



MANAGING HEALTHCARE WASTE END DISPOSAL - A PARTNERSHIP

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BACKGROUND

- ❑ During the international health care meeting hosted by WHO in Geneva on June 20 – 22, 2007, core principles for achieving safe and sustainable management of health care-waste was developed.
- ❑ In the year 2000 according to WHO, statistics revealed the serious harm that was caused by contaminated syringes. Improper management of health care-waste poses a significant risk to patients, health care workers, the community and the environment. This problem can be solved through right investment of resources and commitment. A growing number of countries recognized this problem and took steps to respond to this need.
- ❑ The WHO principles therefore require that all those who are associated with financing and supporting health-care activities should provide with the costs of managing health-care waste. This they describe as duty of care.
- ❑ It was recommended that governments, donors and partners should all participate in these proposed principles.

DEFINITION OF HEALTHCARE WASTE

- ❑ WHO defines healthcare waste (HCW) as the total waste stream from a healthcare or research facility that includes both potential risk waste and non risk waste materials.
- ❑ It is also defined as any waste that is generated in the diagnosis, treatment or immunization of human beings.
- ❑ In many guidelines, all waste that is contaminated with blood or body fluids are classified as infectious waste.

SOURCES OF HEALTHCARE WASTE

- ❑ Government hospitals
- ❑ Private hospitals
- ❑ Nursing homes
- ❑ Physician's offices
- ❑ Dentist offices
- ❑ Dispensaries
- ❑ Mortuaries
- ❑ Blood bank and collection center
- ❑ Laboratories
- ❑ Research organizations

CLASSIFICATION OF HOSPITAL WASTE



CATEGORIES OF HEALTH CARE WASTE

- ❑ **Sharps:** Used or unused sharps
e.g. hypodermic, intravenous or other needles; auto-disable syringes; syringes with attached needles; infusion sets; scalpels; pipettes; knives; blades; broken glass
- ❑ **Infectious:** Infectious waste is material suspected to contain pathogens (bacteria, viruses, parasites or fungi) in sufficient concentration or quantity to cause disease in susceptible hosts. This category includes: waste contaminated with blood or other body fluids, cultures and stocks of infectious agents from laboratory work, waste from infected patients in isolation wards; dressings, bandages and other material contaminated with blood or other body fluids
- ❑ **Pathological:** Human tissues, organs or fluids; body parts; foetuses; unused blood products

CATEGORIES OF WASTE cont.

- ❑ **Pharmaceutical** : Pharmaceuticals that are expired or no longer needed; items contaminated by or containing pharmaceuticals; Cytotoxic waste containing substances with genotoxic properties_waste containing cytostatic drugs (often used in cancer therapy) genotoxic chemicals)
- ❑ **Chemical**: Waste containing chemical substances (e.g. laboratory reagents; film developer; disinfectants that are expired or no longer needed; solvents; waste with high content of heavy metals, e.g. batteries; broken thermometers and blood pressure gauges)
- ❑ **Radioactive**: Waste containing radioactive substances (e.g. unused liquids from radiotherapy or laboratory research; contaminated glassware, packages, or absorbent paper; urine and excreta from patients treated or tested with unsealed radionuclides; sealed sources)

KEY POINTS

- ❑ Of the total amount of waste generated by health-care activities, about **85% is general waste**.
- ❑ The remaining **15%** is considered **hazardous** material that may be **infectious, toxic or radioactive**.
- ❑ Every year an estimated **16 000 billion injections** are administered worldwide, but not all of the needles and syringes are properly disposed of afterwards.
- ❑ Health-care waste contains potentially harmful microorganisms which can infect hospital patients, health-care workers and the general public.

MANAGEMENT OF HEALTHCARE WASTE

Effective waste management needs

- ❑ National Policy, strategy, plan, guidelines and SOP
- ❑ Legislation/Rules for waste management
- ❑ Political commitment
- ❑ Committed manpower
- ❑ Good management
- ❑ Proper budgetary allocation

WASTE MANAGEMENT PROCESS

- ❑ In terms of the National Environmental Management: Waste Act 59 of 2008 (NEMWA) a holder of waste includes any persons who generates, imports, stores, accumulates, transports, processes, treats, or exports waste or disposes of waste. HCRW generators have a duty of care to handle, store, transport and / or dispose of waste in an environmentally sound and legally compliant manner.

By the Shepstone & Wylie Environmental Law team

MAY 8, 2017 **Health Care Risk Waste: Management and Liability**

CRADLE TO GRAVE MANAGEMENT PROCESS

- ❑ Cradle to grave waste management process /"life- cycle responsibility" is a holistic process of handling your facility's waste stream from generation of waste and byproducts, to removal from your site to treatment and disposal.
- ❑ It is important that all HCRW generators have a standard operating procedure for the disposal of waste. This procedure should be detailed in a Waste Management Plan that ensures legal compliance.
- ❑ [Fredri](#)Med waste-Posted October 28th, 2016 by [Sean cks](#).

WHO Hospital Waste Management Cycle



WASTE MINIMIZATION



WASTE IDENTIFICATION

Packaging, labelling and colour-coding

- ❑ A generator of health care risk waste must make sure that all healthcare waste is disposed of in a correct risk waste container.
- ❑ The generator's name or registration number must reflect on all containers
- ❑ Reusable containers must be properly decontaminated to be safe for handling

WESTERN CAPE HEALTH CARE WASTE MANAGEMENT ACT, 2007 (ACT 7 OF 2007) Annexure in terms of section 14 of the Western

Cape Health Care Waste Management Act, 2007 (Act 7 of 2007).

Waste Management

HEALTH CARE RISK WASTE - CORRECT WASTE SEGREGATION

CLASS	CONTAMINATED / INFECTIOUS	SHARPS	ANATOMICAL	PHARMACEUTICAL	CYTOTOXIC
CONTAINER COLOUR					
TYPE OF WASTE					
NOTES	<ul style="list-style-type: none"> All contaminated (blood and bloody fluids) items. e.g. Clinical Gloves, swabs, dressings etc. Do not overfill container and ensure they don't weigh more than 15kg Maximum Storage period: 14 days 	<ul style="list-style-type: none"> All Sharps (needles etc.) To be mounted securely by brackets. Ensure that lid is securely fitted before removal. Do not exceed fill line!!!! Maximum storage period: 90 days 	<ul style="list-style-type: none"> Any human tissue, body fluids, organs, body parts. Storage period: <ul style="list-style-type: none"> If not refrigerated - max 72 hours & also no nuisance i.e. odours/posts. If kept at 4°C - max 1 week. If kept at -2°C - max 90 days. 	<ul style="list-style-type: none"> All expired medication/drugs. Schedule 1 - 4; dispose into green plastic pharmaceutical container/s. Schedule 5 - 7; dispose into a green metal pharmaceutical container. A register to be kept detailing contents/ items disposed into container Storage period: maximum 90 days 	<ul style="list-style-type: none"> All cytotoxic items and medication e.g. contaminated material from cytotoxic drug preparation and administration Container must be marked "CYTOTOXIC WASTE" & bear the cytotoxic hazard sign

Before collection by service provider HCRW containers MUST BE MARKED i.e.:

- name of hospital / clinic,
- date in,
- date out

ALL HCRW BECOMING A NUISANCE (BAD ODOURS, PESTS), TO BE REMOVED WITHIN 24 HOURS

Waste Management

Tools, materials & equipment



- Various types of HCRW Containers for the different categories of HCRW ,as per the above
- Red plastic bags/ liners – to be placed inside the infectious waste & anatomical waste containers
- Cable-ties – for closing of red plastic bags/ liners
- Adhesive tape – for closing of infectious waste boxes/containers
- Mattress liners – for use/sealing of contaminated mattresses
- Sharps brackets (wall mounted or trolley mounted) – for the securing of sharps containers
- No HCRW container must be filled beyond the "maximum fill –line" indicated on each HCRW container
- Infectious waste and anatomical waste containers **MUST** be fitted with a red plastic liner/bag before being used

Safety warnings

WASTE SEGREGATION

- ❑ Segregation refers to the basic separation of different categories of waste generated at source and thereby reducing the risks as well as cost of handling and disposal. Segregation is the most crucial step in bio-medical waste management.
- ❑ Health care risk waste must be segregated in accordance with SANS 10248 -1.



WASTE HANDLING

- ❑ Health care personnel could significantly reduce disease risk by ensuring that medical waste is placed into the proper containers and that the facility uses a reputable medical waste disposal company to pick up and treat the waste.
- ❑ “internal transport” means the movement of health care risk waste from one point within any premises or facility to another point within those premises or facility;
- ❑ Requirements for internal transport -cause risk or harm to any person, A wheeled health care risk waste container, trolley or cart must be easy to load,
- ❑ Storage in a correct health care risk container.
- ❑ Pathological waste, should not exceed 72 hours unrefrigerated, not exceed 1 week if stored at 4°C and not exceed 90 days, unless it is stored at a temperature below 2°C;

WASTE TREATMENT AND DISPOSAL

- ❑ A treater may only receive health care risk waste from a registered generator or transporter.
- ❑ A treatment facility must comply with all of the performance testing requirements as set out in the National Environmental Management: Air Quality Act, 2004 (Act 39 of 2004)
- ❑ The primary **methods** of treatment and **disposal** of medical **waste** are:
 - Incineration.
 - Autoclaves.
 - Mechanical/Chemical Disinfection.

RECORD KEEPING

- ❑ The records that must be maintained in terms of section 6(2)(j) of the Act must at least show the monthly total mass of the health care risk waste generated, transported, treated or disposed of.
- ❑ A generator, transporter, treater or disposer must submit copies of their health care risk waste records to the Department monthly upon request, unless otherwise specified.
- ❑ All generators, transporters, treaters or disposers must keep independent records for a minimum of three years.

TRAINING

- A generator, transporter, treater or disposer of health care risk waste must provide training for all personnel in his, her or its employ who are involved in the management of health care risk waste to ensure that the following principles and practices are understood and implemented—
 - (a) health care risk waste segregation;
 - (b) best infection control practices, including emergency procedures; (spill)
 - (c) waste minimization
 - (d) improved environmental awareness.

SUPERVISION AND MOTORING

- ❑ The Environmental Health Practitioner of the municipal area/district must conduct routine inspections and environmental health investigations at the health establishments under the Act.
- ❑ EHPs/HCWOs monitors waste management activities.
- ❑ Records are kept and inspection reports with recommendations are provided to the person in charge of the premises after every inspection.

ENVIRONMENTAL LEGISLATION

Section 24 of the Constitution of the RSA (Act 108 of 1996) states that the people of South Africa have a right to an environment that is not detrimental to human health, and imposes a duty on the state to promulgate legislation and to implement policies to ensure that it is upheld.

PUBLIC HEALTH AND SAFETY

- ❑ Illegal dumping may be a health and safety hazard. The dumping of harmful materials/substances may cause death or injury to people e.g. infected needles, contaminated bandages etc.
- ❑ Dumping HCRW negatively affects our natural environment by seeping into water resources and soil, contaminating the water we drink and the soil we require for the growth of our food.
- ❑ Illegal dumping is a criminal offence and must be reported to the responsible authority immediately.
- ❑ Penalty up to R15 million or 10 years imprisonment

LEGISLATION REGARDING WASTE:

- ❑ Western Cape Health Care Risk Waste Management Regulations, 2013
- ❑ National Environmental Management: Waste Act, 2008 (Waste Act)
- ❑ Health Care waste management Act, Act 7 of 2007
- ❑ National Environmental Management Act, 1998 (NEMA)
- ❑ The Occupational Health and Safety Act, no 85 of 1993(section 8/1)
- ❑ The Environmental Conservation Act, no 73 of 1989
- ❑ Hazardous Substances Act, no 15 of 1973
- ❑ Atmospheric Pollution Prevention Act, no 45 of 1965
- ❑ National Health Act, no 61 of 2003
- ❑ Human Tissue Act, no 65 of 1983
- ❑ Health Care Waste in accordance to powers vested by Section 14 of the Health Care Waste Management Act of 2005.

WHO INVESTIGATES ENVIRONMENTAL CRIMES?

- The **Green Scorpions** are Environmental Management Inspectors (EMIs). They are officials from various national, provincial and municipal government departments designated by the Minister or MEC to monitor compliance with and enforce Environmental Legislation.



WAY FORWARD



ADVANTAGES OF RECYCLING

- ❑ Recycling is a very good to way to save some money, conserves energy and help to save earth from pollution. Reduce pollution and give us the fresh air to breathe.

CONCLUSION

- ❑ Management of Healthcare Waste management is therefore a process that starts from the time medical waste is generated right up to the final disposal. It is the responsibility of generators, transporters, treaters and disposers to comply by the requirements as set out in the Healthcare Waste Management Act, Act 7 of 2007 to prevent any harm to be caused to humans and the environment.

ACKNOWLEDGEMENTS

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- ❑ **WESTERN CAPE HEALTH CARE WASTE MANAGEMENT ACT, 2007 (ACT 7 OF 2007) Annexure in terms of section 14 of the Western**
- ❑ **WHO, 2018. Healthcare waste.**