



**HEALTH**

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ENVIRONMENTAL HEALTH MANAGERS

**POLICY FOR KWAZULU-NATAL: HEALTH CARE RISK WASTE  
MANAGEMENT**

1. Attached is a policy document on health care risk waste management and disposal in the KwaZulu-Natal Department of Health for immediate implementation.
2. Kindly ensure that the contents of the policy are brought to the attention of all staff concerned.

*for*   
HEAD: DEPARTMENT OF DEPARTMENT  
KWAZULU-NATAL

# Department of Health



**HEALTH**  
KwaZulu-Natal

## Health Care Risk Waste Management Policy for KwaZulu-Natal Province

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## Definitions

In this Policy, a word or expression derived from a word or expression defined hereunder has a corresponding meaning unless the context indicates that another meaning is intended,

**“Authorization”** refers to authorization in terms of the Environment Conservation Act;

**“Constitution”** means the Constitution of the Republic of South Africa, 1996 (Act No. 108 of 1996);

**“contingency plan”** means a process of planning ahead for an event which may, or may not, occur; whereby scenarios and objectives are agreed, managerial and technical actions defined, and potential response systems put in place to prevent or respond effectively to an emergency or unforeseen circumstances;

**“Department”** refers to the KwaZulu-Natal provincial Department of Health;

**“disposal”** means the burial, deposit, discharge, abandoning, dumping, placing or release of any waste into, or onto the environment;

**“environment”** means environment as defined in Section 1 of the National Environmental Management Act;

**“Environment Conservation Act”** means the Environment Conservation Act, 1989 (Act No.73 of 1989);

**“environmentally sound management”** means the taking of all practicable steps to ensure that health care risk waste is managed in a manner that will protect public health and the environment;

**“hazardous waste”** means any waste that may, by circumstances of use, quantity, concentration or inherent physical, chemical or toxicological characteristics, have a significant adverse effect on public health and the environment;

**“hazchem”** means hazardous chemical information system used so that in the event of an accident the emergency services will be aware of the correct action to take in order to minimise risk to people and property,

**“Health Act”** means the National Health Act, 2003 (Act 63 of 2003);

**“health care general waste”** means waste that does not pose an immediate hazard or threat to human health and the environment and is similar to, and should be managed as, the municipal solid waste;

**“health care risk waste”** sometimes referred to biohazardous waste or medical waste includes infectious waste, sharps, anatomical or pathological waste, hazardous chemical waste, genotoxic and cytotoxic waste, pharmaceutical waste, and radioactive waste; and any other waste that poses a risk to public health or the environment;

**“MEC”** means the Member of the Executive Council of the Province of KwaZulu-Natal who is responsible health;

**“ National Environmental Management Act”** means the National Environmental Management Act, 1998 (Act No. 107 of 1998), as amended;

**“pollution”** means pollution as defined in Section 1 of the National Environmental Management Act;

**“public health establishment”** means public health establishment as defined in section 1 of the National Health Act, 2003 (Act 63 of 2003);

**“receptacles”** means disposable or reusable vessel in which waste is placed for handling, transportation, storage or eventual treatment or disposal;

**“recovery”** means the controlled extraction or retrieval of energy from waste;

**“recycle”** means to separate and process material from waste for further use as new products or resources;

**“re-use”** means to utilize articles from the waste stream again for a similar or different purpose without changing the form or properties of the articles;

**“service provider”** means an institution, agency or company that has been awarded a contract to provide health care risk waste management services in the Province of Kwazulu-Natal; service provision has a corresponding meaning;

**“storage”** means placement of waste in a suitable location or facility where isolation, environmental and health protection, and human control are effected with the intention that the waste will be subsequently retrieved for treatment or disposal;

**“treatment”** means any method, technique or process that is designed to change the physical, biological or chemical character or composition of a waste, or to remove, separate, concentrate or recover a hazardous or toxic component of a waste or to destroy or reduce the toxicity of the waste in order to minimise the impact of the waste on the environment;

**“waste”** means waste as defined in Section 1 of the National Environmental Management Act;

**“waste disposal facility”** means any site or premises used for the accumulation of waste with the purpose of disposing of that waste at that site or on those premises;

**“waste management”** means measures, including the avoidance of the generation of waste, that are necessary to prevent or, where prevention is not possible, minimize the amount of waste that is produced and the risk posed by waste to public health and the environment. These measures are applied from the source of waste generation to the ultimate disposal of health care risk waste;

**“waste treatment facility”** means any facility that does treatment of waste.

# **1. INTRODUCTION TO THE HEALTH CARE RISK WASTE MANAGEMENT POLICY**

## **1.1 Background to the Health Care Risk Waste Management Policy**

Health care waste is a combination of health care general waste (similar to municipal solid waste) and health care risk waste, which is the hazardous component of health care waste. Historically, incineration had been a method of treatment and destruction of all health care risk waste. The global environmental pressure against incineration has been steadily mounting due to the incinerators giving rise to health and environmental pollution risk in air emissions with release of particulates, dioxins, furans and heavy metals which are extremely hazardous. The incineration of health care risk waste was phased out in 2003 by the Department in favour of alternative technology to incineration. The last incinerator utilized by the health care risk waste management and disposal contractor for the treatment of pathological and pharmaceutical waste finally stopped operating on 28 February 2006.

The current, all-inclusive service provider package for health care risk waste management in the Province provided by a contractor entails; supply of containers, off site transportation, treatment at an autoclave waste treatment Plant in Westmead of health care risk waste and disposal of treatment residue at the Marianhill landfill site. The contractor services all health institutions and other health care facilities of the Department. The autoclave waste treatment Plant cannot adequately treat pathological and pharmaceutical waste. This waste stream is transported to an incineration facility in Gauteng for treatment and final disposal. The incineration facility in Gauteng was found to be in violation of certain permit and operation conditions when the Gauteng Environmental Management Inspectors conducted a special investigative and enforcement visit to it in April 2007.

This situation does not bode well with the Department, as the generator of health care waste, and requires urgent attention. Waste generators are mandated, in terms of section 2 (4) (e) of the National Environmental Management Act, to carry the responsibility of the ultimate fate of the generated waste. This Act also puts the responsibility to pay for the cost of remedying pollution, environmental degradation and consequent adverse health effects on those responsible for harming the environment. Also, the proximity principle requires that hazardous waste be treated and disposed of as close as possible to its source of generation. Essentially, this policy will use these guiding principles in addressing problems and providing policy guidelines for the Department's health care waste management responsibilities.

## **1.2 Policy and Legislative Context for Health Care Risk Waste Management**

The following legislation, standards and policy documents give guidance to the provisions of this Policy. A detailed outline of each of these documents is attaches as Annexure I to this Policy.

The Constitution of the Republic of South Africa, 1996 (Act 106 of 1996)  
The National Environmental Management Act, 1998 (Act 107 of 1998)  
Environment Conservation Act, 1989 (Act 73 of 1989)  
Hazardous Substances Act, 1973 (Act 15 of 1973)  
Human Tissue Act, 1983 (Act 65 of 1983)  
National Health Act, 2003 (Act 63 of 2003)  
National Road Traffic Act, 1996 (Act 83 of 1996)

Medicines and Related Substances Control Act, 1965 (Act 101 of 1965)

Occupational Health and Safety Act, 1993 (Act 85 of 1993)

National Waste Management Strategy

South African Bureau of Standards Codes of Practice

- SANS Code 10231: 2006: Transport of dangerous Road Operational requirements for road vehicles.
- SANS 10232-1:2007: Transport of dangerous goods-Emergency Information systems for road transport.
- SANS 10232-3:2007: Transport of dangerous goods-Emergency response guides
- Annexure A of SABS 0232-3: Emergency Response Hand Book.
- SANS 1518:2005: Transport of dangerous goods Design requirements for road vehicles and portable tanks.
- A significant proportion of health care risk waste falls into class 6 of SANS 10228: 2006 and SANS 10248: 2004.

Internationally, the multilateral environmental agreements of which South Africa is signatory to are:

- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.
- Stockholm Convention on Persistent Organic Pollutants.
- Rotterdam Convention on the Prior Informed Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.

## **2. SCOPE**

- i. This Policy lays down provisions for safe and effective management of health care risk waste from generation to disposal in order to reduce risk to human health and the environment.
- ii. The details for the management of health care general waste are not covered in this Policy, as it is considered to be similar to general municipal solid waste after proper segregation at the source.

## **3. APPLICABILITY**

This Policy applies to all public health establishments within KwaZulu-Natal administration and all health care risk waste service providers contracted by the Department. Management of pharmaceutical waste will be in terms of this Policy, in addition to the Policy and Procedures for the Disposal of Pharmaceutical Waste (attached as Annexure II).

## **4. PURPOSE**

The purpose is to achieve proper control and effective management of the flow of health care waste, with particular emphasis on health care risk waste, from the point of generation to the point of final disposal through:

- i. appropriate waste prevention and minimization
- ii. efficient waste segregation
- iii. proper waste identification
- iv. appropriate storage
- v. compliant transportation
- vi. efficient treatment

- vii. proper and safe disposal of treatment residue
- viii. good record keeping and reporting system
- ix. efficient and effective contract management

This therefore means that this Policy is aimed at improving the standard of health care risk waste management and disposal for all the public health establishments.

## **5. OBJECTIVES**

The objectives of the Policy are to:

- strengthen current institutional frameworks for health care risk waste management and disposal;
- provide direction, clarification and allocation of roles and responsibilities for the institutional frameworks;
- improve the standard of health care risk waste management and disposal for all public health establishments in KwaZulu-Natal;
- prevent pollution, and promote waste minimization at the source of generation; promote reduction and remediation; and
- give special attention to public health and occupational issues in all health care risk waste management practices.

## **6. THE POLICY FORMULATION PROCESS**

The consultation with a wide range of stakeholders supported by literature review guided identification of policy context and direction and highlighted the importance of the following issues:

- (i) Improvement of health care risk waste management at public health establishments.
- (ii) Strengthening of institutional arrangements at health establishment, health district and provincial levels to ensure proper health care risk waste management.
- (iii) Need for policy framework that will provide consistency and uniformity of procedures for all public health establishments.
- (iv) Proper and adequate training of health care workers and other waste handlers.

## **7. CATEGORIES OF HEALTH CARE WASTE**

### **7.1 Health Care General Waste**

Health care general waste is not extensively covered in this Policy, as it is considered to be similar to municipal solid waste. Health care general waste is the non-hazardous component of health care waste stream from health care facilities that includes same waste material as domestic waste. It is generated during the administrative and house keeping functions of public health care establishments as well as from patients and visitors, and it include the following types of waste:

- Packaging materials: includes cardboard boxes, plastic bags, clean packaging from needles, syringes and IV lines.
- Kitchen waste: includes organic waste and packaging material.
- Office waste: mostly papers.
- Other solid waste generated from patients wards. This waste is similar to household waste.



- Garden waste: organic waste from gardening activities.
- Building and demolition waste: from construction and renovation activities.

Once segregated correctly at the health care facilities, this waste will be managed the same as other general waste.

## **7.2 Health Care Risk Waste**

Health care risk waste is the hazardous component of health care waste generated at both large and small health care facilities. Health care risk waste has the potential for creating a number of environmental, health and safety risks, depending on the particular type of health care risk waste that is handled as well as the way in which exposure takes place.

Health care risk waste categories include:

- Infectious waste: all kinds of waste likely to contain pathogenic micro organisms
- Pathological waste: includes parts that are sectioned from a human body
- Sharps: includes needles, sharps and pricking objects that may cause injury as well as infection.
- Chemical waste: includes all kinds of discarded chemicals, including pharmaceuticals that pose a special risk to human health and the environment.
- Radioactive waste: includes solid, liquid and gaseous waste contaminated with radio nuclides.

## **8. MINIMUM REQUIREMENTS FOR HEALTH CARE RISK WASTE MANAGEMENT**

The minimum requirements are set below for the key activities involved in health care risk waste management functions. The requirements set out apply together with national requirements and guidelines, which include the latest edition of the Minimum Requirements for the Handling, Classification and Disposal of Hazardous Waste.

### **8.1 Requirements for the use of Treatment Technologies**

- The overall minimum requirements shall apply:
  - Only authorized treatment facilities shall be used which comply with the environmental impact assessment (EIA) requirements and for which authorization has been granted.
  - Certificate of compliance with regulating requirements by the treatment plants must be provided at the time of application for service provision.
  - Reliability of the treatment facility technology and ability to meet treatment capacity demands must be confirmed in writing.
  - There must be a contingency plan for back up plant that is also proven to be environmentally compliant and available in the event of breakdown and maintenance.
  - Suitable arrangements must be made to ensure immediate access to service personnel and replacement units and/or other contingency plans when the treatment plant is out for planned or unplanned maintenance and/or repair. This information and other back up treatment arrangements must be provided, in details during the application for service provision.
  - When using treatment technology, the service provider must provide details of the methods to be used and the facility to be used for treatment of pathological,

- pharmaceutical and chemical waste, with details of back up arrangements in the event of plant unavailability.
- vii. It is required that periodic documentation of the treatment efficiency and environmental performance of the treatment facility be made available at least twice per annum by an independent body.
  - viii. A method of documenting proper treatment for each consignment must be proposed by the service provider.
  - ix. After treatment the residues shall not be easily recognisable as being health care risk waste and should be disposed of according to its hazard rating at a landfill designed specifically for the disposal of hazardous waste and legally permitted in terms of the Environment Conservation Act.
  - x. The service provider shall be required to provide details of the landfill that will receive residues from the treatment facility and the compliance status of that landfill in terms of the acceptance criteria for the residue in relation to the landfill site permit.
- (b) Treatment of health care risk waste using incineration treatment technology is prohibited in Kwazulu-Natal

## **8.2 Requirements for Occupational Health and Safety**

This Policy does not aim to establish comprehensive occupational health and safety standards, as relevant standards and principles have been established in the Occupational Health and Safety Act, 1993 (Act 85 of 1993). However, the following issues are deemed to be of particular importance in relation to health care risk waste management and must be incorporated in the management of health care risk waste.

- i. Essential occupational health and safety measures include the following:
  - (a) continuous training of health care workers,
  - (b) provision of proper equipment and clothing for workers' protection,
  - (c) the establishment of effective occupational health system that includes the immunisation, post exposure treatment and medical surveillance.
- ii. Workers protection and risk assessment must include identification of risks to employees, involved in handling of potentially hazardous health care waste, and provision of suitable protection measures. The design of the measures must focus on the prevention of workers exposure or an exposure within safe limits and training on the risks must be provided to workers on a regular basis.
- iii. It is imperative that health care waste collectors wear heavy duty gloves and industrial boots. The thick soles of the boots offer protection for workers in the waste storage areas and will serve as a protection against potential needle pricks to the feet and legs as well as prevent slipping on wet floors. The same protection against needle pricks to the hands must be offered by wearing the heavy duty gloves.
- iv. Washing facilities with warm water and soap must be available for personnel to practise basic personal hygiene. The protective gear needs to be disinfected and cleaned on a regular basis.
- v. Waste collectors and other health care workers must be given immunization against the potential infection from hepatitis B virus as well as other injections deemed necessary.
- vi. For clearing up spillage of body fluids and other potential hazardous substances, in addition to gloves and overalls, eye protectors and masks must be worn. Respirators, i.e. gas masks are needed if any activity is considered extremely dangerous, involving toxic dust, chemical reagent, the cleaning of contaminated equipment, etc. Residue must be

covered as completely as possible using hand tools and then packed safely. If a leakage or spillage involves infectious material, the floor must be cleaned and disinfected after the waste has been recovered.

- vii. The health establishment must prescribe a programme that is developed with recommended steps of action that must be taken in the event of injury or exposure to a hazardous substance. The minimum requirements of this programme are the following:
- immediate first aid measures,
  - an immediate report to the designated authority,
  - retention of the item involved in the accident (identification of source and substance must ensure that proper infection and remedial measures are immediately identified and effected),
  - medical attention must be carried out immediately,
  - medical surveillance,
  - blood or other tests if necessary,
  - record of the incident,
  - detailed investigation of incident, identification and implementation of remedial action to prevent similar incident in the future.
- viii. Health care workers must report accidents or incidents that include spillages, inappropriate segregation, damaged containers and any incidents involving sharps. The report must include details of the following;
- nature of the incidents,
  - place and time of incident,
  - staff who are directly involved and affected,
  - any other relevant information.

### **8.3 Requirements for Receptacles, Internal and External Collection, Storage and Transport**

#### **8.3.1 Receptacles**

Annexure III presents the different types of receptacles that are used in the health care waste management field for the various categories of waste.

- i. It is required that use is made of the most environmentally friendly simple receptacles of suitable size, designated to minimise risk of spillage, leakage or needle stick injuries,
- ii. One of the key requirements for successful management of health care risk waste is efficient segregation of waste at the source, using purpose made, safe and convenient receptacles,
- iii. For each of the categories of health care risk waste there must be a clearly distinguished receptacle, and all staff must be able to recognize the appropriate container for each particular type of waste,
- iv. The required system is to use the appropriate colour codings as recommended by the SANS 10248: 2004 and training of staff to associate colour codings with appropriate categories of health care risk waste is essential,
- v. Each receptacle must be clearly labelled to show the ward or room where it is used and supervisors must be vigilant to ensure that all bags are labelled. The reason for the labelling is that it is necessary to be able to trace the waste back to its source,

- vi. Labelling of receptacles with the correct name and description of the contents is also essential in order to:
  - ensure the correct emergency action in case of an accident,
  - ensure that the appropriate treatment and disposal methods are being used by the disposal contractor or service provider,
  - correctly identify the material for the purpose of recycling or recovery,
- vii. SABS approved receptacles must be manufactured from materials that can with-stand the physical methods used for the handling and the transportation of the receptacles,
- viii. The receptacle of proper size for sharps shall be rigid, puncture proof and tamper proof and shall be available for each ward or department,
- ix. It is important to assess the need for particular health care risk waste receptacles to ensure that particular needs, as indicated below, are met:
  - range of sharps receptacles accommodating differences in volumes and types of health care risk waste being generated in particular wards and departments,
  - range of pathological waste receptacles accommodating for differences in volumes and types being generated in particular wards and departments,
  - specialised receptacles for use in renal dialysis departments,
  - particular receptacles for use in operating theatres,
  - specialised receptacles for laboratory waste such as chemicals, blood products, discarded blood bags and specimens,
  - specialised receptacles such as sputum cups for TB wards, nappy and incontinence receptacles,
  - receptacles suitable for isolation wards.

### **8.3.2 Internal and External Collection**

- (a) Robust segregation practices must be implemented at the point of generation to ensure that different categories of health care risk waste go into the correct waste streams.
- (b) Health care risk waste must be accumulated at the point of generation as it gets generated and must not be allowed to lie around for any length of time.
- (c) Preparation and placement of applicable health care waste receptacles must take place in wards.
- (d) Different categories of health care risk waste must be collected in appropriate receptacles and full receptacles must be properly sealed and recommendations of the SANS 10248: 2004 must be strictly adhered to.
- (e) Sealed receptacles must be transported to temporary secure storage areas.
- (f) Radio active waste, cytotoxic waste, pharmaceutical and chemical waste, each requires special handling and disposal channel as their treatment is different from the other categories of health care risk waste. Special protocol for radio active waste must be followed including special secure intermediate storage for decay and dedicated secure disposal.
- (g) Pathological waste and pharmaceutical/chemical waste must be suitably containerised and labelled for appropriate special treatment by suitable technology and provisions of Medicines and Related Substances Control Act, 1965 (Act 101 of 1965), sections 27 and 26 of the Regulations promulgated under this Act, and the KZN Policy and Procedures for the Disposal of Pharmaceutical Waste must also be adhered to.

### **8.3.3 Storage**

- (a) Each public health establishment must have at least one dedicated central health care risk waste storage area serving as an interface from where the service provider collects health care risk waste for off-site storage and/or treatment. The operation of this dedicated storage area must comply to the provisions of the Minimum Requirements for the Handling, Classification and Disposal of Hazardous Waste, in terms of volume of waste stored and period of storage.
- (b) A temporary storage area must have a firm, water proof base and drainage system and it must be designed and managed in such a way that there is no escape of contaminants into the environment.
- (c) The area must be clearly demarcated and must not be accessible to unauthorized persons, with notice board in official languages at every entrance of the storage area with the words to the effect that it houses hazardous waste and unauthorized entry is prohibited.
- (d) The dedicated storage area must also meet the following requirements:
  - i. be well ventilated,
  - ii. be well illuminated,
  - iii. be lockable and secure,
  - iv. have access to wash hand basin, soap and towel, ,
  - v. be accessible by trolleys from ground level or over ramps
  - vi. be kept clear of vermin and other vectors,
  - vii. be equipped with a fire extinguisher,
  - viii. have clear signage at the entrance that indicates the contents of the room, the contact details of the responsible person as well as contact details for use in the event of an emergency, and
  - ix. be equipped with weighing facilities.
- (e) In determining the storage volume adequate allowance must be made for back-up in the event of a sudden increase in the health care risk waste generation rate or alternatively a temporary breakdown in the health care risk waste collection.
- (f) Suitable size of dedicated storage areas for the different health care facilities is recommended as hereunder:

<b>Type of health care facility</b>	<b>Size of storage area</b>
1. Regional Hospitals	20-36m <sup>2</sup>
2. District Hospitals	15-24m <sup>2</sup>
3. Community Health Centre	9-15m <sup>2</sup>
4. Clinics	5-15m <sup>2</sup>

- (g) The arrangement of receptacles during storage shall be as follows:
  - i. Health care risk waste receptacles must be stacked to a maximum height of 3 boxes or 1.8 m whichever is the lowest,
  - ii. Sharps receptacles must be stacked in a configuration that will prevent them from collapsing,
  - iii. Wheelie bins must not be stacked at all,
  - iv. High density health care risk waste such as blood or pathological waste in specicans must not be stacked at all,
  - v. Health care risk waste receptacles must always remain in the upright position

- vi. As most health care risk waste contains biodegradable materials the packaging must be tight and the storage time limited,
- vii. Cleaning of the storage area must be carried out daily using a suitable disinfectant and clean receptacles kept inside the stores must be protected from dust and rodent droppings,
- viii. A spill kit containing the necessary equipment to clean up spills of sharps, broken bottles, blood or infectious health care risk waste from split bags, etc must be provided at the central storage areas. The transporters and storage attendants must be trained to clear up spills and disinfect contaminated areas. A supply of cleaning equipment, protective clothing and waste bags or receptacles must be located conveniently close to the storage area,
- ix. All pathological waste as well as other health care risk waste where required, due to climatic conditions or extended storage periods, must be cooled or refrigerated or possible use of morgue or mortuary for cooling down of pathological waste must be considered.
- x. The floor of the storage area must be kept dry at all times, hard-standing and impermeable with a floor drain and water supply as part of a wash facility.

#### **8.3.4 Transport**

- (a) Frequency of collection and transportation of health care risk waste from health establishments must be as follows:
  - i. Infectious waste: One to three times per week depending on volumes and less frequently if volumes are small and odour problems can be eliminated by adequate combination of containerisation, refrigeration, cooling and ventilation.
  - ii. Pathological waste: Daily removal if no refrigeration to avoid odour problems and periodical removal of refrigerated pathological waste.
  - iii. Sharps: Removal of filled and sealed sharps receptacles should be at the same time as removal of general infectious waste.
  - iv. Pharmaceutical and chemical waste: Periodic removal of accumulated waste should take place when sufficient volumes have been reached.
- (b) Vehicles must be specifically designed to transport health care risk waste and must be equipped with Geotab tracking devices, which produce comprehensive logistical data on the vehicle movements.
- (c) The vehicles must also be fitted with anti-hijacking and satellite tracking systems and each vehicle must be equipped with an emergency spill kit.
- (d) The internal finishing of the vehicles must be smooth and rust free and allow for easy cleaning and the internal angles be rounded.
- (e) The international hazard sign must be displayed on the health care risk waste vehicles or containers as well as type of cargo and contractor's contact details.
- (f) Contingency plan for back up vehicles must be available to ensure uninterrupted service in the event of breakdown.
- (g) Drivers must be trained in Hazchem programme and also trained in the correct handling of health care risk waste and emergency procedures (refer to Annexure A of SABS 0232-3).
- (h) The objectives of the transportation of hazardous waste are to:
  - i. ensure the current packaging, temporary storage and collection of waste prior to transportation, so as to prevent accidental spillage into the environment and minimise impact should a spillage occur,

- ii. ensure that hazardous waste is never lost and this must be achieved by use of a system of documentation or a manifest system,
  - iii. ensure that the waste arrives safely at a permitted facility,
  - iv. ensure that emergency procedures are in place before an accident occurs and that the hazardous waste is correctly marked so as to aid the emergency team.
- (i) The requirement of the transportation of hazardous waste relates to the duty of care principle. This places responsibility for the waste on the generator and is supported by the cradle to grave principle, according to which a manifest accompanies each load of hazardous waste until it is responsibly and legally disposed of. Once the waste is properly disposed of at the suitable, permitted facility, copy of the manifest must be returned to the point of origin.

## **9. ROLES, RESPONSIBILITIES AND MANAGEMENT LIABILITY**

- (a) Appropriate frameworks and mechanisms at health establishment, district and provincial levels should be established to facilitate communication and consultation with all the relevant role-players for proper planning, implementation, monitoring and evaluation of health care risk waste management and disposal, throughout its life cycle – Annexure IV present the life cycle of health care risk waste,
- (b) In cases where mechanisms or structures are already in existence, they need to be formalised, in accordance to this Policy, and strengthened in order to ensure that their performance is of an acceptable standard and meets the need of the Department,
- (c) The structures must have clear terms of reference, based on this Policy framework, which must provide good health care risk waste management practices and strict adherence to the relevant national legislative provisions and any other regulatory requirements of the provincial and local governments.

### **9.1 Public health establishment level**

- (a) The heads of the public health establishments retain the overall responsibility for ensuring that the management of health care risk waste is in accordance with the relevant national legislative provisions and any other regulatory requirements of the provincial and local spheres of government. They must officially appoint in writing members of the waste management committee and must ensure the following:
  - development and implementation of a health care risk waste management plan(s), (Annexure V provides a template for the development of a health care risk waste management plan)
  - inclusion of the responsibility for health care risk waste management and disposal in job descriptions, work plans and performance agreement of each member of the waste management committee,
  - provision of adequate support and sufficient resources, both human and material, for effective health care risk waste management.
- (b) The composition of these waste management committees at a public health care establishment level must have representation of senior officials from the following key categories or components;
  - Public health establishment systems Management
  - Quality Assurance Management

- Infection Prevention and Control
- Medical Management
- Nursing Management
- EMRS Management
- Pharmacy Management
- Laboratory Management
- Occupational Health and Safety Management
- Forensic Mortuary Management
- Environmental Health Management

**NB:** Appointment of members of the committee from components not on the staff establishment of the public health establishment must be made in consultation with the respective health district office. The leadership responsibility to coordinate the activities of the committee must be attached to the official in the above list who has overall responsibility for health care waste of the health establishment in terms of his/her job description.

- (c) The terms of reference of the waste management committees shall include the following:
- develop and implement health care risk waste management plan,
  - communicate the plan to all persons involved in health care risk waste management and disposal, patients and visitors,
  - monitor and review implementation of the plan,
  - formulate and implement training programme that is specific to the needs and environment of the health establishment,
  - liaise with the management of the health establishment regarding financial implications of the plan,
  - commission research and evaluate its findings to optimise waste management operations,
  - provide support towards waste prevention and minimisation,
  - collect, collate, interpret and submit information on health care risk waste management and disposal to the district.

## 9.2 District level

- (a) Each District must establish a district waste management committee, which must have representation of senior officials from the following components:
- Quality Assurance Management
  - Occupational Health Management
  - Pharmacy Management
  - Emergency Medical Rescue Services Management
  - Forensic Services Management
  - Environmental Health Management
  - District Health System Management
  - Infection Prevention and Control
  - District Health Management
  - Chief Works Inspector
- (b) The terms of reference of the district waste management structures or committees must include the following:



- Develop and implement waste management plan(s) that facilitates planning at health establishment and district municipality levels,
  - Communicate the plan(s) to all persons involved in health care risk waste management and disposal, patients, visitors and the public,
  - Monitor and evaluate implementation of and compliance to the plan(s),
  - Formulate and implement training programmes that are specific to the needs and environment of the district,
  - Consult with heads of the public health establishments regarding the financial implications of the plan(s),
  - Fund research so as to optimise health care risk waste management operations,
  - Collect, collate, interpret and submit information to the Province and provide feedback to facilities and district municipalities,
  - Cascade information from provincial and national levels to health establishments.
- (c) The district management must officially appoint in writing members of the district waste management committee and must ensure the following:
- inclusion of the responsibilities for health care risk waste management in job descriptions, work plans and performance agreements of each members of the waste management committee, and
  - provision of adequate support and conducive environment for the waste management committee to optimally deliver on the terms of reference.

### **9.3 Provincial level**

- (a) The Province must establish a provincial waste management committee which must have representation of senior officials from the following key components and Departments:
- Monitoring and Evaluation, Environmental Health, Quality Assurance, Infection Control, Occupational Health and Safety, Infrastructure Development, Supply Chain Management and Pharmaceutical Services in the Department of Health,
  - Waste Water Quality Management of the Department of Water Affairs and Forestry,
  - Pollution Control and Waste Management of the Department of Agriculture and Environmental Affairs,
  - Relevant NGOs and professional associations.
- (b) The terms of reference of the provincial waste management committee must include the following:
- Review provincial health care risk waste management policy annually and when necessary,
  - Formulate and implement provincial training programmes,
  - Monitor and evaluate the implementation of the health care risk waste management policy in the Province.
  - Cascade information from national government to district waste management committees,
  - Provide adequate technical support to the districts.

### **9.4 Department of Health in general**

- (a) The Department, as a generator of health care risk waste, is legally responsible and liable for the management of health care risk waste from generation to disposal,
- (b) The Department must, at all times, ensure environmentally sound management of health care risk waste,
- (c) The Department must ensure cooperative governance and implement the waste management hierarchy which emphasizes waste avoidance and minimization as key in managing waste, and develop strategies as outlined in the National Waste Management Strategy,
- (d) In managing health care risk waste, the Department must comply with environmental management principles outlined in section 2 of the National Environmental Management Act.

## **10. PLANNING, BUDGETING AND CONTRACT MANAGEMENT**

- a) Advance planning is required before the process of procuring the services of health care risk waste management is initiated. The process to be undertaken includes the following.
  - i. Before any request for service providers is published it is important that:
    - The required scope of service is well described and confirmed with key stakeholders,
    - The health care risk waste quantities are reliably estimated,
    - A reliable pre-bid estimate for the value of the contract is prepared to serve as a guide during the evaluation of proposals.
  - ii. It is important to have reliable data on both healthcare risk waste and the healthcare general waste generation preferably by mass. Reliable data on the mass of health care risk waste and health care general waste provides an excellent measure of the segregation efficiency and monitoring of improvement or deterioration of the waste segregation efficiency over time.
  - iii. The main focus of scope of contract must be in supply of receptacles or containers, transportation and treatment expanded to final disposal of treatment residues and training and awareness programme.
- b) The possible options for outsourcing health care risk waste management and disposal services and their implications include the following:
  - i. All inclusive contract package or several individual contracts, i.e. different supplies and sources split into different tender packages, e.g. separate supply of receptacles, transportation and treatment.
  - ii. In general the fewer contracts to manage the less administration and responsibility by the contract holder for interface problems between different contract packages.
  - iii. Splitting of the service into more contracts will increase the demand for skills and management resource of the Department compared to an all inclusive service as the number of supply and service contracts will need to be managed and poor performance by any service provider may impact on the entire service.
  - iv. However, combining several services into one contract package may also reduce the number of potential bidders and lead to monopoly in health care risk waste management industry.
  - v. There must be, therefore, sufficient service providers available for competitive bidding for bundled services.

- c) Considering the nature of health care risk waste management, liability of the Department as a health care risk waste generator, and the risk associated with mismanagement of health care risk waste, the generic procurement process of health care risk waste management services must be as follows:
- i. Establishment of a tender development group with representation from key stakeholders,
  - ii. Comprehensive needs assessment and consultation process to determine the performance of the current healthcare risk waste management system and the necessary and desirable adjustment,
  - iii. Determination of what is currently available in the market and which of the available options best meet the requirement of the Department,
  - iv. Development of potential scenarios and assessment of the selected scenarios in terms of costs, safety, practicalities, environment, etc.,
  - v. Consultation on the proposed scope of work and bidding process,
  - vi. Decision on the scope of service to be tendered, including the number of packages to be tendered, i.e. an all inclusive tender package or more individually specialised packages, and
  - vii. The writing of a detailed tender specification, including performance criteria, penalties, detailed scope of service, duration of contract, variation of possible options, etc.
- d) It is essential to meet the requirements for health care risk waste management service contract as hereunder:
- i. The advantages of outsourcing health care risk waste management service do not relieve health establishments from their requirements to develop and retain effective contract management and performance monitoring skills to ensure value for money and full accountability for the funds committed to the outsourcing of the service.
  - ii. Contract monitoring and overall performance monitoring are of vital importance in terms of the duty of care, which is making the health care risk waste generator responsible for the cradle-to-grave management of healthcare risk waste.
  - iii. Relevant skills and resources for efficient contract monitoring are essential to provide the necessary contract monitoring. It is therefore necessary to build these skills and critically review the services being rendered in order to develop, operate and maintain efficient and effective health care risk waste management and disposal system.
  - iv. The health care risk waste management service contracts must include particular conditions regarding both the mobilisation of a contract at commencement time as well as demobilisation of service at the end of contract period.

## **11. REQUIRED RESPONSIBILITY FOR MOTIVATION AND TRAINING**

- a) The key to satisfactory management of health care risk waste is:
- the training of all staff concerned with health care risk waste management,
  - motivation of all concerned,
  - proper supervision, and
  - development of an appropriate and sustainable health care risk waste management system.

- b) Good health care risk waste management practices are dependant on the training, motivation and close supervision of the health care workers, who generate health care risk waste.
- c) The human element is more important than technology and training and motivation are therefore both important for the health care risk waste management system to be operated by well trained and well motivated staff to provide more protection of staff, patients and the community.
- d) Motivation must start with the heads of each of the public health establishments who must show by word and example that they believe in the importance of correct health care risk waste management procedures.
- e) Supervision is essential; supervisors must identify further training needs and bring to light carelessness and misconduct. Proper disciplinary measures, in accordance to labour laws and the Public Service Regulations, must be invoked if misconduct or non-compliance is detected.
- f) The heads of each public health establishment must promote a feeling of team spirit and shared responsibility and strengthen the institutional aspects of health care risk waste management.
- g) The allocation of responsibility for health care risk waste management to the generator of waste must encourage the generator to check on the practices and standards of the waste management service providers.
- h) Training requires extra effort when there is high staff turn over and regular refresher courses must be conducted and monitoring carried out to identify the needs for further training.
- i) Training must also cover emergency procedures, such as what action must be taken in the event of a spillage of particular types of health care risk waste, or an injury involving a needle.
- j) The heads of the public health establishments must encourage cleanliness in their establishments. This can be a source of pride and motivation for their health care workers to subconsciously maintain high levels of cleanliness by promoting waste avoidance and proper waste management. It therefore follows that cleaning staff and porters must be given careful training so that they can understand the critical role they must play in health care risk waste management.

## **12. IMPLEMENTATION PLAN**

- (a) The strategy for implementation must conform to the roles and responsibilities assigned in this Policy in section 9. The identified structures that must be developed and strengthened and their terms of reference and required responsibility of motivation and training under section 11 must be implemented with immediate effect.
- (b) The Policy can only be implemented if there is commitment from all the role-players and stakeholders.
- (c) A provincial intensive training programme will be developed and comprehensive training undertaken to all identified health care workers. The train the trainer concept will be the method used to introduce knowledge and supporting change of behaviour at the public health establishments. The training will be conducted in order to:
  - i. Provide the identified health care workers with in-depth knowledge and enhanced skills, in a participatory and practical approach, of the entire spectrum of best health care waste management practices and safe disposal from point of generation to final disposal.
  - ii. Substantially improve the management of health care waste streams by the provincial public health care waste generators which will result in:

- cost effective health care waste minimization and proper waste identification and segregation practices,
  - handling of health care waste in such a way that it poses no threat to the health care workers involved in the management of the waste streams, the public in general and the environment,
  - best practices, improved effectiveness and efficiency of health care waste management.
- iii. Facilitate implementation and universal practical application of this Policy for maximum effectiveness.
- (d) The implementation of the healthcare risk waste management Policy must be carefully balanced against material resource and capacity constraints and it is therefore recommended that commitment to specific time frames be informed by such constraints.
- (e) The main cost drivers for the implementation of this Policy are the outsourcing of the health care risk waste management service and proper training of all relevant health care workers at all the public health establishments in the Province.
- (f) The required resources must be negotiated and an incremental implementation strategy be adopted.

### **13. MONITORING AND EVALUATION ARRANGEMENTS**

- i. Health care risk waste management must be part of public health establishment, district and provincial operational plans, work plans and performance agreements for all the relevant officials who serve on public health establishment, district and provincial waste management committees.
- ii. Inspections must be undertaken at least once every quarter in all public health establishments and inspection reports must be compiled and submitted by environmental health practitioners to district.
- iii. Quarterly submission of information on health care risk waste management will be made by the public health care establishment waste management committees to the districts and by the district waste management committees to the provincial waste management committee, in accordance with the terms of reference.
- iv. For contract management the following reports must be used for monitoring and evaluation.
  - a. Mobilisation report outlining the contract mobilisation plan and mobilisation schedule at the start of the contract period, including interfacing with the clients and past service provider, if any.
  - b. Monthly reporting linked to monthly billing, justifying the billing, documenting volumes and capturing any particular service events and mitigating actions taken.
  - c. Semi-annual or annual reporting in which more analysis is carried out in terms of all overall developments in performance, waste generation and waste segregation efficiencies, price developments, training and awareness needs and activities, service events and actions taken.
  - d. Demobilisation report outlining the handover arrangements and interfacing with clients and future service provider, if any.

## **ANNEXURE I: National and International Policy and Legislative Context for Health Care Risk Waste Management**

1. South Africa is governed by the **Constitution of the Republic of South Africa Act, 1996 (Act 106 of 1996)**. All the government policy initiatives and legislative approaches have to take place within the confines of this constitution. Specifically, Chapter 2 of the Constitution, which is referred to as the Bill of Rights provides guidelines for government policy with respect to the environment. Section 24 of this Bill of Rights states that: "Everyone has the right:

- I.1. to an environment that is not harmful to their health or well being; and
- I.2. to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that:-
  - I.2.1. prevent pollution and ecological degradation;
  - I.2.2. promote conservation; and
  - I.2.3. secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development.

2. **The National Environmental Management Act, 1998 (Act 107 of 1998)** outlines central guiding principles which should be employed in modern day environmental management. The principles of particular interest to waste management are:

- (a) Firstly, focus and efforts should be shifted towards an approach that encourages the combining of waste minimization and waste prevention at source and as a last resort, manage the impact of the waste by treating, destroying and/or disposing of the waste and remediating the polluted environment.
- (b) The duty of care principle requires the generators of waste, under all circumstances, to carry the responsibility of the ultimate fate of the generated waste. The generator of waste is given responsibility to investigate, assess and evaluate the impact of his waste generating activities on the environment and human health.
- (c) The polluter pays principle ensures that the generator of waste accepts the complete financial culpability for the responsible handling, storage transportation and disposal of the waste.
- (d) The precautionary principle requires health care facilities as generators of health care risk waste to assume that all waste generated on their premises is infectious and therefore hazardous until it can be proven otherwise.

The above mentioned principles require health care facilities as generators of health care risk waste to realize that they have a responsibility to society to see to it that all their waste is managed and disposed of in a manner which is responsible, acceptable and environmentally-friendly.

3. **Environment Conservation Act, 1989 (Act 73 of 1989)**. The Department of Water Affairs and Forestry has developed the Minimum Requirements, in terms of this Act, to set environmentally acceptable standards for:

- (i) waste disposal by landfill.
- (ii) the handling, classification and disposal of hazardous waste, and
- (iii) water monitoring at waste management facilities.

4. **Hazardous Substances Act, 1973 (Act 15 of 1973)**. The Act administered by the Department provides for the control of hazardous substances that may cause injury or ill health to or death of human beings by reason of their toxic, corrosive, irritant nature. Section 3 A (i) relates to Group I hazardous substances for which licence is required to produce, acquire, dispose, import or export.

**5. Human Tissue Act, 1983 (Act 65 of 1983)**, repealed by the **National Health Act, 2003 (Act 61 of 2003)**. Section 37(i) provides for the Minister to make regulations regarding the disposal of human bodies and tissue. Chapter 1, section 10 and Chapter 3, section 26, refer to the disposal of bodies of the deceased destitute as well as blood and related substances.

It is important that these matters are properly dealt with to ensure the safety of the environment and the human health.

**6. National Road Traffic Act, 1996 (Act 83 of 1996)**. The National Road Traffic Regulations, promulgated in 2000 under this Act, legislate under Chapter VIII over the transportation of dangerous goods and substances.

**7. Medicines and Related Substances Control Act, 1965 (Act 101 of 1965)**. The Act provides for the control of medicines and scheduled substances with regard to Good Manufacturing Practices in order to combat environmental and associated health hazards. The act also provides for the environmentally sound disposal or destruction of medicines and scheduled substances which have become unfit for use, in terms of Section 27 and 36 of Regulations framed thereunder.

**8. Occupational Health and Safety Act, 1993 (Act 85 of 1993)**. The Act provides for the health and safety of persons at work and for protection against hazards to health and safety arising out of or in connection with the activities of persons at work. The Regulations for hazardous Biological Agents framed under the Act provide for matters connected therewith.

**9. National Waste Management Strategy**. The overall objective of this national policy document is to reduce the generation and environmental impact of all forms of waste, to ensure that the health of the people and the quality of the environmental resources are no longer affected by uncontrolled and uncoordinated waste management.

**10. SABS Codes of Practice**. The primary standards on the management of health care waste is the SANS 10248:2004 which provides the Basic elements of the management of health care waste. The other SABS Code applicable to the transportation of health care waste is covered under Chapter VIII of the National Road Traffic Regulations, 2000.

- SANS Code 10231: 2006: Transport of dangerous Road Operational requirements for road vehicles.
- SANS 10232-1:2007: Transport of dangerous goods-Emergency Information systems for road transport.
- SANS 10232-3:2007: Transport of dangerous goods-Emergency response guides
- Annexure A of SABS 0232-3: Emergency Response Hand Book.
- SANS 1518:2005: Transport of dangerous goods Design requirements for road vehicles and portable tanks.
- A significant proportion of health care risk waste falls into class 6 of SABS Code 0228 and SANS 10248: 2004.

**11. Management of Radioactive Waste**. There is a code of practice for management and disposal of non-nuclear radio-active waste WSC -P91-1 November 1991, revised February 1997. There are also guidelines for the safe transport of radio-active materials. Requirements for safe use of unsealed radio nuclides, April 1993, revised April 1994 and February 1997.

**12. International Perspective.** There are Multilateral Environmental Agreements that relate to the management of hazardous waste. Multilateral Environmental Agreements are International legal instruments that are concluded between a large number of States or International organisations as parties and are governed by International law. Their main goal is sustainable development, prevention of pollution and to ensure proper waste management. The under mentioned multilateral environmental agreements in the Cluster of Chemicals and Hazardous waste are more relevant to the health care risk waste management and disposal and South Africa is a signatory to the Conventions.

(a) Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

The key objectives of the Basel Convention are:

- (i) Maximise waste disposal near point of generation;
- (ii) Reduce transboundary movement of hazardous waste to minimum consistent with their environmentally sound management;
- (iii) Minimise generation of hazardous wastes in terms of quantity and hazardousness.

(b) Stockholm Convention on Persistent Organic Pollutants.

The objectives of the Stockholm Convention are:

- (i) Minimise and eliminate the total release of chemicals such as dioxins and furans;
- (ii) Enforce the implementation of environmentally sound management of stockpiles, waste and products which consist of, contain or are contaminated by persistent organic pollutants.

(c) Rotterdam Convention on the Prior Informed Procedure for Certain Hazardous Chemicals and Pesticides in International Trade.

The Objectives of the Rotterdam Convention are:

- (i) Promote shared responsibility and cooperative efforts in safe handling, use and disposal of hazardous chemicals in order to protect human health and the environment from potential harm;
- (ii) Contribute to the environmentally sound use of hazardous chemicals by facilitating exchange of information about their characteristics.



**ANNEXURE II: Policy and Procedures for the Disposal of Pharmaceutical Waste**



**KWAZULU-NATAL DEPARTMENT OF HEALTH  
PHARMACEUTICAL SYSTEMS DEVELOPMENT**

**POLICY AND PROCEDURES  
FOR THE  
DISPOSAL OF PHARMACEUTICAL WASTE**

**August 2007**

# POLICY

## 1. SCOPE OF THE POLICY

This policy should be read in conjunction with:

Legislation:

1. The Medicines and Related Substances Control Act (Act 101 of 1965), and its supporting Regulations.
2. Environmental Management Act (Act 107 of 1998)
3. Standards Act (Act 29 of 1993)
4. Occupational Health and Safety Act (Act 85 of 1993)
5. Hazardous Substances Act (Act 15 of 1973)

Codes, Guidelines and Policies

1. KZN DOH Policy on Health Care Risk Waste Management
2. National Waste management Strategy
3. Contract ZNT 5027/98 – H: Disposal/Removal of Waste. (Current Contractor - Compass Waste Services)
4. SABS Code of Practice - SANS 10248:2004 "Management of Healthcare Waste
5. Guidelines for the Destruction of Schedule 5 Medicines and Substances – Medicines Control Council
6. Guidelines for the Destruction of Schedule 6 Medicines and Substances – Medicines Control Council

NOTE: This policy does **not** cover the disposal of Radioactive Pharmaceutical Waste. This will be dealt with in a separate document.

## 2. DEFINITIONS

For the purpose of this policy,

"Pharmaceutical Waste" will mean:

- expired, unused, unusable, spilt and contaminated pharmaceutical products, medicines, cytotoxic preparations, vaccines, sera that are no longer required and need to be disposed of appropriately.
- items used in the pharmacy for the handling/manipulation of pharmaceuticals e.g. bottles, boxes, ampoules, vials with residue, gloves, masks, connecting tubing.

"Contractor" will mean:

- The waste management company contracted to the Department in terms of contract ZNT 5027/98: Disposal/Removal of Waste or any contract that replaces said contract.

### **3. GENERAL PRINCIPLES**

- 3.1 The destruction of pharmaceutical waste is described in regulation 27 of the General Regulations to the Medicines and Related Substances Act (Act 101 of 1965) as amended.
- 3.2 The destruction of Schedule 5 and Schedule 6 medicines and substances may only take place under the supervision of an inspector designated in terms of Section 40(1) of the Act, an officer of the SAPS or other person authorised in terms of the legislation to supervise this action.
- 3.3 In the case of medicines up to and including Schedule 4, a pharmacist may destroy such medicines. The destruction must be certified by this pharmacist.
- 3.4 In the case of Schedule 5 and 6 medicines, these may only be destroyed in the presence of an inspector, an officer of the SAPS or other person authorised by the Director General. In terms of the legislation the inspector, authorised person or officer must, on behalf of the Medicines Regulatory Authority (MRA), provide a certificate of destruction and, in the case of an officer of the SAPS, a case number must be provided. This must be entered into the register.
- 3.5 All destruction and subsequent disposal must take place in accordance with provincial policy as well as local municipal regulations regarding the disposal of chemical or medicinal waste. No medicines may be disposed of into municipal sewerage systems. The person certifying destruction may be requested to prove that the method of destruction and disposal is in accordance with such policies and regulations.
- 3.6 All medicines or substances must be destroyed and disposed off in such a manner that does not allow recovery.
- 3.7 All quantities destroyed must be recorded and, where necessary, indicated in the relevant register on the date of destruction and signed by the pharmacist, indicating a reference to the destruction certificate or case number.

### **4. PERSONS AUTHORISED TO SUPERVISE THE DESTRUCTION OF MEDICINES**

The MRA has authorised Mr P W Avery and Mr D R Gooden from Pharmaceutical Systems Development to supervise the destruction of Schedule 5 and Schedule 6 substances.

## **PROCEDURES**

The procedures will be separated into those for medicines up to and including Schedule 4,

and those for schedule 5 and 6 medicines.

## **1. Medicines up to and including Schedule 4**

### **1.1 Collection of Pharmaceutical Waste**

1.1.1 All pharmaceutical waste from wards and clinics must be returned to the Pharmacy. The ward or clinic must compile a list that must reflect the item name, schedule, batch number, expiry date and the quantity/volume being returned.

1.1.2 Medicines returned by patients/families of patients must be collected by the pharmacy but need not be itemised.

### **1.2 Board of Survey**

Before any expired, unused, unusable medicines are destroyed, a Board of Survey (BOS) **must** be convened. The items recommended for destruction must be safely and securely stored until the collection for destruction takes place – see 1.3, 1.4 and 1.5 below.

Medicines returned by patients/families of patients should not be included in the Board of Survey.

### **1.3 Storage**

Pharmaceutical waste must be collected in the pharmacy and placed in appropriately sized tamperproof Green Specibins (10 litre or 20 litre). These are available from the contracted waste disposal company. Once filled to the correct level, they must be closed in a manner that prevents the container being opened. The items must be carefully packed. Medicines, other than those packed in PVC blister packs, do not have to be removed from the original packaging.

A list of items included in each green Specibin must be completed – see Annexure A. Medicines returned by patients/families of patients need not be itemised but listed as “miscellaneous medicines returned by patients”.

### **1.4 Items that require special packaging**

- Substances that have the potential to react with others must be packed in separate containers.
- Medicines packed in PVC blister packs must be removed from the blister packing before placing them in the green bin. The blister packaging must be discarded with the general waste in black bags.
- Waste aerosol dispensers must be stored separately in black plastic bags and marked “Waste aerosol dispensers” in such a way that they can be easily identified from general waste (SANS 10248 - 7.3.4.2.1).
- Cytotoxic substances must be packed separately from other waste. Green Specibins must be used (SANS 10248 – 4.3.3 table 1). These containers must carry a Cytotoxic hazard label (SANS 10248 – 4.4.2) – supplied by the contractor.

## 1.5 Labelling of sealed Specibins

A reference number must be marked on the bin with a permanent marker. This will ensure that each bin is given a unique number. This reference number must also appear on the contents list and in a register of Specibin numbers that must be kept by the pharmacy.

## 1.6 Contacting Contractor to Remove Waste

When a reasonable quantity of sealed Specibins has been collected, the Institution's Waste Management Officer, after liaising with the Pharmacy Manager, must contact the contractor to arrange for the collection and disposal of the waste. Copies of all bin contents must be provided to the contractor.

## 1.7 Collection of Waste

The Contractor's driver will arrive to collect the waste with a waste manifest listing the items to be collected. The institution's pharmacist will be responsible for checking this list against the waste to be removed and recording the details on the Waste Collection Document (WCD) for Pharmaceutical and Medicinal Products. The Contractor's driver must record the reference number of each Specibin on the WCD. This will enable the waste to be tracked from pharmacy of origin to final destruction. The driver and/or load assistant will load the Specibins onto the contractor's vehicle and remove them to the contractor's facility for storage until final destruction. The contractor takes responsibility for the waste from collection until final destruction.

## 1.8 Destruction

The contractor will be responsible for the sealed Specibins from the time of collection from the pharmacy until the final destruction. A destruction certificate will be signed by those witnessing the destruction. A copy of the certificate will be sent to the institution. It must be referenced against the relevant Specibin in the Specibin Register. It must be securely stored with the Board of Survey form for at least 5 years.

## 2. Schedule 5 and 6 Medicines

### 2.1 Collection of Pharmaceutical Waste

All Schedule 5 and 6 pharmaceutical waste from wards and clinics must be returned to the Pharmacy. The ward or clinic must compile a list that must reflect the item name, schedule, batch number, expiry date and the quantity/volume being returned. Medicines returned by patients/families of patients must be collected by the pharmacy but need not be itemised. They must be handled as per section 1 above.

### 2.2 Board of Survey

Before any expired, unused, unusable medicines are destroyed, a Board of Survey (BOS) **must** be convened. The items recommended for destruction must be safely and securely stored in the pharmacy until collection for destruction.

### 2.3 Advising Pharmaceutical Systems Development

Once the recommendations of the Board of Survey have been approved by the Head of Institution, a copy of the BOS must be sent to Pharmaceutical Systems Development at Head Office.

### 2.4 Co-ordination of Activities

The Pharmacy Manager must liaise with the Institutions Waste Management Officer, Pharmaceutical Systems Development and the Contractor to arrange a date and time for the collection of the waste by the contractor. One of the Pharmacists from Head Office who has been authorised by the MCC to destroy Specified Schedule 5 and Schedule 6 medicines must visit the hospital concerned prior to the collection date to:

- verify the medicines to be destroyed,
- reduced them to a state that will not allow recovery. This could include the crushing of tablets and capsules, breaking of ampoules and vials. An absorbent material may be added to soak up any liquids. The resulting mass should be sealed in plastic to prevent leakage during transportation
- supervise the packing into a Specibin, and
- write them off the relevant register (see 3 below).

### 2.5 Specibins

After the items have been rendered non-recoverable, they must be placed in a green tamperproof Specibin that must be closed in a manner that prevents the container being opened.

A list of items included in each green Specibin must be completed – see Annexure A.

### 2.6 Labelling of sealed Specibins

A reference number on the security seal must be marked on the bin with a permanent marker. This will ensure that each bin is given a unique number. This reference number must also appear on the contents list and in a register of Specibin numbers that must be kept by the pharmacy.

### 2.7 Collection of Waste

The Contractor's driver will arrive to collect the waste with a waste manifest listing the items to be collected. The institution's Waste Management Officer and pharmacist will be responsible for checking this list against the waste to be removed and recording the details on the Waste Collection Document (WCD) for Pharmaceutical and Medicinal Products. The Contractor's driver must record the reference number of each Specibin on the WCD. This will enable the waste to be tracked from pharmacy of origin to final destruction. The driver and/or load assistant will load the Specibins onto the contractor's vehicle and remove them to the contractor's facility for storage until final destruction. The contractor takes responsibility for the waste from collection until final destruction.

### 2.8 Destruction

The contractor will be responsible for the sealed Specibins from the time of collection from the pharmacy until the final destruction. This destruction must be witnessed by a pharmacist. A destruction certificate will be signed by those witnessing the destruction. A copy of the certificate will be sent to the institution. It must be referenced against the relevant bin in the Specibin register. It must be securely stored with the Board of Survey form for at least 5 years.

### **3. SCHEDULE 5 and 6 REGISTERS for SPECIFIED SCHEDULE 5 and for SCHEDULE 6 SUBSTANCES**

3.1 The quantities, and Specibin number, of any medicines or substances to be destroyed must be annotated in the relevant register on the date of collection for destruction.

3.2 The entries in the register must be signed by the two pharmacists who undertook the removal from stock, the rendering incapable of recovery and packaging for final destruction.

3.3 The Board of Survey report and destruction certificate must be referenced in the relevant register. They must also be securely stored and retained for a period of 5 years.

### **4. REPORTING REQUIREMENTS**

4.1 The certificate of destruction must be retained in the institution's records. A copy must be sent to Pharmaceutical Systems Development at Head Office for filing. Pharmaceutical Systems Development must, in the case of Schedule 5 and 6 medicines, forward a copy of the certificate to the Medicines Control Council.

4.2 Once the stock (all schedules) has been collected for destruction and written off the relevant registers, a loss report **must** be completed and sent to Financial Management at Head Office – see intranet for form and procedure. A copy of the Board of Survey and certificate of destruction should accompany the loss report form.

### **5. MONITORING OF STOCK**

5.1 It is the responsibility of the Pharmacy Manager to ensure that the quantities of medicines that need to be destroyed are kept to a minimum. Stocks of medicines, irrespective of where they are kept in an institution or clinic, must be regularly checked to ensure that short-dated and slow moving stock is regularly rotated and if necessary redistributed for use.

5.2 It may be inevitable that some stock will have to be destroyed from time to time. Pharmacy Managers must ensure that Boards of Survey are conducted on a regular basis so that the stock that may have to be destroyed at any one time is kept to manageable quantities.

## **GLOSSARY**

BOS	Board of Survey
MCC	Medicines Control Council
MRA	Medicines Regulatory Authority
SAPS	South African Police Services
WCD	Waste Collection Document

## **CONTACT DETAILS:**

<b>MCC:</b>	The Registrar	Fax: 012 312 3114/65
	Medicines Control Council	Tel: 012 312 0230/47/43
	Department of Health	
	Private bag X828	
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**Pharmaceutical Waste for Destruction – up to and including Schedule 6 medicines**

ANNEXURE A

HOSPITAL:	SPECIBIN SIZE:
PHARMACIST:	BIN REFERENCE NUMBER:
Date:	

	Name of Medicine	Schedule	Quantity	Packaging (tablets, ampoules, boxes, bottles, etc)	Expiry date	Contractor's signature	Pharmacist Signature
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

**ANNEXURE III: Current types of receptacles available and in use for the different categories of health care risk waste**

Category	Type of Receptacles	Type of waste	Comments
Sharps waste	Puncture resistant reusable or disposable polymeric sharps containers with non-reversible sealing lid, equipped with mechanism for removal of needles.	Syringes, needles, scalpels, broken glass vials, etc.	Whilst sharp items are a relative small proportion of the health care risk waste, it is by far the most expensive waste stream to containerise. Used needles and syringes are disposed as one unit.
Pathological waste	Polymeric water and airtight (when sealed) buckets and containers (cylindrical or rectangular). Large limbs may be sealed in multiple heavy duty polymeric liners.	Amputations, foetuses, tissue waste, termination of pregnancy remnants, blood specimens, etc.	In many instances the same cylindrical bucket is used as both a pathological waste container and a sharps container using either an airtight lid or a lid with an insert and flap for disposal of sharps. However, this does not facilitate proper segregation.
Pharmaceutical and chemical waste	Polymeric drums, buckets, containers, jerry cans and similar water and air tight vessels	Used, spent, and obsolete chemicals and pharmaceuticals	There are few dedicated containers for pharmaceutical waste and normally the colour coding per SABS code must be applied. Pathological waste containers are used, or reused cardboard boxes for expired or partially used drugs. Illicit use of expired medicines must be prevented.
Infectious waste	Heavy-duty plastic liners to be placed in final outer containers when full and sealed. Disposable polymeric or cardboard (plastic liner) boxes. Lined reusable polymeric boxes. Lined wheelie bins	Bandages, swabs, dressings, tubes, syringes without needles, used blood bags, plasters, empty vials and similar material that is infectious	This is the largest component of the health care risk waste stream. There are frequent problems with sharps or leachable wastes being placed in the plastic liners or cardboard boxes causing injuries or spillage.
Radioactive waste	If decayed below threshold limit in usual standard containers, otherwise in specialised lead lined metal containers.	Contaminated materials, body fluids and suspensions used in diagnostics or treatment	Usually radioactive waste is generated at few highly specialised hospitals only. Radioactive waste is stored in special stores for a minimum number of half lives until sufficiently decayed and activity is reduced below safety limits.

## **ANNEXURE IV: The Life Cycle of Health Care Risk Waste: A Cradle-to-Grave Approach to Health Care Risk Waste Management**

The stages in the life cycle of health care risk waste are:

1. Procurement of supplies for public health establishment activities: this is the stage where product substitution and pollution preventive measures can be applied, for example, substituting PVC containing polymeric products with non PVC alternatives, avoid mercury containing products and order products that use better rechargeable batteries, etc.
2. Generation of health care risk waste at a public health establishment when waste is produced. This is where waste minimization strategies should be employed.
3. Segregation at source (public health establishment) when the produced health care risk waste is separated. Firstly, health care general waste is segregated from health care risk waste. Secondly, different forms and categories of health care risk waste are separated and segregated into designated categories. The waste is segregated into designated categories and containerized into appropriately colour coded and labelled containers. Segregated and containerized health care risk waste is temporarily centralized or kept in dedicated area within the public health establishment.
4. Collection: waste is collected at various public health establishments for reuse, recovery or recycling where possible.
5. Transportation of waste from a public health establishment to a storage, treatment or disposal facility. Waste is taken by suitable vehicle between storage areas and to treatment and disposal areas and risk to patients, employees, the public and the environment are minimised by controlling all steps in the loading and unloading, including the risks associated with spillage.
6. Processing at the treatment facility. Waste is treated to reduce the hazardousness, mass and volume for final disposal.
7. Disposal of the residue of treated waste at the permitted landfill site.

This represents an ideal cycle in the management of waste, from generation to disposal. It should be noted that this process may differ from facility-to-facility and from one waste stream to the next. However, the overall management of health care waste should follow this trend, with more emphasis put on waste minimization.

## **ANNEXURE V: Template for a Health Care Risk Waste Management Plan**

### **1. Scope and Objectives of the Plan**

#### **2. General information (status quo)**

- detail/s of hospital/s and/or clinic/s
  - number of beds & occupancy rates
  - waste generated (quantity & types)
- service provider/s
- other contractors, e.g. maintenance
- incidents and accidents (types & number)
- training

#### **3. Institutional arrangements**

- management organogram
- waste management reporting structure
- roles & responsibilities of key stakeholders
  - health care waste officer
  - occupational health and safety
  - head of the institution, etc.

#### **4. Classification of health care risk waste streams**

#### **5. Description of the waste management system**

- generation, segregation & containment
- internal transportation & temporary storage
- collection & external transportation
- treatment
- disposal

#### **6. Proposed waste avoidance and reduction initiatives**

#### **7. Proposed waste recovery, recycling and re-use initiatives**

#### **8. Occupational health and safety aspects**

- handling risk identified
- methods to reduce risk
- safety operating procedure

#### **9. Skills development and training**