.4 Central storage area and weighing
- 2.5 Off-site collection and transportation
- 2.6 Treatment
- 2.7 Landfilling

The healthcare facility is **directly responsible** for the implementation and management of the first 4 steps of the 'cradle to grave' system. The service provider nominated by the healthcare facility oversees steps 2.5, 2.6 and 2.7, however the responsibility still lies with the healthcare facility. It is therefore highly recommended that each healthcare facility conducts regular adhoc audits on their service provider to ensure legal compliance.





## 2.1 Segregation and containerisation

- The segregation of the waste is done by the generator of the waste.
- The HCGW must be separated from HCRW.
- There are two types of containers for HCRW, single-use and reusable containers.
- Healthcare practitioners are responsible to segregate the waste correctly.
- By law, all waste must be segregated into the correct containers.
- Correct waste segregation will assist the facilities in avoiding unnecessary costs.
- Cost control is in the hands of each healthcare worker.

## 2.2 Intermediate storage

- This is the **temporary storage** of waste inside the wards and departments of a healthcare facility, before transportation to the central storage area.
- In most facilities this is the sluice room.
- There must be a daily collection of HCRW from this area.
- All waste liners (infectious and general) should be kept in their containers and off the floor.
- The area should be cleaned daily.



Correct storage



Incorrect storage

## 2.3 Internal collection and transportation

- HCRW and HCGW must be transported within the healthcare facilities by means of wheeled trolleys which should be cleaned daily.
- Waste must be taken from the sluice room to a central storage area (CSA) at least once a day.
- Each container or liner must be labeled with the ward's name and date. Compass has ward name and date stickers available.
- Each trolley must be labelled with 'dirty' or 'clean' to avoid cross contamination.
- Each trolley must be **sanitised immediately after offloading** the waste.

### Internal trolleys



## 2.4 Central storage area (CSA)

- Waste is kept in a CSA awaiting collection by Compass
- Waste is always weighed by Compass before we collect it.
- **A representative of the facility must always be present** when the waste is weighed by Compass.
- The CSA area should be secure, covered, locked, well-lit and ventilated.
- It should have running water and drainage points, as well as a rodent control system in place.
- The CSA area must display adequate signage. It must have a CSA sign which states 'no unauthorised entry' at the gate or above the door of the CSA area. It also needs to include an emergency contact list outside the CSA area in case of emergencies e.g. spillages etc.



Correct storage



Incorrect storage



Central storage area (CSA) sign

## 2.5 Off-Site collection and transportation

- HCRW must be taken to the treatment facility by Compass, a registered service provider.
- Compass' vehicles used to collect the HCRW comply with the relevant legislation i.e. registered as a dangerous goods vehicle, has dangerous goods markings on the vehicle, has a spill kit on the vehicle. Compass' drivers have professional drivers' permits and wear the correct PPC and PPE at all times.
- The clean containers and the HCRW are kept separate from one other.
- A Waste Manifest must be signed when the HCRW is handed over to Compass.



Registered dangerous goods vehicles

| COMPASS Medical Waste Services   |                       | BARCODE   |                   | Day   | Month | Year |
|--|-----------------------|---|-------------------|---|-------|------|
| DANGEROUS GOODS DECLARATION/WASTE MANIFEST   |                       | 1. Generator's Code   | 2. T-Pax No.      | 3. Manifest Tracking Number: "X" or "E" or "G" or "B" |       |      |
| 4. Generator's Name and Postal Address   |                       | Generator's Physical Address (if different to postal address) |                   |   |       |      |
| Generator's Tel No:  |                       | Fax No:   |                   | WIS Registration No:                                  |       |      |
| 5. Description   | 6. Type/ Container    | 7. Container Size (litres)                                    | 8. Total Quantity | 9. Total Weight (kgs)                                 |       |      |
| SHARPS - yellow  | Single Use            |   |                   |   |       |      |
| SHARPS - yellow  | Single Use            |   |                   |   |       |      |
| INFECTIOUS WASTE   | Single Use / Reusable |   |                   |   |       |      |
| INFECTIOUS WASTE   | Single Use / Reusable |   |                   |   |       |      |
| PHARMACEUTICAL - red   | Single Use            |   |                   |   |       |      |
| PHARMACEUTICAL - green   | Single Use            |   |                   |   |       |      |
| CYTOTOXIC - with stabiliser  | Single Use            |   |                   |   |       |      |
| OTHER  |                       |   |                   |   |       |      |
| 10. Special handling instructions and additional information   |                       |   |                   |   |       |      |
| 11. GENERATOR'S CERTIFICATION: I hereby declare that the content of the consignment is fully and accurately described, classified, packed, marked and labelled, and in all respects in proper condition for transportation in accordance with the applicable laws and regulations. |                       |   |                   |   |       |      |
| Generator's Printed Name   |                       | Signature   |                   | Day   | Month | Year |
| 12. Transporter's Name:  |                       | Transporter's Tel / Cell No:                                  |                   | Vehicle Registration No:                              |       |      |
| WIS Registration No: 10218   |                       | Lic No: 2015  |                   | Hazardous Goods 8                                     |       |      |

Waste Manifest

## 2.6 Treatment

- The treatment of HCRW depends on the type of waste.
- There are burn and non-burn technologies available.
- Compass uses a non-burn technology, called the autoclave, to treat HCRW. Non-burn technologies can treat infectious and sharps waste. The waste, after being treated and sterilised in the autoclave system, is then shredded to ensure that the waste no longer resembles HCRW.
- A sterility test is done to ensure that waste, after the treatment cycle, is regarded as non-hazardous.
- Incinerators are used to dispose of anatomical, cytotoxic and pharmaceutical waste.



Compass' autoclaves are used to treat sharps and infectious waste

## 2.7 Landfilling

- After treatment, the infectious and sharps waste residue is landfilled.
- A general landfill site (Class B) can be used for delisted, autoclaved and shredded HCRW.
- Class A hazardous landfill sites are used for incinerator ash generated from the treatment of pharmaceutical, anatomical and cytotoxic waste.



Landfilling the disinfected HCRW (Class B)

## Tracking and traceability

Ensuring that the waste is tracked from cradle to grave, our individually barcoded containers are scanned on delivery and at the time of collection, after the waste has been weighed. The weights of each full, uniquely barcoded container are linked from the scale and scanner to the individual Waste Manifest documents, ensuring accuracy.

Following collection, a copy of the Waste Manifest document is left with the facility. Once the waste is treated and disposed of the Safe Disposal Certificate is available on Compass' DMS.

The Safe Disposal Certificates from Compass and third-party incinerators will be received by the facility well before the legally stipulated time.

## Document management system

Our document management system (DMS) is a free online portal which can be accessed using your unique password. Training briefs, invoices, statements, Safe Disposal Certificates, industry news and updated legislation can be easily accessed on Compass DMS at any time.

### 3. Relevant legislation

There are four main National Acts that are important for the management of healthcare risk waste:

- National Environmental Management Act 107 of 1998
- National Environment Management Waste (NEMA) Act 59 of 2008 and its associated Regulations and Norms and Standards
- National Road Traffic Act 93 of 1996
- Occupational Health and Safety Act 85 of 1998

#### 3.1 Five Important Environmental Principles, as per Section 2 of the **National Environmental Management Act 107 of 1998**

- **Duty of care:**  
That waste is avoided, minimised, reused or recycled or otherwise disposed of in a responsible manner.
- **Cradle to grave:**  
Responsibility for the waste and the consequences of the waste exist throughout its life cycle.
- **Polluter pays principle:**  
Any organisation causing pollution is liable for the costs of cleaning it up.
- **Precautionary principle:**  
Always assume that waste is hazardous until shown to be safe. Do not mix HCGW with HCRW.
- **Preventative principle:**  
Treatment and disposal take place as near as possible to the point of generation as is technically and environmentally feasible. Reduce possible risks by not transporting waste over long distances.

#### 3.2 Important extracts from NEMA Waste Act 59 of 2008

- **Section 16 – General duty in respect of waste management:**  
A holder of waste must take all reasonable measures to ensure that the waste is treated and disposed of in an environmentally sound manner.
- **Section 24 – Collection of waste:**  
No person may collect waste for removal from premises unless such person is authorised by law to collect that waste.
- **Section 26 – Treatment, processing and disposal of waste:**  
No person may dispose of waste in a manner that is likely to cause pollution of the environment or harm to one's health and well-being.
- **Section 68 – Penalties:**  
There is a fine of R10 million or 10 years' imprisonment, or both, if HCRW is illegally managed.

### 3.3 Additional references to legal requirements

- SANS 10248-1:2008 Management of HCRW from a Healthcare Facility
- SANS 452:2008 Non-reusable and reusable sharps containers
- SANS 10228 The identification and classification of dangerous goods for transport.
- SANS 10229 Transportation of dangerous goods – packaging requirements (chapter14)
- National Road Traffic Act 93 of 1996 Chapter 8 Gauteng HCRW Regulations 2004
- Gauteng HCW Regulations 2004
- Gauteng Sustainability HCRW Project – HCRW management in Healthcare Facilities
- HCRW Management in Healthcare Facilities developed by Gauteng Sustainability Healthcare project
- HCW Management of Healthcare Facilities Training programme: Developed by GP Sustainable HCW project and GDOH.
- HCRW Management Policy for KZN 2008
- WHO Geneva – Safe Management of Wastes from Healthcare Activities
- A code of practice for the safe use of and disposal of sharps – British Medical Association
- General Regulation 27 of the Medicines and Related Substance Control Act 101 of 1965
- Guidelines to the destruction of Schedules 5 and 6 Medicines and Substances

transparency



commitment



reliability



initiative



teamwork



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