



**HEALTH PROFESSIONS COUNCIL OF SOUTH AFRICA**

**GUIDELINES FOR GOOD PRACTICE IN THE HEALTH CARE  
PROFESSIONS**

**GUIDELINES FOR THE MANAGEMENT OF HEALTH CARE  
WASTE**

**BOOKLET 16**

**PRETORIA  
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## THE SPIRIT OF PROFESSIONAL GUIDELINES

Practice as a health care professional is based upon a relationship of mutual trust between patients and health care practitioners. The term "profession" means "a dedication, promise or commitment publicly made".<sup>1</sup> To be a good health care practitioner, requires a life-long commitment to sound professional and ethical practices and an overriding dedication to the interests of one's fellow human beings and society. In essence, practice as a health care professional is a moral enterprise. In this spirit the HPCSA presents the following ethical guidelines to guide and direct the practice of health care practitioners. These guidelines form an integral part of the standards of professional conduct against which a complaint of professional misconduct will be evaluated.

[Note: The term "health care practitioner" in these guidelines refers to persons registered with the HPCSA].

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<sup>1</sup> Pellegrino, ED. Medical professionalism: Can it, should it survive? *J Am Board Fam Pract* 2000; 13(2):147-149 (quotation on p. 148).

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CODE OF PRACTICE FOR THE HANDLING AND DISPOSAL OF WASTE  
MATERIALS WITHIN HEALTH FACILITIES**

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## GUIDELINES FOR THE MANAGEMENT OF HEALTH CARE WASTE BY HEALTH CARE PRACTITIONERS

### 1 MOTIVATION OF THE NEED FOR THESE GUIDELINES

The HPCSA views the proper disposal of health care waste by health care practitioners as an essential element of good professional practice. These guidelines are issued to remind practitioners of their ethical and professional obligations to their patients and to the community. They also serve to assist practitioners to meet the HPCSA's mandate to protect the public and the requirements of the South African Constitution (Act No.108 of 1996) regarding the preservation and protection of the environment.

### 2 DEFINITION OF HEALTH CARE WASTE

Health care waste may be defined as any undesirable or superfluous by-product, emission, residue or remainder generated by in the course of health care by healthcare professionals, healthcare facilities and other non-healthcare professionals, which is discarded, accumulated and stored with the purpose of eventually discarding it, or is stored with the purpose of recycling, re-using or extracting a usable product from such matter. Health care waste may, if handled improperly, have the potential to harm people, property or the environment. In this regard, all human anatomical waste, blood and body fluids are considered to be potentially hazardous. The unsafe disposal of such waste could have detrimental effects for people who might come into contact with health care waste.

**Comment [LL1]:** The definition of health care waste in the new SABS guideline is different. I suggest removing reference to the old but existing guideline as the new guideline when finalized, will supplant the old one. I have taken the definition from the new document.

### 3 TYPES OF HAZARDOUS HEALTH CARE WASTE

For the purpose of these guidelines, the following would be considered to be hazardous health care waste:

- 3.1 Infectious waste.
- 3.2 Pathological waste, including body fluids, secretions and surgical specimens.
- 3.3 Sharps, especially contaminated sharps.
- 3.4 Pharmaceutical waste.
- 3.5 Chemical waste.
- 3.6 Heavy metals.
- 3.7 Radioactive waste.
- 3.8 Genotoxic waste.
- 3.9 Cytotoxic agents
- 3.10 Pressurised containers.

### 4 HAZARDOUS PROPERTIES OF HEALTH CARE WASTE

Health care waste may be hazardous because it contains infectious, radioactive or toxic (including genotoxic, immunotoxic and cytotoxic) materials. Health care waste may also contain hazardous chemicals or pharmaceuticals and could be responsible for traumatic injury and other forms of physical hazard.

## **5 REASONS WHY HEALTH CARE WASTE IS A SIGNIFICANT DANGER TO SOCIETY**

Health care waste is a significant danger to society because:

- 5.1 Unsafe management of hazardous health care waste, particularly in its disposal, may increase the risk of needle stick injuries, transmission of infectious agents and expose unsuspecting parties to unnecessary and entirely preventable risks. The severity of the risk associated with such exposures may be difficult to quantify, and such exposures should be prevented.
- 5.2 Health care waste entering the normal domestic waste stream will end up being disposed of in municipal landfill sites. When health care waste is placed in landfills or buried, contamination of groundwater may occur and may result in the spread of E-Coli and unacceptably high COD readings.
- 5.3. Many smaller landfill sites are not fenced off and have poor security. This results in unwanted tip-face picking and scavenging. If health care waste is disposed on such a site, there is a risk of exposure to people scavenging on the sites.
- 5.4 The irresponsible and illegal dumping of hazardous health care waste in South Africa, as intermittently reported in the media, is a matter of serious concern. It also places an unacceptably high financial and human resources burden on health authorities to manage the problem.
- 5.5 The burning of health care waste as opposed to incineration is not recommended as it pollutes the environment, especially through the formation of dioxins. Incineration should only be used where it meets specifications that avoid secondary pollutant emissions.

## **6 MANAGEMENT OF HEALTH CARE WASTE BY HEALTH CARE PRACTITIONERS**

- 6.1 It is the responsibility of all health care practitioners to have a health care waste management system in place or to have access to such a system. Such a system should be provided by an accredited waste service provider and be conducted in accordance with relevant SABS code, such as 0248:1993 as updated. Such a system should deal comprehensively with measures for waste minimization, segregation, packaging, labeling, storage and removal under circumstances that do not pose a threat to human health or the environment, both for routine circumstances and in the event of an accident resulting in contamination with health care waste.
- 6.2 Independent practitioners should be able to provide demonstrable evidence of compliance with an acceptable protocol for the management of health care waste. Such a protocol should provide for an audit trail of the management of waste generated by the practice.
- 6.3 Where a health care practitioner is in the employ of a health care institution and is not directly responsible for the management policies of the facility, there is an obligation on practitioners to insist that the management comply with the provisions of these guidelines. Where management is unable or unwilling to meet the requirements for safe management of health care waste, the practitioner should report the matter to the HPCSA and the Department of Health for appropriate follow up.

- 6.4 Provincial and local government health authorities should, wherever possible, by mutual agreement and taking into account the cost implications, make their facilities for the management of health care waste available to independent health care practitioners in the area.
- 6.5 Where a health care practitioner is responsible for the management of a health care facility, he or she must ensure that the facility has a documented waste management policy with sufficient resources and suitably trained team members to implement safe management of health care waste generated by the facility and its staff.
- 6.6 Health care practitioners should aim at all times to minimize the amount of health care waste generated in the process of health care delivery and to ensure that they are familiar with methods to minimize, segregate and store health care waste safely.
- 6.7 It is the responsibility of health care practitioners to ensure that, if necessary, they should keep up to date with the latest scientific knowledge on the safe management of health care waste by undergoing further training in waste management.
- 6.8 All medical sharps should be considered hazardous healthcare waste whether or not contaminated with infectious agents. The proper use and disposal of suitable sharps containers contributes to the minimization of injuries and transmission of potentially harmful agents. It is important that the health care practitioner make use of sharp containers that are suited for the purposes of disposing of sharps. Such containers should not puncture easily, should be stable and durable enough to withstand a fall onto a hard surface.
- 6.9 When using sharps containers for discarded needles and other sharp health care waste, health care practitioners should ensure that the containers are not filled beyond their fill capacity, and are maintained upright throughout their use during handling, storage and transport. Sharps that contain cytotoxic, genotoxic or radioactive waste should be treated as per their waste categories and not mixed with general sharp items. Do not reuse sharps containers designed, manufactured and intended for single-use purposes.
- 6.10 Health care practitioners have an obligation to report evidence of unsafe disposal or management of health care waste by other persons, including any health care practitioners, to the HPCSA and the Department of Health, should such unsafe practice come to their attention.
- 6.11 The Code of Practice of the South Africa Bureau of Standards on the Handling and Disposal of Waste Material within Health Care Facilities (SABS 0248:1993) or updates, should it be amended, should be used as a supplement to these official guidelines of the HPCSA for the management of health care waste by health care practitioners (see Annexure below).
- 6.7 Failure to adhere to these guidelines will be considered to be unprofessional conduct on the part of the health care practitioners concerned.

**Comment [LL2]:** I took out the guidelines because a lot of what is in the guidelines is very technical information about how to label, package, etc. It is not reasonable to expect the health professional to comply with all that. We are really focusing on their ethical obligation. I think that what is in the HPCSA guideline is sufficient.

**Comment [LL3]:** The HPCSA secretariat should update these if needed.

**7 CONTACT DETAILS OF AUTHORITIES WHERE FURTHER ADVICE MAY BE OBTAINED**

- |   |   |
|---|---|
| <p>7.1 <b>The Director-General</b><br/>                 Department of Health<br/>                 Private Bag X828<br/>                 PRETORIA<br/>                 0001<br/>                 Tel: (012) 312-0921</p> | <p>7.7 Environmental Health Office<br/>                 Department of Health<br/>                 Private Bag X517<br/>                 BLOEMFONTEIN<br/>                 9300<br/>                 Tel: (051) 405-5021</p> |
|---|---|



Fax: (012) 323-0094

Fax: (051) 448-1150

- |  |   |
|--|---|
| <p>7.2 Provincial Environmental Health Office<br/>Department of Health<br/>Private Bag X0038<br/>BISHO<br/>5609<br/>Tel: (040) 609-3701<br/>Fax: (040) 635-0115</p>      | <p>7.8 Environmental Health Office<br/>Department of Health and Welfare<br/>Private Bag X2068<br/>MMABATHO<br/>2735<br/>Tel: (018) 387-5096<br/>Fax: (018) 387-5332</p>               |
| <p>7.3 Environmental Health Office<br/>Department of Health<br/>Private Bag X11285<br/>NELSPRUIT<br/>1200<br/>Tel: (013) 752-8085 x 2043<br/>Fax: (013) 755-3549</p>     | <p>7.9 Environmental Health Office<br/>Department of Health<br/>P O Box 62302<br/>MARSHALLTOWN<br/>2107<br/>Tel: (011) 355-3829<br/>Fax: (011) 355-3154</p>                           |
| <p>7.4 Environmental Health Office<br/>Department of Health<br/>Private Bag X9051<br/>PIETERMARITZBURG<br/>3201<br/>Tel: (033) 395-2772<br/>Fax: (033) 342-1405</p>      | <p>7.10 Environmental Health Office<br/>Department of Health<br/>P O Box 648<br/>CAPE TOWN<br/>8000<br/>Tel: (021) 483-3737<br/>Fax: (021) 483-2786</p>                               |
| <p>7.5 Environmental Health Office<br/>Department of Welfare<br/>Private Bag X5048<br/>KIMBERLEY<br/>8300<br/>Tel: (053) 830-0654<br/>Fax: (053) 830-0655</p>            | <p>7.11 <b>The Director General</b><br/>Department of Environmental Affairs<br/>and Tourism<br/>Fedsure Forum<br/>315 Pretorius Street<br/>Private Bag X477<br/>PRETORIA<br/>0001</p> |
| <p>7.6 Environmental Health Office<br/>Department of Health and Welfare<br/>Private Bag X9302<br/>POLOKWANE<br/>0700<br/>Tel: (015) 290-9057<br/>Fax: (015) 291-2925</p> | <p>7.12 The President<br/>South African Institute of<br/>Environmental Health<br/>P O Box 23<br/>NIGEL<br/>1490</p>   |

## 8 REFERENCES

- 8.1 Kessor R D: Environmental Pollution from Expired Medicaments, *South African Medical Journal* 1994 Aug, 84(8 Pt 1), 512.
- 8.2 Shaner H: Health Care Waste and the Environment, *Am J Nursing*, 1999 Sept, 99 (9), 73.
- 8.3 South African Bureau of Standards: *Code of Practice on the Handling and Disposal of Waste Material within Health Care Facilities*. SABS Code 0248, Pretoria, 1993.
- 8.4 Thornton J, McCally M, Orris P, Weinberg J: Hospitals and Plastics. Dioxin Prevention and Medical Waste Incinerators. *Public Health Rep.* 1996 Jul - Aug, 111(4), 299-313.

- 8.5 Viljoen R, Heunis C, Van Rensburg W J, Van Rensburg D, Engelbrecht M, Fourie A, Steyn F, Matebesi Z: *National Primary Health Care Facilities Survey 2001*, Compiled for the Health System Trust (HST) by the Centre for Health System Research, HST: Durban.

**ANNEXURE**  
**ABRIDGED VERSION**

UDC 725.5:628.4.04

SABS 0248:1993

**SOUTH AFRICAN BUREAU OF STANDARDS**

**CODE OF PRACTICE**

**for the**

**HANDLING AND DISPOSAL OF WASTE MATERIALS WITHIN HEALTH CARE  
FACILITIES**

(Incorporating CAN/CSA-Z317.10-88, *Handling of waste materials within health care facilities*, with modifications)

Abridged by the  
Health Professions Council of South Africa  
as part of the  
Guidelines for the Management of Health Care Waste by Medical Practitioners, Dentists  
and Medical Scientists

The detailed document is  
obtainable from the

SA BUREAU OF STANDARDS  
Private Bag X191  
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Republic of South Africa  
0001

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**NOTICE**

The detailed standard was approved by the Council of the South African Bureau of Standards on 25 February 1993. It remains under revision and should, therefore, be obtained from the Bureau in full if required for verification of specific provisions.

**NOTES**

1. In terms of the Regulations promulgated under the Standards Act, 1982 (Act No. 30 of 1982), it is a punishable offence for any person to falsely claim compliance with the provisions of a code of practice published by the South African Bureau of Standards.
2. Authorities who wish to incorporate any part of this code of practice into any legislation in the manner intended by section 33 of the Act, should consult the South African Bureau of Standards regarding the implications.
3. As the standard will be revised when necessary in order to keep abreast of progress, comment will be welcomed by the Bureau and will be considered when the standard is revised.

**FOREWORD**

The standard establishes specific guidelines for the segregation, collection, movement and storage of waste materials within health care facilities. The main objective is to decrease injury to personnel and the possible risks of spreading infection due to the improper handling of waste materials.

The main features of the standard are as follows:

1. A series of waste categories based on the World Health Organisation's Report *Management of Waste from Hospitals* has been introduced.
2. A clause on pharmaceutical waste appears in the standard.
3. A classification system for waste containers has been developed.
4. Various procedures reflect modern current infection control practices.
5. The standard has been written in such a way as to reflect the practical aspects of handling waste.

**INTRODUCTION**

In many guidelines, all waste contaminated with blood or body fluids are classified as infectious waste. This enormously increases the volume of waste requiring expensive handling and disposal. Identical items of waste are disposed of from homes with no special handling or decontamination. For these reasons, this issue received detailed consideration during the preparation of the standard.

The identification of every patient who carries a blood borne pathogen such as Hepatitis B or Human Immunodeficiency Virus (HIV, leading to AIDS) is both impractical and inappropriate. The

modern trend in hospital infection control is to build safe practices into ALL clinical procedures; the precaution taken is dictated by the risk accompanying the procedure, not by the diagnosis.

Two premises have been incorporated throughout the standard:

1. The simple presence of viable organisms does not constitute a hazard; a mechanism by which these organisms can infect a host must coexist. Since Hepatitis B and HIV are usually transmitted by inoculation, the concern with blood alone, for example, is misplaced. The emphasis should more appropriately be applied to the category of clinical sharps. Infections acquired by waste handlers are rare, but almost always associated with trauma. Vigorous efforts directed toward the prevention of these injuries deserve high priority; the incidence of both the wounds and accompanying infections can be reduced dramatically by adherence to safe procedures.
2. Absolute elimination of all risk is impossible. A realistic goal is the attainment of a reasonable degree of safety at all times without needlessly compromising efficiency.

**Note:** The scope of the standard is restricted to the health care site, but the responsible person for the health care facility still bears the ultimate responsibility for the safe disposal of waste (generated on site) outside the site.

## 1 SCOPE AND FIELD OF APPLICATION

- 1.1 The standard includes criteria for the segregation, collection, movement, storage, and on-site disposal of waste materials within health care and biological research facilities.
- 1.2 The standard does not deal with the disposal of waste once it has been removed from the site of the health care facility. Such matters are the subject of national, provincial, regional and municipal legislation and regulations.
- 1.3 The standard does not address special precautions in national and provincial legislation which may apply to infectious substances (or the transportation thereof).
- 1.4 In the standard, "shall" indicates a mandatory requirement; "should" indicates a recommendation, or that which is advised but not mandatory.
- 1.5 Notes accompanying the clauses do not include mandatory or alternative requirements. The purpose of a note accompanying a clause is to separate it from the text as being explanatory or informative material that is not properly a part of the standard. Notes to the table are considered to be part of the table and are written as mandatory requirements.

## 2 DEFINITIONS

The following definitions apply to the standard and are included herein for information and clarity:

- 2.1 **Chemical waste:** Comprises discarded solid, liquid and gaseous chemicals, e.g. from diagnostic or experiential work, or from cleaning, housekeeping or disinfecting procedures. Chemical waste may be hazardous or non-hazardous. For the purposes of choosing the most appropriate waste-handling method, hazardous chemical waste is considered to be waste that is -

2.1.1 Toxic;

2.1.2 Corrosive (acids of pH < 2,0 and bases of pH > 12,0);

2.1.3 Flammable;

2.2.4 Reactive (explosive, water reactive, shock sensitive); or

2.2.5 Genotoxic (carcinogenic, mutagenic, teratogenic or otherwise capable of altering genetic material).

**[Note:** Non-hazardous chemical waste consists of chemicals other than those described here, such as sugars, amino acids, and certain organic and inorganic salts].

2.2 **Clinical glass:** Glass possibly contaminated with blood and body fluids or chemicals, (e.g. blood collection tubes, laboratory glass, medication vials).

2.3 **Collection:** The accumulation of wastes from several primary or intermediate storage sites for movement to a waste-holding area or from several waste-holding areas for movement to a final storage area.

2.4 **Colour-coding:** The application of colour to a container in order to identify the category of waste for which it is to be used.

2.5 **Container:** Any receptacle for the storage of wastes. Containers can be classified into two subgroups as follows:

2.5.1 Reusable waste container.

2.5.2 Single-use waste container.

2.5.1. **Reusable waste container:** A waste container that is:

2.5.1.1 Reusable;

2.5.1.2 Fabricated of metal or rigid plastics;

2.5.1.3 Resistant to burning, impact and corrosion;

2.5.1.4 Suitable for the waste it is to contain; and

2.5.1.4 Colour-coded or identified according to the type of waste for which it is intended (see table 1) by one of the following methods:

1. If the container is made of plastics, the plastics may be dyed in the appropriate colour; or
2. A band of colour not less than 50 mm in width may be applied to the container. Reusable waste containers shall be inspected for holes or leaks every time they are emptied, and their colour-coding renewed if necessary.

**[Note:** Such containers are used for the:

a. Collection;

b. Transportation; or

c. Storage of waste, e.g. garbage cans and storage bins].

2.5.2 **Single-use waste container:** A waste container that can be one of the following:

2.5.2.1 Sharps container.

2.5.2.2 Waste-holding plastic bag.

2.5.2.3 Cardboard container.

2.5.2.4 Specialised container.

2.5.3 **Sharps container:** A container that:

2.5.3.1 Is sturdy enough to resist puncture under usage conditions and to the point of disposal;

2.5.3.2 Is clearly identified as containing sharps, e.g. by the use of the word SHARPS or a symbol recognised by the facility;

2.5.3.4 Has lid(s) capable of being tightly secured; and

2.5.3.5 If used for containing cytotoxic wastes, has the cytotoxic hazard symbol displayed clearly and visibly.

**[Notes:**

1. Other useful features of sharps containers include -
  - a. A fill line;
  - b. Unauthorised withdrawal prevention;
  - c. Handles; and
  - d. A wall bracket and lock.
2. Containers selected should be compatible with and appropriate to the type of waste they are to contain.
3. Where practical, the same type of container should be used throughout a facility. Standardisation of the containers will encourage greater use and enhance identifiability among users].

2.5.4 **Waste-holding plastic bag container:** A plastics bag used as a container and that is:

2.5.4.1 Colour-coded or identified according to the type of waste for which it is intended (see table 1); and

2.5.4.2 Sturdy enough to resist puncture, leaking and breaking under individual usage conditions and to the point of disposal, except where:

- a. Provincial regulations governing the off-site disposal of waste require bags of a specific thickness;
- b. Municipal or other local authorities responsible for sanitary landfill sites require bags of a specific thickness; or
- c. Facility administrators have established procedures involving specified bag thicknesses.

**[Note:** It is inappropriate to specify a minimum thickness of plastic bags or plastic sharps containers since polymeric materials vary extensively in their physical and mechanical

properties. It is quite possible that a 25 mm thick film of one polymeric material will be more puncture, impact and abrasion resistant than a 50 mm thick film of a different polymeric material. These properties can be further affected by the manufacturing process, i.e. extrusion and injection moulding. The most appropriate manner of determining the suitability of a particular container in respect of its ability to resist puncture, leaking and breaking under individual usage conditions is to subject the container to those usage conditions].

- 2.5.5 **Cardboard container:** A container made from cardboard and that is:
- 2.5.5.1 Colour-coded or identified according to the type of waste for which it is intended (see table 1);
  - 2.5.5.2 Rigid; and
  - 2.5.5.3 Leak resistant.
- 2.5.6 **Specialised containers** (e.g. paint cans): Specialised containers colour-coded or identified according to the type of waste for which they are intended.
- 2.6 **Cytotoxic:** Having a deleterious effect upon cells; commonly used in reference to pharmaceuticals used in the treatment of cancer, (e.g. antineoplastics, chemotherapy agents).
- 2.7 **Disposal:** The removal of waste from the site of the health care facility or the on-site incineration of waste.
- 2.8 **General waste:** Waste that:
- 2.8.1 Has not been included in the other waste categories; and
  - 2.8.2 Does not pose a disease-related risk or threat to people or the environment. The general waste category includes:
    - 2.8.2.1 Office waste;
    - 2.8.2.2 Kitchen waste;
    - 2.8.2.3 Non-clinical glass waste; and
    - 2.8.2.4 All other similar wastes.
- 2.9 **Hazardous:** Referring to any material or substance that, if handled improperly, has the potential to harm people, property or the environment.
- Note:** All human anatomical waste such as blood and body fluids are potentially hazardous.
- 2.10 **Human/animal anatomical waste:**
- 2.10.1 Waste consisting of:
    - 2.10.1.1 Tissues;
    - 2.10.1.2 Organs;
    - 2.10.1.3 Body parts;
    - 2.10.1.4 Products of conception; and



## 2.10.1.5 Animal carcasses.

2.10.2 This waste category is divided into the subcategories of:

2.10.2.1 Human anatomical waste;

2.10.2.2 Infectious animal anatomical waste; or

2.10.2.3 Non-infectious animal anatomical waste.

**[Note:** The following are considered to be non-anatomical wastes:

a. Blood and body fluids.

b. Extracted teeth.

c. Nail clippings.

d. Hair].

2.11 **Health care facilities:** Health care facilities are all places (sites) where professional health services are dispensed to human patients or biological research is carried out and includes, *inter alia*, hospitals, clinics, rehabilitation centres, sick bays (old age homes), free-standing operating theatres, day units, clinics (mobile and stationary) and doctor's consulting rooms.

2.12 **Infectious non-anatomical waste:** Any waste contaminated with viable micro-organisms capable of transmitting, and reasonably likely to transmit, disease.

**[Note:** This may include -

a. All microbiology lab wastes that have not been decontaminated;

b. Waste from surgeries and autopsies performed on patients with infectious diseases; and

c. All contaminated waste from patients].

2.13 **Movement:** Transfer of waste material between storage areas within the health care facility.

2.14 **Non-clinical glass:** Glass from maintenance and kitchen areas, (e.g. broken window panes and discarded glass bottles, unless visibly contaminated with blood).

2.15 **Pharmaceutical waste:** Pharmaceutical products such as drugs and medicinal chemicals that are:

2.15.1 No longer usable in patient treatment and have been returned from patient care areas, have become outdated or contaminated, have been stored improperly; or

2.15.2 No longer required.

2.16 **Pressurised container waste:** Consists of aerosol cans or disposable compressed gas containers that may explode if incinerated or accidentally punctured.

2.17 **Refrigerated storage:** Storage of waste at a temperature of 4°C or lower.

2.18 **Segregation:** The separation of waste according to classification (see Table 1) prior to storage.

- 2.19 **Sharps and similar waste:** These include:
- 2.19.1 Needles;
  - 2.19.2 Syringes;
  - 2.19.3 Blades;
  - 2.19.4 Clinical glass; and
  - 2.19.5 Any other clinical items capable of causing a cut or puncture.
- 2.20 **Soiled utility room:** An intermediate storage room within the facility where waste from the patient's bedside is temporarily stored.
- 2.21 **Storage:** The accumulation of waste after segregation in a specified container in a predetermined location.
- 2.22 **Storage areas:**
- 2.22.1 **Final storage area:** The area of the facility where waste is stored just before being disposed of;
  - 2.22.2 **Intermediate storage area:** The area of the facility where waste is stored following its collection from the primary storage area and before being removed to the final storage area. This will necessarily include the means by which the waste is transported;
  - 2.22.3 **primary storage area:** The area of the facility where waste originates, e.g. a consulting room, patient room and laboratory.
- 2.23 **System:** The waste management system belonging to the health care facility.
- 2.24 **Waste holding:** The storage of waste collected from all primary storage areas such as a laboratory wing, a block of operating rooms, or a floor of patient rooms.

### 3 REFERENCE DOCUMENTS

- 3.1 The following documents should be referred to when handling and disposing of waste materials:
- 3.1.1 *Medicines and Related Substances Control Act, 1965 (Act No. 101 of 1965).*
  - 3.1.2 *Human Tissue Act, 1983 (Act No. 56 of 1983), as amended.*
  - 3.1.3 Compulsory specification for biological safety cabinets (Classes I, II and III), published by Government Notice No. 1318 (*Government Gazette* No. 12517) of 15 June 1990.
  - 3.1.4 SABS 1186, *Symbolic safety signs.*
  - 3.1.5 SABS 0226, *The installation, post-installation tests and maintenance of biological safety cabinets.*
  - 3.1.6 BS 5252, *Framework for colour coordination for building purposes.*

#### **4 OCCUPATIONAL HAZARDS AND HEALTH RISKS**

- 4.1 To minimise the occupational health risks associated with the handling and disposal of health care waste, occupational health care programmes should:
- 4.1.1 Introduce safe or less hazardous substitutes for chemical agents with exposure hazards;
  - 4.1.2 Require closed storage for volatile agents, traces of which, or brief exposure to which, cause a health hazard;
  - 4.1.3 Require the use of proper venting and exhausting in accordance with the established principles of occupational hygiene;
  - 4.1.4 Provide appropriate personal protective equipment with disinfection and disposal arrangements for workers involved in various stages of waste handling and disposal;
  - 4.1.5 Include an assessment of waste management procedures on a regular basis, to assure compliance with the standard and applicable national, provincial, regional and municipal regulations and legislation;
  - 4.1.6 Include a training programme for all persons handling wastes;
  - 4.1.7 Include appropriate protective equipment and handwashing facilities; and
  - 4.1.8 Include a written procedure to handle and report needle-stick injuries and other injuries sustained whilst engaged in waste disposal.
- 4.2 Health care facilities shall have freely available to all personnel concerned, written policies and procedures which include requirements for at least:
- 4.2.1 The cautionary labeling of all containers of hazardous materials;
  - 4.2.2 Material safety data sheets;
  - 4.2.3 Appropriate worker training for each system element;
  - 4.2.4 Protection of proprietary information; and
  - 4.2.5 When applicable, compliance with relevant national and local regulations.

#### **5 GENERAL PROVISIONS**

All waste needs to be handled so as to ensure that it is segregated at source, contained in packaging that holds the contents to the point of disposal, and disposed of in a manner that is practical and efficient yet minimises any hazard. By minimising the handling of waste, fewer people will be exposed to it. Potentially offensive unrefrigerated waste should be timeously removed.

There are certain classes of waste that need to be handled in specific ways. They are specified in the standard to ensure proper handling.

**5.1 SEGREGATION OF WASTES**

Wastes shall be segregated according to the following categories that are further detailed in Table 1 (see below page 16):

5.1.1 Human/animal anatomical waste.

5.1.2 Infectious non-anatomical waste.

5.1.3 Sharps and similar waste.

5.1.4 Chemical/pharmaceutical waste.

5.1.5 Radioactive waste.

5.1.6 Pressurised container waste.

5.1.7 General waste.

**5.2 IN-HOUSE CONTROL**

5.2.1 Each generator of biohazardous waste shall prepare, maintain and implement a written plan to identify and handle all waste generated within the facility and shall provide a training programme for all staff to familiarise them with:

5.2.1.1 Procedures for the segregation, collection, storage, labeling and movement of waste specified by the standard;

5.2.1.2 Personal hygiene, especially handwashing; and

5.2.1.3 The hazards of those materials to which workers may be exposed. Such training shall be continuously assessed and reinforced.

5.2.2 An inspection programme shall be established to ensure that the procedures specified by the standard are followed.

5.2.3 The final disposal of hazardous waste remains the responsibility of the waste generator.

**[Note:** The in-house control of waste produced by health care facilities should be managed in accordance with the provisions of the standard, under the supervision of the facility's infection control committee or a designated department].

**5.3 CLOSURE AND BAGGING OF WASTE-HOLDING PLASTIC BAGS**

5.3.1 Bags containing waste, no matter how they are closed, shall be such that their contents are prevented from escaping.

5.3.2 A single bag is normally adequate if it is impervious and sturdy (i.e. not easily penetrated) and if the article can be placed in the bag without contaminating the outside of the bag. Otherwise, double bagging should be used.

**5.4 INTERMEDIATE AND FINAL STORAGE AREAS**

5.4.1 All waste-storage areas shall meet the requirements of the National Building Regulations.

5.4.2 Intermediate and final storage areas shall:

- 5.4.2.1 Be totally enclosed;
- 5.4.2.2 Be separate from supply rooms or food preparation areas;
- 5.4.2.3 Have provision for being locked; and
- 5.4.2.4 Have access restricted to authorised personnel only.

5.4.3 Health care facilities that refrigerate stored waste shall use:

5.4.3.1 A lockable, closed cold storage facility; or

5.4.3.2 A lockable, domestic-type freezer unit that is dedicated to the accumulation of waste for disposal. This waste shall be stored at a temperature of 4°C or lower, with freezing being the preferred method of storage.

5.4.4 Health care facilities shall prepare a contingency plan for dealing with the storage of refrigerated waste in the event of excess waste being produced, incineration facilities or refrigeration/freezing facilities becoming inoperative.

5.4.5 Health care facilities shall prepare a contingency plan to deal with the disposal of waste in the event of a disruption of disposal services.

5.4.6 Users of the standard shall refer to the National Building Regulations for information regarding the ventilation of waste-storage areas.

## **5.5 MOVEMENT OF WASTE**

5.5.1 Manual handling of waste materials shall be minimised.

5.5.2 Carts used for carrying waste shall be:

- 5.5.2.1 Capable of containing the waste;
- 5.5.2.2 Designed to prevent spills; and
- 5.5.2.3 Constructed of materials that permit effective cleaning and disinfection.

[Note: Open carts may be used to transfer waste contained within waste containers].

5.5.3 Waste containers shall be moved only when properly closed.

5.5.4 Specific routes for the movement of waste shall be planned in order to minimise its passage through patient care and other clean areas.

5.5.5 Waste disposal chutes should be avoided, but if they are provided, shall be used for general waste purposes only. Such disposal chutes shall comply with all applicable building and fire codes and regulations.

5.5.6 The compacting of waste destined for landfill sites shall be determined by the individual health care facility in accordance with national, provincial, regional and municipal legislation and regulations.

**5.6 DISPOSAL OF WASTE**

The health care facility shall dispose of all waste in accordance with national, provincial, regional and municipal regulations and legislation.

**5.7 MAINTENANCE AND CLEANING OPERATIONS****5.7.1 Protective apparel**

The following protective apparel shall be worn, as necessary, by any personnel engaged in the cleaning of reusable waste containers, waste-movement carts, or final storage areas:

- 5.7.1.1 Water-resistant coveralls.
- 5.7.1.2 Rubber boots.
- 5.7.1.3 Heavy-duty waterproof gloves.
- 5.7.1.4 Protective goggles or face shields.

[Note: When not in use, protective apparel shall be stored in an area designated for this purpose].

**5.7.2 Reusable waste containers and waste-movement carts**

- 5.7.2.1 Reusable waste containers and waste-movement carts shall be thoroughly cleaned in accordance with the facility's established procedures.
- 5.7.2.2 The frequency of cleaning operations shall be in accordance with the facility's established procedures.
- 5.7.2.3 Reusable waste containers and waste-movement carts shall be thoroughly cleaned before any maintenance work is performed on them.

**5.7.3 Storage sites**

Floors, walls and ceilings of intermediate and final storage areas shall be thoroughly cleaned in accordance with the facility's established procedures.

**5.8 SPILL OR ACCIDENT CLEANUPS**

- 5.8.1 Every possible effort should be made to avoid the escape of any hazardous material in the course of normal operations. Minor spills involving loss or release into the air of small volumes of material are most likely to result from faulty transfer techniques. Major spills or accidents usually involve container rupture, caused by equipment malfunction or careless handling.
- 5.8.2 As in the handling of all hazardous substances, the most important elements in dealing with a major spill are common sense and a contingency plan prepared and learned in advance.

- 5.8.3 Health care facilities shall have a documented policy and procedure for managing spills of a hazardous substance.
- 5.8.4 The procedure for managing a spill shall include the following:
- 5.8.4.1 All staff shall be trained and educated in -
- a. The management of hazardous substances; and
  - b. The recognition and management of a spill condition.
- 5.8.4.2 A method for the containment and isolation of each type of spill shall be prepared.
- 5.8.4.3 Should a spill occur, the person or persons designated for spill cleanup shall be notified immediately. These persons shall have specific training in the management of spills.
- 5.8.4.4 Information concerning individual substances and their cleanup shall be readily accessible to all staff and available on a 24 hour basis.
- 5.8.4.5 Proper equipment shall be made available for:
- a. Spill cleanups; and
  - b. The protection of employees.
- 5.8.4.6 The procedures for each type of spill shall be documented and made available in the area where the spill is likely to occur.
- 5.8.4.7 Procedures for the proper disposal of waste spills according to the waste-management policy of the facility shall be prepared.
- 5.8.4.8 All incidents shall be documented for the purpose of record keeping.
- 5.8.4.9 Any employee exposed to a spill shall be treated and monitored by the facility.
- 5.8.4.10 If necessary, evacuation and internal disaster plans shall be implemented.

<b>6</b>	<b>SPECIFIC PROVISIONS FOR DEALING WITH THE DIFFERENT TYPES OF HEALTH CARE WASTE</b>
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- 6.1 After dealing with the above general provisions, the standard goes on to deal separately with each of the various categories of health care and general waste.
- 6.2 Readers who require more detailed information on dealing with the relevant categories of waste, are advised to contact the South African Bureau of Standards (SABS) for such information as the standard for dealing with health care waste is constantly under review and being updated as required.
- 6.3 At the invitation of the SABS, a member of the HPCSA's Committee for Human Rights, Ethics and Professional Practice has been nominated to serve on the relevant Committee of the SABS. The HPCSA appreciates this invitation and trusts that it will result in close cooperation between the SABS and the HPCSA in dealing with this important aspect of health care management and protection of the public.

6.4 The following categories of health care waste are addressed in the standard:

#### **6.4.1 Human/animal anatomical waste**

The standard deals with its definition and the following subcategories:

##### 6.4.1.1 Human anatomical waste

The item deals with the containment, collection, final storage areas and disposal of human anatomical waste.

##### 6.4.1.2 Animal anatomical waste

The item deals with the containment, collection, final storage areas and disposal of animal anatomical waste.

#### **6.4.2 Infectious non-anatomical waste**

The standard deals with the definition, containment, collection, final storage areas and disposal of infectious non-anatomical waste.

#### **6.4.3 Sharps and similar waste**

The standard deals with the definition of sharps and similar waste which includes:

6.4.3.1 Needles;

6.4.3.2 Syringes;

6.4.3.3 Blades;

6.4.3.4 Clinical glass; and

6.4.3.5 Any other clinical items capable of causing a cut or puncture; and

their containment, collection and disposal.

#### **6.4.4 Chemical/pharmaceutical waste**

The standard on chemical waste deals mainly with hazardous and pharmaceutical chemicals, their definition, basic safety guidelines, basic waste disposal guidelines, the handling and disposal of pharmaceuticals other than cytotoxics, and the handling and disposal of cytotoxic pharmaceuticals.

#### **6.4.5 Radioactive waste**

The handling and disposal of radioactive wastes are subject to the Nuclear Energy Act, 1982 (Act No. 92 of 1982).



**6.4.6 Pressurised container waste**

The standard again deals with the definition, containment, collection and disposal of pressurised container waste.

**6.4.7 General waste**

The standard deals with the definition, containment, collection and disposal of general waste and briefly addresses the issues of kitchen waste and non-clinical glass waste.

TABLE 1 - SUMMARY OF COLOUR-CODING/LABELING REQUIREMENTS

1	2	3	4
Waste category	Waste subcategory	Colour-coding/labeling	Clause
1. Human/animal*) anatomical waste	1(a) Human anatomical	RED	6.2
	1(b) Infectious animal anatomical	ORANGE**, OR RED	6.3
	1(c) Non-infectious animal anatomical	BLUE	6.3
2. Infectious*) non-anatomical waste		YELLOW	7
3. Sharps and similar waste		"SHARPS" or recognised symbol	8
4. Chemical/ pharmaceutical waste	Chemical waste		9.1/9.2
	Pharmaceutical waste excluding cytotoxic pharmaceutical waste	BLACK, DARK GREEN, or recognised coding	9.3/9.3.4
	Cytotoxic pharmaceutical waste	Cytotoxic hazard symbol	9.3.5
5. Radioactive waste		Radiation hazard symbol	10
6. Pressurised container waste		BLACK or DARK GREEN	11
7. General waste	7(a) Office waste	BLACK or DARK GREEN	12
	7(b) Kitchen waste	BLACK or DARK GREEN	12.4
	7(c) Non-clinical glass waste	BLACK or DARK GREEN	12.5
	7(d) Non-infectious non-anatomical waste	BLACK or DARK GREEN	12
*) Chemical or radioactive solutions containing human/animal anatomical and infectious non-anatomical wastes should be considered as chemical or radioactive wastes respectively.			
**) ORANGE - 06E53 in BS 5252 (MUNSELL Ref 5YR7/15).			

# Ethical guidelines for good practice in the health care professions

The following Booklets are separately available:

- Booklet 1:** *General ethical guidelines for health care professions*
- Booklet 2:** *Ethical and professional rules of the health professions council of South Africa as promulgated in government gazette R717/2006*
- Booklet 3:** *National Patients' Rights Charter*
- Booklet 4:** *Professional self-development*
- Booklet 5:** *Guidelines on over servicing, perverse incentives and related matters*
- Booklet 6:** *General ethical guidelines for health researchers*
- Booklet 7:** *Ethical Guidelines for Biotechnology Research in South Africa*
- Booklet 8:** *Research, development and the use of the chemical, biological and nuclear capabilities of the State*
- Booklet 9:** *Seeking patients' informed consent: The ethical considerations*
- Booklet 10:** *Confidentiality: Protecting and providing information*
- Booklet 11:** *Guidelines for the management of patients with HIV infection or AIDS*
- Booklet 12:** *Guidelines withholding and withdrawing treatment*
- Booklet 13:** *Guidelines on Reproductive Health management*
- Booklet 14:** *Guidelines on Patient Records*
- Booklet 15:** *Canvassing of patients abroad*
- Booklet 16:** *Guidelines for the management of health care waste*