NORMS AND STANDARDS
FOR ENVIRONMENTAL HEALTH
AND OCCUPATIONAL HYGIENE
AT DISTRICT HOSPITALS

A Research Report
COMPiled by

Port Elizabeth Technikon for
Environmental Health Research

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Foreword

The National Health System as envisaged in the Draft National Health Bill (April 2000) emphasizes the rendering of primary health care services at district level as services with high priority. To promote such services, and to give guidance to all relevant health authorities, the National Department of Health prepared a Primary Health Care Package and subsequently furnished a document containing norms and standards applicable to primary health services at clinics and community based clinic initiated services. In addition to this, a set of norms and standards for health services rendered at community health centres and district hospitals is currently being determined.

Environmental health and occupational hygiene, within the context of a district hospital, were identified as important health components for which norms and standards needed to be determined. The Health Systems Trust, on behalf of the National Health Department, tasked the Unit for Environmental Health Research of the Port Elizabeth Technikon to identify these norms and standards and, where possible, indicate mechanisms that could be applied to monitor the status of the relevant service components. The result of this research is contained in this document in the form of the relevant norms and standards for environmental health and occupational hygiene that are applicable to district hospitals.

Most norms and standards incorporated in this document were obtained from legislation and other recognized sources. The research necessitated visits to several hospitals, consultation with various organizations and individuals and the study of a wide variety of literature ranging from legislation, the South African Bureau of Standards Specifications and Codes of Practice, the Council for Scientific
and Industrial Research, Government Departmental Guidelines and the World Health Organization.

The Research Unit gratefully acknowledges the valuable contributions made by various individuals consulted during the research.

Port Elizabeth Technikon – Unit for Environmental Health Research
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1. **Introduction**

The primary function of a district hospital is to render a comprehensive curative service to patients. This function provides personal service, whereas Environmental Health and Occupational Hygiene comprise those aspects of health care delivery that are non-personal in nature and focus on measures to prevent and control factors in the hospital environment that may potentially affect the health of patients and workers adversely or detrimentally influence the surrounding environment.

The purpose of this document is to provide a comprehensive set of norms and standards that are applicable to district hospitals; and to furnish district health managers, hospital managers and other health personnel with the necessary information and guidance to:

- ensure an acceptable standard of environmental health and occupational hygiene, and
- manage the relevant services (plan, budget, monitor and provide training).

The quality of facilities and supplementary services in district hospitals, as they relate to environmental health and occupational hygiene standards, depend largely on the involvement of the relevant line functionaries of the hospitals and the relevant health authorities. Involvement of environmental health officers and occupational hygienists is imperative and must be encouraged.

The areas of activity in a district hospital, where environmental health and occupational hygiene norms and standards apply, are the following:

- Physical Facilities
• Building Requirements
• Food Service Unit
• Water
• Laundry Facility
• Mortuary Facility
• Hospital Waste Management
• Incinerator Facility
• Occupational Hygiene in the Hospital Work Environment
• Infection Control
• Environmental Pollution Control
• Pest Control
• Management

This classification into specific areas of activity is the most practical for easy reference and use by hospital managers and personnel as a guide to assist them in the achievement of the standards determined for the various activity areas.

Environmental health and occupational hygiene norms and standards are based on national and provincial legislation and guidelines, the South African Bureau of Standards Specifications and Codes of Practice, the Council for Scientific and Industrial Research Guidelines and World Health Organization Technical Reports / Guidelines.

Standards as prescribed by legislation imply a dual responsibility. On the one hand, standards concerns the individual patient and worker in the hospital, and on the other hand, standards include a civil liability for both the hospital management and / or the relevant health authority. This wide range of responsibility emphasizes the importance of district hospitals complying with the mandatory standards identified in this document.
The provision of essential services, such as water and refuse disposal for instance, may differ in hospitals situated in rural or urban areas. This difference should be borne in mind when interpreting the identified standards for these services.

2. **Definitions**

For the purpose of this document the following definitions apply:

2.1. **Environmental Health**

Environmental Health refers to the establishment and maintenance of a healthful environment that involves the safeguarding of water, air, food and the hospital as a living and working environment. It also involves the safe handling and disposal of hospital waste, whether solid, liquid or gaseous.

2.2. **Occupational Hygiene**

Occupational Hygiene means the anticipation, recognition, evaluation and control of conditions arising in or from a workplace, which may cause illness or which could have an adverse effect on the health of persons.

**Note:** Norms and standards relating to safety requirements are not included in this document as safety falls within the jurisdiction of authorities other than health.

2.3. **Activity Area**

An activity area refers to a facility or service within the district hospital environment where environmental health and occupational hygiene norms and standards are applicable.

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2.4. **Norm**
A norm is defined as the desired status of environmental health and occupational hygiene with regard to facilities and supplementary services in the district hospital.

2.5. **Standard**
A standard is defined as a mandatory requirement, or a recommendation that one is advised to follow to obtain the desired norm outcome.

**Note:** In the standards included in this document, “must” or “shall” indicates a mandatory requirement; “should” indicates that which is recommended on the strength of authoritative sources, but cannot be interpreted as mandatory.

2.6. **Standard Reference**
Standard reference means a statutory source that prescribes the standard or an authoritative source that recommends the relevant standard.

2.7. **Evaluation**
Evaluation means monitoring to determine the extent of compliance with standards by means of formal mechanisms that include physical investigations, sampling for physical, bacteriological and chemical analysis, testing and measurements.

3. **Norms and standards for environmental health and occupational hygiene at district hospitals**
The layout presenting the relevant norms and standards at district hospitals is user-friendly. Information is provided separately for each activity area. An introduction to each activity area provides back-
ground information that is specific to that activity area. Typical standards appear under separate headings. Standard references are provided for each activity area and, where applicable, footnotes and tables provide additional information.

### 3.1. ACTIVITY AREA 1: PHYSICAL FACILITIES

#### Introduction

Physical facilities primarily refer to the buildings and the relevant equipment that is basic to the range of services in a district hospital. These include patient accommodation, staff accommodation, medical and special care units, ablution and toilet facilities, waiting rooms, the pharmacy and stores sections, a workshop and office accommodation.

Supplementary thereto are the facilities that provide the essential infrastructure i.e. a food service unit, water supply system, laundry facility, mortuary facility, waste disposal system and incinerator facility. The norms and standards for the infrastructure facilities are dealt with separately.

The following are standards common to the basic physical facilities.

#### Norm

The provision and maintenance of physical facilities should be in compliance with environmental health and occupational hygiene requirements.
## Standards

### 1. Specific structural requirements

Concurrent with building requirements stipulated in the National Building Regulations, facilities must conform to requirements which are specific or common to hospital services:

1.1. Surfaces of walls, floors, ceilings, doors and equipment must be of a finish that facilitates cleaning and disinfecting as is required in a hospital environment.

1.2. Adequate floor space must be provided to allow unobstructed movement of patients, mobile equipment, staff and to ensure that the hospital adheres to an acceptable level of occupation density in wards and related facilities.

1.3. The locality of all facilities, including lifts, fire escapes and general exits must be clearly indicated for convenience of patients, staff and visitors.

1.4. Facilities for patients and visitors must be adapted to accommodate physically disabled persons.

1.5. Separate storage for dirty and clean linen and equipment including sluice facilities for cleaning of soiled linen and equipment must be provided.

1.6. Space for storage of cleaning equipment must be provided in proximity to wards.
1.7. Adequate ablution and toilet facilities at ratios set out in the National Building Regulations read with Regulation R158 must be provided for use by patients and staff.

1.8. Waiting rooms with access to toilets and hand wash facilities must be provided for visitors.

1.9. Doors of ablution and toilet facilities for patients must be unlockable from the outside.

1.10. Hand wash facilities with hot and cold water must be provided in the immediate vicinity of all toilets and sluices.

1.11. Separate change-rooms for males and females must be provided in accordance with the Facilities Regulations (R1593).

1.12. Places where work is performed in the hospital must comply with requirements laid down by the Environmental Regulations for Workplaces R2281, with specific attention to thermal conditions in the work environment; lighting according to luminance values; visibility in areas immediately outside the workplace; unobstructed space for work performance; maintenance of buildings of workplaces; assuring noise levels below 85 dB; measures regarding flooding during construction and fire precautions including emergency exits.

2. **Operational directives**

2.1. A maintenance program should be developed and implemented to ensure that equipment and buildings remain in a serviceable and hazard free condition.
2.2. Provision should be made in the hospital budget to ensure maintenance of the facilities that fall within the responsibility of the hospital.

2.3. Procedures with regard to the operation and maintenance of the hospital’s ventilation, lighting and heating systems should be documented.

2.4. Procedure for reporting accidents should be provided by the hospital management.

2.5. Procedures should be formulated for the maintenance of cold room and chilling facilities including a cleaning schedule.

2.6. Procedures for cleaning, disinfecting and sanitizing should be documented.

3. **Competency of staff**

3.1. Designated hospital staff should be able to:

   - perform their duties pertaining to maintenance and cleaning of buildings and equipment;

   - follow procedures with regard to servicing of equipment, and surveying of buildings in terms of the maintenance program; and

   - advise hospital management with regard to the status of physical facilities in terms of standards.
4. Records

4.1. Information with regard to the following should be documented:

- Operational data of all facilities, equipment and transport required for maintenance planning, etc;
- Data on cleaning operations in the various facilities must be kept for planning of future programs; and
- Monitoring information on equipment performance must be kept as required for repair.

4.2. A layout plan of the building and facilities should be available to the hospital management.

5. Evaluation

5.1. Regular surveys of buildings and equipment to identify defects or unsatisfactory performance should be carried out.

5.2. Evaluation of skills of personnel handling equipment, machines, etc. must be undertaken.

5.3. Management should appoint a works committee to evaluate reports and data on buildings and equipment for the purpose of revising programs and policies.

Standard references

2. Regulation 158 of 1980 (Regulations Governing Private Hospitals and Unattached Theatre Units), promulgated in terms of section 44 of the Health Act, 1977 (Act 63 of 1977) as a guideline. The proposed amendment is Regulation R158 (Regulation Governing Patient Care Facilities).

3. Provincial Ordinances.

4. Local Authority by-laws.


3.2. ACTIVITY AREA 2: BUILDING REQUIREMENTS

Introduction

The design of new district hospitals (or the extension / alteration to existing facilities) varies and is largely determined by the location of the hospital (urban or rural), the community it will be serving and the specific health care services the hospital will be rendering. Compliance with prescribed structural requirements is important to ensure an acceptable standard of environmental health and occupational hygiene. Planned maintenance of buildings, fixtures, equipment and site areas should ensure a district hospital environment that is conducive to good health.

Norm 1

The site for a new district hospital should conform to accepted environmental
Standards

1. Site selection

1.1. Infrastructure facilities as listed below should be available and easily accessible:

- an adequate and safe water supply;

- effective sewerage facilities;

- effective waste disposal services; and

- effective transport services.

1.2. The following environmental influences that may have a negative impact on the hospital building or its functioning should be addressed in the process of site selection:

- surface waters such as swamps, marshes, etc, that could give rise to mosquito borne or any other diseases;

- air pollution;

- noise pollution;

- odour pollution;

- inappropriate soil types;
- a high groundwater table, and
- 50 year flood line.

**Norm 2**

The hospital buildings, including its facilities, fixtures and equipment should be of an acceptable standard.

**Standards**

1. **Building plans**

1.1. Building plans (including the extension / alteration to existing buildings) must be submitted to and comply with the requirements of the authorities (i.e. the Local Authority in whose area the hospital is situated, the Departments of Health - National and Provincial -, Labour and Works) that have an interest in the construction.

2. **Building requirements**

2.1. Construction of buildings must be in accordance with the approved building plans.

2.2. Besides the normal general building requirements, the following specific requirements are applicable:

   - Surfaces of walls, ceilings, doors, shelves and cupboards must have a smooth, light coloured and washable finish.

   - Floors of all rooms and corridors must be constructed of an imper-
vious material with a smooth finish.

- Carpets must not be used in medical care facilities, kitchens, laundries, utility rooms and mortuaries.

- Wall areas behind wash hand basins, clinical basins, sinks and slophoppers must have a washable impervious covering up to a height of at least 450mm above, and a distance of at least 150mm on each side of the fitting.

- Surfaces of baths, sinks, basins and toilets must be maintained in such a condition that they can be effectively cleaned.

- Roofs, walls, windows and doors should be maintained in such a condition that it will adequately resist the penetration of water.

- Separate drainage systems should be provided for sewage and stormwater.

- With flood proofing of the buildings the following methods should be considered:

  - Elevation of buildings above the flood level;
  - Walls that can resist hydraulic pressures;
  - Waterproofing of walls to prevent seepage;
  - The provision of control valves on sanitary and stormwater sewers; and
  - The sealing of manhole covers.
### 3. Operational Directives

3.1. A maintenance program should be developed and implemented to ensure that equipment and buildings remain in a serviceable and hazard free condition.

### 4. Evaluation

4.1. A member of the hospital staff should be delegated the responsibility of evaluating the condition of the hospital buildings on a regular basis. The district environmental health officer should render input in respect of environmental health and occupational hygiene.

4.2. Where facilities are subject to specific legal requirements, e.g. workplace environments, waste disposal facilities, etc, the relevant departments should be requested to perform the necessary evaluations on a regular basis.

### 5. Records

5.1. Hospital Management should ensure that evaluation information is recorded and defects referred to the relevant authorities to be rectified.

### 6. Collaboration

6.1. Hospital Management should collaborate with the Provincial Department of Health, the Department of Public Works and other responsible departments and authorities to ensure that the hospital buildings are maintained in an acceptable standard.

2. Local Authority by-laws.


4. Regulation 158 of 1980 (Regulations Governing Private Hospitals and Unattached Operating Theatre Units) promulgated in terms of Section 44 of the Health Act, 1977 (Act 63 of 1977) as a guideline. The proposed amendment is Regulation R158 (Regulation Governing Patient Care Facilities).


### 3.3. ACTIVITY AREA 3: FOOD SERVICE UNIT

**Introduction**

Food safety is achieved through quality assurance of foodstuffs and the maintaining of an adequate level of hygiene by conforming to minimum standards relating to the structure, equipment and operation of the food service
unit of the district hospital. The food service unit refers to the kitchen and ancillary facilities, where food is handled in transporting, storage, processing, preparation and serving as required for the needs of a hospital. Such a unit may vary in design or size according to local needs. In modern or larger hospitals it may consist of the main kitchen, ward kitchen(s) and a kitchen-cum-dining facility in the residential staff quarters. Standards applicable to all these units are the same.

<table>
<thead>
<tr>
<th>Norm</th>
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<tr>
<td>Food supply to a district hospital should be obtained from an acceptable operating food service unit.</td>
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<table>
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<th>Standards</th>
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<tr>
<td><strong>1. Safe food supply</strong></td>
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<tr>
<td>1.1. Food must not contain harmful substances.</td>
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<tr>
<td>1.2. Food must be obtained from sources that are approved and controlled by the responsible health authority.</td>
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<tr>
<td>1.3. Vehicles that are used for the transportation of foodstuffs must comply with requirements that are prescribed to prevent contamination.</td>
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<tr>
<td><strong>2. Specific structural requirements</strong></td>
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<tr>
<td>The location, design, construction and finish of the food service unit must conform to the following specific requirements:</td>
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<tr>
<td>2.1. The design and finish must facilitate the hygienic handling of food.</td>
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<td><strong>2.2.</strong></td>
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2.12. Facilities for chilling or heating of food must each have a thermometer installed. Chilled or heated food must be stored / kept according to prescribed temperatures.

3. **Equipment**

3.1. Equipment, utensils and surfaces that come into direct contact with food must facilitate effective cleaning and comply with requirements as prescribed.

3.2. Containers for inedible material or waste must be of a suitable material that is either easy to clean or disposable. Waste containers must be fitted with close fitting lids.

3.3. Equipment on which unwrapped food is handled, must be of smooth, rust proof, non-toxic and non-absorbent material.

4. **Operational directives**

4.1. The hospital budget should make adequate provision for the continuous operation, maintenance and cleansing of the food service unit.

4.2. The hospital should be able to obtain the relevant legislation, guidelines and protocols pertaining to food safety from the District Health Office\(^2\).

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\(^2\) It is recommended that a copy of the “Hygiene Manual” compiled by the working group Health Matters Committee – Sub Committee for Nutrition Services 1992 be obtained by every district hospital as an operational guide in the food service unit.
4.3. There should be job descriptions for persons in charge of the food service unit as well as for persons employed in the handling of food. Job descriptions should contain duties as prescribed, including responsibilities in terms of standards and requirements for handling of meat and for the transport of food.

4.4. Documented procedures should be provided for the prevention and control of food contamination.

4.5. Management must establish the precautionary measures necessary to protect workers in the food service unit against potential workplace hazards.

4.6. Protocols for the safe or correct use of equipment, protective clothing, cleaning materials, hazardous substances and facilities must be made available to workers.

4.7. A cleaning program should be established and procedures documented in respect of cleaning of facilities, equipment, working surfaces, etc.

4.8. Procedures must be documented with regard to the temperature control of uncooked and cooked food (cold and hot chains).

4.9. A protocol should be provided in respect of the correct method of hand washing and the use of hand washing facilities.

4.10. Procedures for maintaining excellent personal hygiene should be documented in consultation with the District Environmental Health Officer.
4.11. Suitable cleansing and disinfectant agents should be used in cleansing processes.

## 5. Competency of Staff

5.1. Designated hospital staff, including all food handlers, should be adequately trained to:

- perform their duties pertaining to safe food handling;
- follow protocols and procedures with regard to the prevention of food contamination, correct use of equipment, protective clothing, cleaning materials and cleaning methods; and
- follow procedures for the maintenance of excellent personal hygiene.

5.2. The person in charge of the food service unit should be competent to take responsibility for the implementation and maintenance of the food hygiene policy.

5.3. The District Environmental Health Officer should be competent to:

- advise on the implementation of a Hazard Analysis Critical Control Point (HACCP)³ plan;
- evaluate the level of hygiene in terms of standards;

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³ HACCP is a science based system that requires food processors to identify potential hazards that could cause food to be unsafe to eat, to establish and monitor targeted control points to minimize such risks and to keep records and results.
- perform sampling for monitoring of the effectiveness of cleaning operations in accordance with prescribed techniques;

- advise hospital management with regard to suitable remedial action where necessary; and

- facilitate interaction and collaborate with other sections, including Infection Control and Health and Safety Committees to ensure food safety in the hospital.

5.4. All food handlers must be medically fit on appointment.

5.5. Food handlers must immediately report illnesses to their supervisors.

6. **Training**

6.1. Management should arrange for adequate and continuous training of all food handlers in the hygienic handling of food and in personal hygiene so that they understand the precautions necessary to prevent contamination of food. This training should be carried out by personnel who are competent in this field e.g. the District Environmental Health Officer. Instruction should include relevant parts of:

- the Regulations Governing General Hygiene Requirements for Food Premises and Transport of Food;

- the South African Bureau of Standards Code of Practice for Food Hygiene; and

### 7. Records

**7.1. Information with regard to the following must be documented:**

- operational temperatures of facilities for chilling and heating of food (core temperatures);
- monitoring results or observations at vital key points in food handling processing operations;
- medical reports of food handler appointees and illnesses reported by food handlers;
- training of food handlers (competence);
- food quality monitoring results (bacteriological);
- hygiene level monitoring-results of food contact surfaces (bacteriological); and
- injuries reported.

### 8. Evaluation

**8.1. Regular hygiene monitoring by persons in control of the food service unit, infection control unit, hospital management and the District Environmental Health Officer.**

**8.2. Evaluation of training by hospital management and the District Environmental Health Officer.**
8.3. Evaluation of the application of the HACCP system.

8.4. The District Environmental Health Officer should pay special attention to the measures regarding the prevention of contamination of food during transport.

8.5. Hospital management must ensure regular hygiene and quality monitoring of foodstuffs obtained through tenders in consultation with the District Environmental Health Officer.

9. Administration and collaboration

9.1. Where the food service is part of the hospital organization, management must obtain a Certificate of Acceptability from the local authority as required in terms of Regulation 3 of R918.

9.2. Management should ensure collaboration between the various sections with regard to food safety e.g. food service unit and the hospital committee for infection control, health and safety, the dietician and the District Environmental Health Officer.

Standard references


3.4. ACTIVITY AREA 4: WATER

Introduction

A safe and adequate water supply is vital for the effective functioning of a district hospital. In this regard, the key roleplayers include the Department of Water Affairs and Forestry, and the Local Authority in whose area of jurisdiction the hospital is situated. Where the hospital obtains water from a private source, responsibility for the operation, maintenance and monitoring extends to the Department of Public Works and the specific hospital management.

Norm

A district hospital should have access to a constant, safe and adequate water supply.

Standards

1. Constant

1.1. Water must be continuously available.
1.2. A facility to ensure on site storage of water for 24 hours should be provided.

### Safe

2.1. The physical, bacteriological and chemical quality of the water must comply with prescribed requirements.

### Adequate

3.1. 650 liters of water per hospital bed and 40 liters per worker should be available per day.

3.2. 100 – 150 liters of water per bed should be available per day for resident staff.

3.3. The water supply must be adequate to accommodate other uses e.g. fire fighting.

### Specific structural requirements

4.1. The water source e.g. borehole, must be effectively protected.

4.2. Water storage facilities must be adequately protected.

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4 For water quality requirements, see SABS 241 of 1984 (Water For Domestic Supplies) that specifies physical requirements, chemical requirements and bacteriological limits. Total coliform bacteria count per 100ml as well as fecal coliform bacteria count per 100ml must be nil. The recommended maximum limit for a standard plate count per milliliter must not exceed 100.
4.3. The water distribution network must comply with the Local Authority by-laws.

4.4. Water must be reticulated to all points of use.

4.5. The delivery capacity of the distribution network must continuously ensure sufficient pressure at all points of use.

4.6. Where water purification is the responsibility of the hospital management, the purification plant must be of an acceptable standard to ensure potable water quality.

4.7. The entire water system that includes the source (if applicable), pumps, purification plant, storage facilities and the distribution network must be maintained in good working order.

4.8. Taps and pipes must be marked when containing water not fit for human consumption.

5. **Operational directives**

5.1. The hospital should be able to obtain from the district health office, the relevant legislation, codes and guidelines pertaining to the provision of water.

5.2. The hospital should have documented policy for:

   - the operation of purification plant/s (if purification of water is undertaken by the hospital);

   - the management of the entire water provision system; and
- a plan of the entire water distribution network.

### 6. Stores

6.1. The necessary chemicals should continuously be available for water purification where purification is undertaken by the hospital.

6.2. Equipment and chemicals for residual chlorine testing should be available.

### 7. Competency of staff

7.1. Designated hospital staff should know how to:

- perform operational functions pertaining to the water provision system; and

- perform water testing (residual chlorine testing).

7.2. The Environmental Health Officer who is rendering a service to the hospital should be competent to:

- monitor the effective functioning of the water provision system;

- perform water sampling and interpret the results;

- perform water testing; and

- facilitate and collaborate with other interested roleplayers, e.g. management, infection control, health and safety committee and other sections and departments to ensure acceptable water
8. **Records**

8.1. Information with regard to the following should be documented:

- water consumption (monthly);

- dates of water monitoring and water quality results (chemical, bacteriological and residual chlorine); and

- environmental health monitoring information.

9. **Evaluation**

9.1. Designated hospital staff should perform regular monitoring of the water system.

9.2. The Environmental Health Officer should perform similar monitoring investigations and carry out regular water quality monitoring\(^5\).

9.3. The Public Works Department should perform the necessary technical investigations to ensure that the water system is performing satisfactorily.

10. **Collaboration**

10.1. Internal:

10.1.1. Designated staff and supervisors should collaborate with management

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\(^5\) SABS 241 of 1984 recommends a frequency for water sampling.
and applicable hospital committees to ensure that the standard of water provision is maintained.

10.2. External:

10.2.1. Management in consultation with the Environmental Health Officer should collaborate with other departments and authorities whose activities have bearing on the provision of water to the hospital. A directory of relevant role players should be maintained for this purpose.

**Standard references**


2. Applicable Local Authority by-laws.

3. Regulation 158 of 1980 (Regulations Governing Private Hospitals and Unattached Theatre Units), promulgated in terms of section 44 of the Health Act, 1977 (Act 63 of 1977) as a guideline. The proposed amendment is Regulation 158 (Regulation Governing Patient Care Facilities).


3.5. ACTIVITY AREA 5: LAUNDRY FACILITY

Introduction

Hospitals are provided with a laundry facility or make use of laundry contractors. The safe and effective management of the hospital laundry or the efficient control in respect of a contractual arrangement is paramount in achieving levels of quality that are acceptable to meet requirements which in essence are aimed at safeguarding the health and safety of patients and employees.

Norm

The hospital should have access to well managed facilities for the effective laundering of linen.

Standards

The following standards are applicable to laundry facilities provided in a district hospital.
1. **Specific structural requirements**

1.1. Concurrent with standards for physical facilities, the laundry facility should conform to requirements which are specific to the relevant hospital needs:

1.1.1. The layout of the laundry and plant must meet process requirements for ensuring health and safety of employees; for controlling of infection; and avoiding contamination;

1.1.2. Surface finishes of walls, floors, ceilings, fittings, tables and trolleys must be smooth and easy to clean;

1.1.3. Ventilation must comply with specific air flow requirements e.g. from clean to soiled linen areas and from roof to floor in contaminated linen areas;

1.1.4. Lighting must be provided according to luminance values for laundering;

1.1.5. Drainage must be designed without open drains; with lockable inspection or rodding eyes; with a flow from clean to dirty areas; and not connected to stormwater drainage;

1.1.6. Areas receiving soiled linen must be separate from areas of clean linen;

1.1.7. Adequate ablution and toilet facilities must be provided, including an emergency shower or eye-wash facility in the wash-room where chemicals are handled and stored;
1.1.8. Suitable and hazard-free storage for chemicals must be provided;

1.1.9. The capacity and the condition of the equipment used for washing should meet the hospitals laundering requirements;

1.1.10. Separate eating and smoking areas must be provided and designated for use by employees.

1.2. Vehicles, containers, trolleys or other manually operated equipment for the transporting of linen must conform to requirements to ensure contamination free conditions.

2. **Operational directives**

2.1. Management should document quality policy including quality requirements for laundering of hospital linen.

2.2. Management should provide adequate resources for meeting the responsibility in respect of ensuring effective laundering of hospital linen including budgeting for proper maintenance of buildings and equipment or for contractual commitments in this regard.

2.3. A quality management system should be established incorporating:

- work instructions and procedures;
- process control procedures;
- quality control procedures; and
- control of linen (clean/soiled) procedures.
2.4. A procedure specifically for infection/contamination control must be made available to staff handling linen. The procedure should include control measures through differentiation between categories of soiled linen, i.e. of high-risk to normal soiled linen:

- Category A (red bag) = high risk infection for immediate incineration.

- Category B (yellow bag) = sealed alginate bags of high-risk (blood/body fluids contaminated or sluiced) for direct loading into washing machines.

- Category C (yellow bag/hazard label) = sealed hazardous material (chemical, anti-neoplastic drugs or radio-isotopes) for direct loading into washing machines.

- Category D (white bag) = normal linen of no risk during handling.

2.5. A clear policy on health environmental protection must be documented and communicated to all laundry staff.

2.6. A person designated as the laundry controller should ensure that requirements regarding pollution, occupational and environmental hygiene are complied with, including appropriate action in respect of any risks associated with infection or other hazards.

2.7. Procedures for the use of protective clothing and personal hygiene where staff are in contact with high-risk areas or linen must be documented to include precautionary measures.
3. Competency of staff

3.1 The laundry management/controller and other designated staff must know how to:

- carry out their functions effectively;

- handle hazardous goods in the laundry service;

- follow procedures (including first aid) with regard to prevention and control of infection;

- use protective clothing and follow procedures for decontamination; and

- operate laundry machines in order to ensure optimum results including general safety procedures.

3.2 Laundry staff must be required to pass the appropriate medical examination at appointment followed by routine health monitoring as prescribed by occupational health and safety legislation.

3.3 The District Environmental Health Officer should be competent to:

- monitor the effective functioning of the laundry service; and

- advise hospital management on environmental health and occupational hygiene requirements contained in relevant legislation or national standards.
4. Records

4.1. The laundry management and quality system must ensure that appropriate records are kept of all activities that affect linen and quality.

4.2. The laundry data control system must include a master list of documents to facilitate the location and revision of records or documents.

4.3. The results of inspections/checks and quality control tests should be documented and indicate the need for remedial action where necessary.

4.4. Accurate records of stocks of chemicals, cleaning agents and detergents should be maintained.

4.5. A full set of up-to-date materials safety data sheets for all washing or cleaning chemicals used in the laundry must be available in one location to staff likely to become involved in the control of an emergency situation.

4.6. Operation and maintenance records of plant and equipment, including records of special precautions to ensure minimum risk of cross-infection of laundered items should be kept.

4.7. Records of medical examinations, health monitoring and training of staff should be kept.

5. Evaluation

5.1. Management should conduct quality audits to:

   - identify problem areas from records, reports and complaints; and
36

- assess risks of environmental pollution or infection and disease transmission.

5.2. Regular monitoring of the laundry service by the District Environmental Health Officer in collaboration with the laundry management or controller should be carried out to ensure compliance with requirements.

<table>
<thead>
<tr>
<th>6.</th>
<th><strong>Standard references</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>6.3.</td>
<td>Code of Practice: Laundry Process and Management – South African Bureau of Standards: SABS 0146/1999. (It is recommended that a copy of this code be obtained as a guideline).</td>
</tr>
<tr>
<td>6.4.</td>
<td>Regulation 158 of 1980 (Regulations Governing Private Hospitals and Unattached Theatre Units), promulgated in terms of Section 44 of the Health Act, 1977 (Act 63 of 1977) as a guideline. The proposed amendment is regulation R158 (Regulation Governing Patient Care Facilities).</td>
</tr>
</tbody>
</table>
3.6. ACTIVITY AREA 6: MORTUARY FACILITIES

Introduction

Mortuaries at district hospitals in most instances are used to keep corpses until collected by family or undertakers. Post mortems are, however, performed at certain hospitals in remote areas, and these mortuaries need to be suitably designed and equipped to accommodate this service.

Norm

The mortuary should be of design, equipped and operated, in accordance with standards that will ensure a hazard free service.

Standards

1. **Structural Requirements**

1.1. The mortuary must conform to the structural requirements of the National Building Regulations and the following requirements that are specific to mortuaries:

1.1.1. The floor area must be adequate to allow the effective operation of mortuary functions.

1.1.2. The finish of wall surfaces, floors, ceilings, doors and equipment must facilitate effective cleaning and disinfecting.

1.1.3. Sufficient lighting and ventilation must be provided.

1.1.4. The facility must be rodent proof.
1.1.5. The mortuary should be separate from other hospital rooms and facilities.

1.1.6. Doors should be wide enough to facilitate easy transportation of corpses.

1.1.7. Suitable facilities that are screened from public view should be provided for the loading of corpses.

1.1.8. Toilet facilities must be available.

1.1.9. A wash hand basin with running cold and hot water equipped with soap, nailbrush, disinfectant and hand dry facilities must be provided.

2. **Equipment**

2.1. Suitable and adequate refrigeration facilities to keep corpses at a temperature not higher than 5 degrees C should be provided.

2.2. The following equipment should be provided at mortuaries where post mortems are carried out:

- a table of stainless steel or other approved material equipped with a raised rim on the outside, a tap with running water to which a flexible pipe can be connected and a drainage opening connected to the disposal system; and

- Clean protective over clothes consisting of surgical gloves, gum-boots, plastic aprons so designed that the front hangs over the top of the gumboots, face masks and overcoats, for every employee involved in post mortems.
3. **Operational directives**

3.1. Management should prepare policy for the handling of corpses in the hospital.

3.2. Suitable trained staff should be responsible for duties in the mortuary.

3.3. Refuse should be kept in corrosion resistant containers with tight fitting lids and must be handled as medical waste.

3.4. The facility should be kept free of insects.

3.5. After every post mortem, all work surfaces and equipment should be cleaned and disinfected.

3.6. Protective over clothes that have been used should be washed, cleaned and disinfected.

3.7. A cleaning program for the mortuary should be in place.

4. **Records**

4.1. A register should be kept to record information regarding the handling of corpses.

4.2. Temperatures of refrigeration facilities should be recorded daily.

5. **Evaluation**

5.1. The infection control staff member should regularly monitor whether the policy regarding the handling of corpses is followed and
whether the mortuary is operated in an acceptable manner.

5.2. The District Environmental Health Officer should monitor whether the necessary environmental health and occupational hygiene measures are maintained.

### 6. Standard References


6.2. Local Authority by-laws


6.4. Regulation 158 of 1980 (Regulations Governing Private Hospitals and Unattached Theatre Units), promulgated in terms of section 44 of the Health Act, 1977 (Act 63 of 1977) as a guideline. The proposed amendment is Regulation R158 (Regulation Governing Patient Care Facilities).


### 3.7. ACTIVITY AREA 7: HOSPITAL WASTE MANAGEMENT

**Introduction**

This service is concerned with practices in hospitals that relate to the man-
agement of both solid and liquid wastes associated with health care. The aim of the identified standards is to promote procedures that will reduce the risk of the spread of disease and the occurrence of accidents associated with such wastes. It should be emphasized that with hospital waste management the human element is more important than the technology. Almost any system of treatment and disposal that is operated by well trained and well motivated staff can provide better protection for staff, patients and the community than a sophisticated system that is managed by staff who do not understand the risks involved and the importance of their contribution.

<table>
<thead>
<tr>
<th>Norm</th>
</tr>
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<tbody>
<tr>
<td>A district hospital should implement effective measures to ensure the safe handling and disposal of hospital waste.</td>
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</table>

<table>
<thead>
<tr>
<th>Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Operational directives</td>
</tr>
</tbody>
</table>

1.1. The hospital management should prepare, maintain and implement a sustainable and documented waste management program to effectively handle the different categories of waste generated in the facility.

1.2. The program should clearly define the duties and responsibilities of staff members and establish levels of accountability.

1.3. The program should be reviewed annually in consultation with interested committees, departments and staff members.

1.4. A training program should be provided to ensure competency of staff...
with regard to:

- procedures for the segregation, collection, storage, labeling, handling and movement of hospital waste;

- personal hygiene, especially hand washing;

- the hazards of those materials to which workers may be exposed;

- the frequency of cleaning and disinfecting procedures;

- emergency procedures for treating accidental contact and spills; and

- disposal procedures of certain wastes.

1.5. To minimize occupational health risks, occupational health care programs must be prepared to make provision for:

- closed storage for volatile agents of waste which could cause a health hazard;

- the proper venting and exhausting of such storage facilities for volatile agents of wastes;

- appropriate personal protective equipment with disinfecting and disposal arrangements;

- an assessment of waste management procedures on a regular basis;

- training programs for all persons handling waste.
- appropriate protective equipment and hand washing facilities; and

- procedures to handle and report needle stick and other injuries sustained whilst handling waste.

1.6. Policy and procedures for managing spills of hazardous waste must be prepared and staff should receive training to recognize, manage and contain a spill condition.

1.7. Proper equipment must be available for the spill clean up of hazardous substances of waste and the protection of staff.

1.8. A policy for the maximum storage time of refrigerated/frozen human anatomical waste should be prepared and adhered to. (See Table 1 – Summary of Colour-Coding / Labeling, Storage Times and Final Disposal Requirements for times recommended).

1.9. A contingency plan should be prepared to deal with refrigerated and other medical waste in the event of refrigeration or disposal facilities becoming inoperative.

1.10. Sufficient provision for staff and resources should be made in the hospital budget for the effective operation of the waste management program.

2. Segregation

2.1 Hospital waste should be segregated at the source where it is generated into the following categories:
- human anatomical waste;

- infectious non-anatomical waste;

- sharps and similar waste;

- chemical/pharmaceutical waste;

- radioactive waste;

- pressurized container waste;

- general solid waste; and

- general liquid waste.

**Note:** Categories are further defined in Table 1.

### 3. Containment

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1.</td>
<td>Waste should be placed in suitable colour coded containers as detailed in Table 1 at the source where it is generated.</td>
</tr>
<tr>
<td>3.2.</td>
<td>Protective equipment and clothing must be worn at all times when human anatomical, infectious non-anatomical, cytotoxic or pharmaceutical wastes are handled.</td>
</tr>
<tr>
<td>3.3.</td>
<td>Infectious liquids must be contained in “Single Use Containers” before being placed in a yellow colour-coded waste container.</td>
</tr>
<tr>
<td>3.4.</td>
<td>Sharps and similar waste must be placed in puncture-proof sharps containers.</td>
</tr>
</tbody>
</table>
3.5. Sharps contaminated with cytotoxic material must be placed in designated cytotoxic sharps containers labeled as detailed in Table 1.

3.6. Bags containing waste should be closed thoroughly to prevent contents escaping. Double bagging should be used where necessary.

4. **Movement**

4.1. Manual handling of waste should be minimized.

4.2. Carts and vehicles used to move or transport waste should be designed to prevent spills and permit effective cleaning and disinfection.

4.3. Specific routes for the movement of wastes should be planned to minimize movement through patient care and clean areas.

4.4. Waste disposal chutes where provided should only be used for general waste.

4.5. Sharps containers should not be completely filled and lids must be securely in place before such containers are moved.

4.6. Transportation packages containing hazardous pharmaceutical waste products must be labeled in conformity with the Medicines and Related Substances Control Act, 1965 (Act 101 of 1965).

4.7. Potentially offensive unrefrigerated waste should be timeously removed for disposal.

4.8 Medical and general solid waste should be moved regularly (at least daily) to final storage or disposal facilities.
## 5. Storage

5.1. Intermediate and final storage areas must be separate from supply rooms or food preparation areas.

5.2. Only authorized personnel should have access to storage areas.

5.3. Separate lockable cold storage facilities should be provided to store perishable medical waste at a temperature of \(4^0\) C or lower where storage of these wastes for disposal is necessary.

5.4. Storage times for hospital wastes should be minimized (See Table 1.)

5.5. Storage facilities must be thoroughly cleaned and disinfected on a daily basis.

5.6. Adequate and suitable provision must be made for garbage bins with close fitting lids. Bins should be emptied and effectively cleaned daily.

## 6. Disposal

6.1. The hospital must dispose of all hospital waste in accordance with applicable legislation (National, Provincial or Local Authority).

6.2. Human anatomical waste must be incinerated in accordance with the requirements of the Human Tissue Act, 1983 (Act 65 of 1983).

6.3. Infectious waste should be incinerated or alternatively treated and disposed of in a manner acceptable to the regulatory authority.

6.4. Containers with sharps should be incinerated preferably on site or
disposed of in a manner acceptable to the regulatory authority.

6.5. Larger quantities of pharmaceutical waste should be returned to pharmaceutical firms for disposal.

6.6. Smaller quantities of pharmaceutical waste and cytotoxic drugs should be incinerated.

6.7. Cytotoxic drugs must never be disposed of in a sewer.

6.8. The handling and disposal of radioactive waste is subject to the Nuclear Energy Act, 1982 (Act 92 of 1982) and must be returned to the supplier for disposal.

6.9. Pressurized container waste should not be incinerated but should be disposed of with general solid waste or otherwise as directed by local legislation.

6.10. General solid waste must be disposed of as municipal waste.

6.11. Where general solid waste is disposed of on site, the disposal site and the manner in which the site is operated must be authorized by the Department of Environmental Conservation in terms of Section 20 of the Environmental Conservation Act, 1989 (Act 73 of 1989).

6.12. Incinerator ash in residue must be disposed of as hazardous waste as directed by local legislation.

6.13. The disposal of liquid general waste into sanitary sewers of the local authority must be in accordance with the authority’s by-laws.

6.14. Where liquid general waste is disposed of on site, the disposal sys-
tem must be well planned and operated in accordance with the permit requirements of the Department of Water Affairs. The disposal system must be operated in a manner that will prevent any danger to human health or any damage to the environment (land, water and air).

6.15. Expert advice should be obtained prior to the disposal of hazardous chemicals and the disposal of these substances must be in accordance with the requirements of national, provincial or local authority legislation.

6.16. Religious laws should be borne in mind when disposing human body parts.

6.17. The hospital incinerator should be operated by trained personnel that will ensure that proper burning rates and temperatures are maintained.

7. Specific structural requirements

7.1. Storage facilities for hospital wastes must:

- be totally enclosed and constructed in compliance with the National Building Regulations;

- be lockable and display the universal bio-hazard sign;

- be rodent and insect proof; and

- be finished (walls, floors and ceilings) to ensure thorough cleaning and disinfecting.

7.2. The sewerage system of the hospital must comply with the National
Building Regulations and the Local Authority by-laws and must be maintained in a good working order.

<table>
<thead>
<tr>
<th>8. Evaluation</th>
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</thead>
<tbody>
<tr>
<td><strong>8.1.</strong> Management should appoint the hospital’s infection control committee or a designated department to supervise the execution of the hospital’s waste management policy.</td>
</tr>
<tr>
<td><strong>8.2.</strong> An inspection program should be established to ensure that all procedures are followed and to determine training needs.</td>
</tr>
<tr>
<td><strong>8.3.</strong> The District Environmental Health Officer should perform regular monitoring investigations of the waste handling and disposal system.</td>
</tr>
<tr>
<td><strong>8.4.</strong> Personnel of other departments e.g. Air Pollution Control Officer, Department of Public Works and the Department of Water Affairs should be approached to also conduct monitoring investigations to determine whether waste disposal practices are in compliance with prescribed legislation.</td>
</tr>
<tr>
<td><strong>8.5.</strong> All incidents of injuries, infections and accidents pertaining to the handling of waste, must be monitored.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>9. Staff competency</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>9.1.</strong> Staff must be well trained in all routine and emergency procedures. All staff, whatever their position must know what is expected of them, and why it is important. Special attention should be given to illiterate workers.</td>
</tr>
<tr>
<td><strong>9.2.</strong> All staff must understand the cautionary labelling of all hazardous...</td>
</tr>
</tbody>
</table>
waste containers.

9.3. The District Environmental Health Officer that is rendering a service to the hospital should be competent to:

- assist with the inspection program to ensure that the waste management program and procedures are followed;

- monitor whether general solid or liquid waste disposal activities on site meet with prescribed requirements; and

- facilitate and collaborate with other interested role players e.g. management, infection control, health and safety committee and other departments with regard to waste control matters.

9.4. Hospital staff should educate patients and visitors in hospital hygiene and cleanliness with reference to waste.

10. Records

10.1. All incidents with regard to the occurrence and managing of spills of hazardous substances must be documented.

10.2. All injuries due to accidental contact with sharps must be documented.

11. Collaboration

11.1. Internal

Designated staff and supervisors should collaborate with management and hospital committees to ensure a satisfactory standard of
waste management.

11.2. **External**

Management in consultation with the Environmental Health Officer should where necessary, collaborate with other departments and authorities in connection with waste management matters. A directory of relevant role players should be maintained for this purpose by the hospital management.

<table>
<thead>
<tr>
<th>12. <strong>Standard references</strong></th>
</tr>
</thead>
</table>
10. Local Authority By-Laws.

11. Provincial Ordinances.


13. Specifications regarding the Safe and Hygienic Handling and Disposal of Medical Waste in the Bloemfontein Municipal Area as a guideline.

14. WHO/PEP/RUD 94.1 Corr.1 “Managing Medical Wastes in Developing Countries” as a guideline.


16. SABS 1186 (Specifications of Toxic Hazard Symbols) as a guideline.

**Note:** Most of the standards listed in this section have been identified and extracted from SABS Code of Practice 0248:1993 (“Handling and Disposal of Waste Materials within Health Care Facilities”). It is recommended that hospitals obtain a copy of this Code of Practice.
### TABLE 1

**SUMMARY OF COLOUR-CODING / LABELLING, STORAGE TIMES AND FINAL DISPOSAL REQUIREMENTS**

<table>
<thead>
<tr>
<th>WASTE CATEGORY</th>
<th>WASTE SUBCATEGORY</th>
<th>COLOUR CODING</th>
<th>LABELLING</th>
<th>SEALING</th>
<th>MAX. STORAGE TIMES</th>
<th>FINAL DISPOSAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Human anatomical waste</td>
<td>Human anatomical – tissue, organs, body parts and products of conception</td>
<td>Red</td>
<td>International bio-hazard logo</td>
<td>Sealing tape with international biohazard logo</td>
<td>1 week if refrigerated (4°C). 1 day if not refrigerated.</td>
<td>Incineration* at a temperature of at least 1100°C for any material containing more than 1 percent halogens in its chemical composition</td>
</tr>
<tr>
<td>2) Infectious non-anatomical waste</td>
<td>Infectious non-anatomical waste:</td>
<td>Yellow</td>
<td>International bio-hazard logo</td>
<td>Sealing tape with international biohazard logo</td>
<td>1 week if refrigerated (4°C). 1 day if not refrigerated.</td>
<td>Incineration* at a temperature of at least 1100°C for any material containing more than 1 percent halogens in its chemical composition. Infectious liquids may be decontaminated and disposed of in sewer (on site)</td>
</tr>
</tbody>
</table>
### 3) Chemical / pharmaceutical waste

Hazardous chemical waste is:
- Toxic
- Corrosive
- Flammable
- Reactive or
- Genotoxic

Pharmaceutical waste excluding cytotoxic pharmaceuticals waste comprises pharmaceutical products that are no longer usable in patient treatment or are no longer required.

Cytotoxic pharmaceutical waste

- Marked “Cytotoxic” boldly printed and Toxic hazard symbol WIV5 of S.A.B.S of 1186
- Sealed

**Incineration** as for human anatomical waste

### 4) Sharps and similar waste

Bio-contaminated – needles, syringes, blades, clinical glass and other clinical items capable of

- Yellow recommended
- Marked “SHARPS” and International Biohazard

**Incineration** as for human anatomical waste (container with
<table>
<thead>
<tr>
<th>5) Radioactive waste</th>
<th>Radioactive waste</th>
<th>Yellow recommended</th>
<th>Logo</th>
<th>Sealed</th>
<th>1 week</th>
<th>Incineration as for Human anatomical waste (container with sharps)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Note:</strong> This category of waste must be handled and disposed of in accordance with the Nuclear Energy Act, 1982 (Act 92 of 1982). Contact the “Centre for Radiation Control” Health Technology at 021-9486162</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6) Pressurized container waste</td>
<td>Pressurized container waste consists of aerosol cans or disposable compressed gas containers</td>
<td>Black / Dark green</td>
<td>Hazard logo</td>
<td>Sealed</td>
<td>1 week</td>
<td>Disposed with general waste</td>
</tr>
<tr>
<td>7) General solid</td>
<td>a) Office waste</td>
<td>Black /</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>waste</td>
<td>b) Kitchen waste</td>
<td>c) Non-clinical glass waste</td>
<td>d) Non-infectious non-anatomical waste (hair, nail clippings, teeth etc)</td>
<td>Dark green</td>
<td></td>
<td>general municipal waste</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>------------------</td>
<td>-----------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8) General liquid waste</td>
<td>Sewerage and waste waters</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>Disposed into municipal sewers / private sewage system</td>
</tr>
</tbody>
</table>

*Note: Infectious waste is normally disinfected by means of incineration (dry thermal disinfection). Other disinfection methods could be used prior to final disposal such as wet thermal disinfection (autoclaving at 160°C under high pressure) or disinfection by microwave or eradication. The use of these methods will largely depend on the availability of the appropriate equipment.
3.8. ACTIVITY AREA 8: INCINERATOR FACILITY

Introduction

Incinerators at district hospitals that are used for the disposal of hospital waste (including hazardous\(^6\) or medical\(^7\) waste) are regarded as waste disposal sites and need to be authorized in terms of Section 20 of the Environmental and Conservation Act, 1989 (Act 73 of 1989) by the Minister of Water Affairs.

The Departments for Environmental Affairs in the different provinces require a new facility to comply with the Environmental Impact Assessment Regulations 1998, published in the Government Gazette No 18261 of 5 September 1997, as part of the permitting process of the facility. The Department of Environmental Affairs and Tourism (Chief Air Pollution Control Officer) is responsible for the control of incinerators as these facilities are classified as scheduled processes. It is thus necessary to obtain a registration certificate

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\(^6\) Any material or substance not included under Medical Waste, that, if handled improperly, has the potential to harm people, property or the environment. It includes waste that has the potential to generate noxious or offensive gases.

\(^7\) Medical Waste: Any waste which is generated during the diagnoses, treatment or immunization of humans or animals; in research pertaining to this; in the manufacturing or testing of biological agents including blood; blood products and blood contaminated products; any body fluids or excretions; cultures; pathological wastes; sharps; human and animal wastes; isolation wastes; clinical wastes; pathogens; cytotoxic materials; toxic metals and low-grade radio-active materials. This includes any waste which, unless rendered safe, may prove hazardous or cause infection when anybody comes into contact with it.
in terms of Section 9(1) (a) (i) of the Atmospheric Pollution Prevention Act, 1965 (Act 45 of 1965) prior to the installation of an incinerator.

There is an allowance for upgrading of existing plants to the required standard within a specified period, provided that there is no unacceptable nuisance. In respect of medical waste incinerators in rural areas handling less than 10 kg of waste per day approval may be granted for a relaxation of the required standards.

The Chief Air Pollution Control Officer can delegate powers for the inspection and control of incinerators to local authorities, and certain requirements of the Hazardous Substances Act, 1973 (Act 15 of 1973), and the Occupational Health and Safety Act, 1993 (Act 85 of 1993), are also applicable.

**Norm**

The design, installation and operation of a hospital incinerator should comply with the requirements of the various controlling authorities.

**Standards**

1. **Incinerator requirements**

   1.1. If medical waste is disposed of on the hospital premises, an incinerator with primary and secondary burners should be provided.

   1.2. The required temperature measured in the secondary chamber should not be less than 1100° C for two seconds if waste materials containing 1% or more halogens are combusted.

   1.3. The chimney, instrumentation and sitting of the incinerator should be in compliance with the requirements of the Guidelines for the Design, In-
## 2. Operational directives

### 2.1. Materials destined for incineration should be of known origin and composition and may only be incinerated in a furnace that is suitable for the incineration of that particular type of waste.

### 2.2. Record should be kept of the mass and/or volume, the type and origin of the waste to be incinerated.

### 2.3. The incinerator should be operated strictly in accordance with the operating instructions.

### 2.4. The incinerator should be preheated to working temperature before charging any waste.

### 2.5. Overloading of the incinerator should be avoided at all times.

### 2.6. The incinerator should be kept in good working order at all times and should not be used if any component fails. Any malfunction should be recorded in a log book and reported to the relevant control authority.

### 2.7. The incinerator and its surrounds should be kept in a clean and neat condition at all times.

### 2.8. Personnel operating the incinerator must be informed of the potential hazards and precautionary measures including the wearing of suitable protective clothing.
2.9. Any injury caused by the handling of medical waste must be reported without delay to the supervisor.

3. **Competency of Staff**

3.1. The incinerator operator and all relevant staff should be trained to the satisfaction of the relevant control authority.

4. **Emission Limits**

4.1. All the emissions to air, other than steam or water vapour should be odourless and free from mist, fume and droplets.

4.2. The emission limits should not exceed limits as indicated in Par. 3.3.7 of the Guidelines for the Design, Installation and Operation of Incinerators.

5. **Evaluation**

5.1. The designated supervisor must ensure that the incinerator is operated continuously in accordance with the conditions of registration.

5.2. The District Environmental Health Officer should perform regular investigations of the facility to ensure that it is operated in compliance with acceptable environmental health and occupational hygiene standards.

5.3. Management should collaborate with the relevant national and local government departments to ensure that the incinerator is utilized
effectively as a waste disposal facility.

6. **Standard references**

1. Guidelines for the Design, Installation and Operation of Incinerators furnished by the Directorate Air Pollution Control of the Department of Environmental Affairs and Tourism, 6 February 1995. (It should be noted that all standards identified and listed for this facility have been extracted from these guidelines. It is recommended that District Hospitals that operate an incinerator obtain a copy of these guidelines.)


### 3.9. ACTIVITY AREA 9: OCCUPATIONAL HYGIENE STANDARDS IN THE HOSPITAL WORK ENVIRONMENT

#### Introduction

The Occupational Health and Safety Act, 1993 (Act 85 of 1993) requires the employer to bring about and maintain a work environment that is safe and without risk to the health of the workers. For the purpose of the Act the hospital manager is deemed to be the responsible employer who must ensure compliance with the occupational hygiene and safety requirements of the Act.

#### Norm

The hospital work environment should comply with prescribed occupational hygiene requirements.

#### Standards

1. **Responsibility of hospital management**

   1.1. The hospital manager must take all reasonable measures to protect employers against exposure to extreme thermal conditions as prescribed in the Environmental Regulations for Workplaces (ERFW) – protection of workers in cold environments (below 6 degrees Celsius) and warm environments (more than 30 degrees Celsius).

   1.2. Where noise levels in work places are 85 dB(A) or higher, the requirements of the ERFW regarding noise reduction, noise monitoring, worker protection and the maintenance of protection equipment must be complied with.
1.3. Exposure of employees to substances hazardous to health must be prevented as required by Regulations for Hazardous Chemical Substances (RHCS) and the Draft Regulations for Hazardous Biological Substances. Measures must include assessment of potential exposure, maintenance of control measures, air monitoring and training.

1.4. The disposal of hazardous substances must be in accordance with the requirements of the RHCS.

1.5. Management must apply control measures as prescribed by the General Administrative Regulations with respect to control of admission of persons to the workplace and where a worker is under the influence of intoxicating liquor or drugs or affected by medicine.

1.6. Management must, in accordance with the objectives of the Occupational Health and Safety Act, 1993 (Act 85 of 1993) ensure that matters pertaining to occupational hygiene are addressed by coordinating mechanisms such as the Health and Safety Committee and the Infection Control Committee, and that the Occupational Hygiene Practitioner (Environmental Health Officer) be co-opted as a member of these committees.

2. **Specific structural requirements**

2.1. The various work places in the hospital must be ventilated either by natural or mechanical means in such a manner that requirements with regard to air changes, air quality, indoor temperatures and indoor humidity stipulated in the ERFW and R158 are complied with.

2.2. The air conditioning systems provided in operating rooms, delivery and other special care rooms should deliver the air flow and air qual-
ity specified in R158.

2.3. In addition to window requirements, lighting must be provided and maintained in accordance with specific requirements and luminance values of the ERFW and R158.

2.4. Where workers are exposed to conditions in the workplace that pose a risk of infection, contamination or pollution, specific facilities such as change rooms, showers and dining rooms must be provided as required in the Facilities Regulations.

3. **Operational directives**

3.1. Adequate provision should be made in respect of resources necessary to implement precautionary and remedial occupational hygiene measures.

3.2. Policy and procedures must be developed with regard to environmental risk assessment in the workplace including the disclosure to workers of identified potential hazardous and precautionary measures that are necessary.

3.3. Documented instructions must be provided for the use, handling, storage and disposal of hazardous substances.

3.4. Operating procedures with regard to the various activities in the workplace must be documented and posted at strategic points to ensure that workers are made aware of such procedures.

3.5. House rules covering the following must be provided:

- Hygiene, eating, smoking and drinking;
- Information about emergency precautions and drills;
- The compulsory use of protective clothing and equipment.

3.6. The line of communication for reporting environmental related occupational disease and incidents should be determined to include the Occupational Hygiene Practitioner (Environmental Health Officer) to ensure prompt action where occupational hygiene measures are required.

3.7. Procedure for reporting accidents should be provided by the hospital management.

3.8. Job descriptions should clearly define the duties and responsibilities of designated staff members and establish lines of accountability with regard to occupational hygiene.

4. **Records**

4.1. The requirements prescribed in the General Administrative Regulations pertaining to the keeping of records and the investigations of incidents that need to be reported in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), as well as the endorsement of records by the Health and Safety Committee and Hospital Manager, must be complied with.

4.2. Up to date materials safety data sheets must be available to provide the necessary information for safe handling of dangerous or hazardous chemicals and to institute emergency control measures.

4.3. Updated operational and other relevant records as required by the
Occupational Health and Safety Act, 1993 (Act 85 of 1993) and regulations promulgated under this Act, must be available for the period as prescribed.

<table>
<thead>
<tr>
<th>5. Evaluation</th>
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<tbody>
<tr>
<td>5.1. Hospital management must conduct an assessment of all work environments in cycles of two years as required by regulations under the Occupational Health and Safety Act, 1993 (Act 85 of 1993) to determine if any worker is exposed to chemical or biological hazards. Monitoring must be performed as prescribed where exposure is identified by the assessment.</td>
</tr>
<tr>
<td>5.2. The responsible supervisor in cooperation with the Health and Safety Representatives must evaluate the occupational hygiene status in the relevant workplace and make recommendations in accordance with the reporting procedures.</td>
</tr>
<tr>
<td>5.3. Management should review occupational hygiene policy and procedures regularly to update or improve it where necessary.</td>
</tr>
<tr>
<td>5.4. Execution of Operational Directive Standards should be evaluated by management to ensure compliance.</td>
</tr>
<tr>
<td>5.5. The level of competence of workers should be evaluated to determine training needs.</td>
</tr>
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<tr>
<th>6. Competency of staff</th>
</tr>
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<tbody>
<tr>
<td>6.1. Management must ensure that all categories of workers are trained to a level of competence appropriate to their duties.</td>
</tr>
</tbody>
</table>
6.2. The District Environmental Health Officer should have knowledge of the Occupational Health and Safety legislation and should be competent to conduct workplace assessments and the necessary monitoring.

6.3. Workers must be informed and trained to be aware of hazards associated with the work they perform and about the precautionary measures which must be taken.

6.4. Management and / or designated staff members as well as Health and Safety Representatives must have appropriate training regarding their responsibilities in terms of the Occupational Health and Safety legislation and particularly of all the directives and requirements regarding the functioning of the Health and Safety committee structures.

7. **Collaboration**

There should be collaboration between the Departments of Health, Labour and Hospital Management to obtain the necessary interaction with regard to the application of legislation pertaining to Occupational Hygiene.

8. **Standard references**


3. Regulation 158 of 1980 (Regulations Governing Private Hospitals
and Unattached Theatre Units), promulgated in terms of section 44 of the Health Act, 1977 (Act 63 of 1977) as a guideline. The proposed amendment is Regulation R158 (Regulation Governing Patient Care Facilities).


5. General Administrative Regulations No R14496 of September 1996.


### 3.10. ACTIVITY AREA 10: INFECTION CONTROL

#### Introduction

The prevention, identification and control of biological hazards in district hospitals falls within the responsibilities of the infection control staff of the hospital. Environmental health and occupational hygiene personnel should also be involved in this function.

In addition to other standards in this document promoting “Infection Control”, the following standards focus specifically on the prevention and control of infections from an environmental health and occupational hygiene perspective.

#### Norm

Measures to prevent, identify and control environmental related infection should be instituted.
<table>
<thead>
<tr>
<th>Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Management's responsibility</strong></td>
</tr>
<tr>
<td><strong>1.1.</strong> The District Environmental Health Officer / Occupational Hygiene Practitioner should be co-opted to serve as a member on the Infection Control Committee.</td>
</tr>
<tr>
<td><strong>1.2.</strong> Provision should be made in the infection control program of the hospital for environmental health and occupational hygiene in respect of:</td>
</tr>
<tr>
<td>- policy and procedures;</td>
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<tr>
<td>- resources;</td>
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<tr>
<td>- surveillance;</td>
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<tr>
<td>- training; and</td>
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<tr>
<td>- consultation and communication.</td>
</tr>
<tr>
<td><strong>1.3.</strong> Policy / procedures with regard to environmental health and occupational hygiene should cover:</td>
</tr>
<tr>
<td>- detergents and disinfectants;</td>
</tr>
<tr>
<td>- waste handling;</td>
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<tr>
<td>- sharps handling;</td>
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<tr>
<td>- sterilizing and disinfection;</td>
</tr>
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</table>
- linen handling;

- mortuary protective measures;

- personal hygiene (Emphasis on hand washing);

- environmental related infections (recording);

- food handling (including food provided to patients by visitors);

- disease vector control;

- equipment handling;

- cleansing (general and specific);

- ventilation requirements; and

- water safety requirements and control of Legionella.

2. Clean environment and equipment

2.1. A cleansing program addressing the following issues should be implemented:

- general cleansing schedules;

- terminal cleansing requirements;

- high-risk area cleansing;

- cleansing schedule for dirty areas;
- damp dusting schedules;
- the use of disinfectants and detergents;
- cleansing materials and equipment;
- appropriate training;
- skilled supervision; and
- evaluation.

3. Training / Competency of staff

3.1. All hospital staff should be trained to be fully aware of the importance of infection control in the hospital. They should know how to follow environmental health and occupational hygiene procedures with regard to prevention and control of infection. Staff should know how to perform their duties in the various areas of the hospital.

3.2. The District Environmental Health Officer should be competent to advise the hospital management on environmental health and occupational hygiene requirements pertaining to infection control.

4. Evaluation

4.1. The surveillance program of the hospital should also assess the effectiveness of environmental health and occupational hygiene measures for infection control.

4.2. Targeted monitoring at scheduled intervals in respect of environmental health and occupational hygiene, e.g. air quality, contact
surfaces, water, food, etc. to detect potential sources of infection should be included as an activity in the surveillance program.

<table>
<thead>
<tr>
<th>5. Records</th>
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</thead>
<tbody>
<tr>
<td>5.1. Records should be kept as required in the Infection Control Policy and Procedures.</td>
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<tr>
<th>6. Collaboration</th>
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<tbody>
<tr>
<td>6.1. Management should promote collaboration between health services including environmental health and occupational hygiene to ensure the effective functioning of the multi-disciplinary infection control team.</td>
</tr>
<tr>
<td>6.2. Collaboration with the local authority and other relevant government departments should be maintained to ensure compliance with statutory requirements regarding the prevention, notification and control of infections and diseases.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>7. Standard references</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Provincial Health Department Policies and Protocols.</td>
</tr>
</tbody>
</table>
6. Regulation 158 of 1980 (Regulations Governing Private Hospitals and Unattached Theatre Units), promulgated in terms of section 44 of the Health Act, 1977 (Act 63 of 1977) as a guideline. The proposed amendment is Regulation R158 (Regulation Governing Patient Care Facilities).


<table>
<thead>
<tr>
<th>3.11. ACTIVITY AREA 11: ENVIRONMENTAL POLLUTION CONTROL</th>
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</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
</tr>
<tr>
<td>There is a strong emphasis in any community on improving conditions that have an effect on health, and on the promotion of physical and social environments that favour good health. For this reason the district hospital should operate in such a manner as to ensure that all the necessary precautionary measures are taken to reduce and control air, water, soil and noise pollution.</td>
</tr>
<tr>
<td><strong>Norm</strong></td>
</tr>
<tr>
<td>The necessary control measures should be taken to prevent or reduce environmental pollution.</td>
</tr>
<tr>
<td><strong>Standards</strong></td>
</tr>
<tr>
<td><strong>1. Operational directives</strong></td>
</tr>
<tr>
<td>1.1. The hospital management should have policy and procedures available to ensure that all the facilities which may give rise to pollution, operate effectively. The policy should clearly define the duties and</td>
</tr>
</tbody>
</table>
responsibilities of designated staff members and establish levels of accountability.

1.2. Sufficient provision for staff and resources should be made available in the hospital budget for the continuous effective and pollution-free operation of coal and fuel burning equipment and other relevant disposal facilities.

1.3. The requirements of the Tobacco Products Control Act, 1993, (act 83 of 1993) which include smoke free areas must be complied with.

1.4. Coal and fuel burning equipment – boilers and incinerators - must be operated effectively to minimize smoke, gas, odours, fly-ash or any other form of air pollution.

1.5. Private sewage disposal works or refuse (landfill) disposal sites managed by the district hospital must be operated effectively in accordance with prescribed legislation and permit conditions.

1.6. Any final effluent or sludge emanating from the sewage disposal works must be utilized in accordance with prescribed national guidelines to prevent soil and water pollution.

1.7. The sewage drainage system of the hospital must be maintained effectively to prevent blockages and spills that could give rise to environmental pollution.

1.8. Refuse bins must be provided at strategic places on the hospital premises to eliminate or minimize littering.

1.9. Disturbing noises emanating from hospital facilities (refrigeration machines, fan systems, compressors, air conditioners, etc.) must be
controlled not to exceed the “disturbing noise” level specified in Regulation R896 of 27 April 1990 promulgated in terms of the Environmental Conservation Act, 1989 (Act 73 of 1989). This refers to local authority areas where these regulations apply.

1.10 Hospital vehicles must not emanate noise that exceeds the limits that prescribed in Regulation R896 of 27 April 1990 where the measuring point is described in SABS 0181 of 1981.

<table>
<thead>
<tr>
<th>2. Equipment</th>
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</thead>
<tbody>
<tr>
<td>2.1 Only coal and fuel burning incinerators and boilers which conform to prescribed requirements must be used.</td>
</tr>
<tr>
<td>2.2. Incinerators and boilers must be maintained in good working order to ensure pollution free performance.</td>
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<thead>
<tr>
<th>3. Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1 Designated supervisors and the District Environmental Health Officer should monitor the incinerators and boilers so as to ensure that they are operating effectively in terms of permit conditions and the applicable local authority’s by-laws.</td>
</tr>
<tr>
<td>3.2. Where a hospital operates a private sewage disposal facility, the District Environmental Health Officer should periodically:</td>
</tr>
<tr>
<td>- monitor the quality of the final effluent to ascertain whether it complies with the effluent standards prescribed by Regulation 991 promulgated in terms of the Water Act, 1998 (Act 36 of 1998);</td>
</tr>
</tbody>
</table>
- monitor whether effluent is disposed of in compliance with the permit specifications of the Department of Water Affairs.

3.3. The Air Pollution Control Officer (National and Local Authority) and officials of the Departments of Labour, Environmental Conservation and Water Affairs should be approached to perform the necessary technical investigations to ensure that the coal and fuel burning equipment and other relevant disposal facilities are operated in accordance with the relevant department’s permit requirements.

4. **Records**

4.1. The necessary information concerning boiler and incinerator operations as required by permit conditions and legislation must be recorded.

4.2. Results of final sewage effluent analysis (where applicable) must be kept on record.

4.3. Results obtained from the local authority regarding smoke emission measurements should be recorded.

4.4. Information with regard to the measurement of noise levels in hospital workplaces must be recorded.

5. **Competency of staff**

5.1. Staff responsible for the operation of boilers and waste disposal works or facilities must be well trained to operate the facilities effectively and pollution free.
5.2. The District Environmental Health Officer that renders a service to the hospital should be competent to:

- carry out the necessary physical investigations to ensure that all waste management and disposal activities do not cause environmental pollution;

- monitor final effluent from sewage disposal works (where applicable) and interpret analysis results; and

- facilitate and collaborate with other role players e.g. management, infection control, health and safety committee, local authority and other departments with regard to environmental pollution matters.

5.3. The District Environmental Health Officer should be familiar with, and have access to the legislation, standard specifications and code of practices listed under the heading Standard References.

6. Standard references

1. Tobacco Products Control Act, 1993 (Act 83 of 1993.)

2. Existing permits for the lawful use of water or licences or permits for the operation of sewage purification works issued in terms of Section 21 of the National Water Act, 1998 (Act 36 of 1998), read with Section 32 of the National Water Act, 1998 (Act 36 of 1998).


5. Guide for the Permissible Utilization and Disposal of Treated Sewage Effluent issued by the Department of National Health, 30 May 1978.


### 3.12. ACTIVITY AREA 12: PEST CONTROL

#### Introduction

The degree of pest infestation in a hospital is indicative of the standard of hygiene and the success of control measures to prevent or eradicate infestation. Apart from a nuisance in general, these infestations could pose a serious health risk. Transmission of disease from infestations occurs in both the internal and external environment of the hospital through contamination of surfaces, food and water, or by direct vector transmission. Implementing control measures on a regular basis is necessary to prevent or eradicate infestation and should be effected by means of a continuous pest control program.

#### Norm

A district hospital should implement effective measures to prevent and control pest infestations.

#### Standards

1. **Responsibility of hospital management**

   1.1. Hospital management should ensure the effective formulation, implementation and maintenance of a documented pest control program to
combat and prevent infestations from insects, rodents and all other pests, e.g. birds, cats, bats, bees, fungus etc.

1.2. Hospital management should appoint a competent and suitably trained staff member to be responsible for the implementation and maintenance of the documented pest control program. In the case of a contractor rendering the pest control service, such a contractor must be registered in terms of the Agricultural Feeds and Fertilizer Act, 1971 (Act 51 of 1971) and be licensed by the relevant Local Authority.

1.3. The pest control / monitor program should be developed, in consultation with the District Environmental Health Officer, and should clearly define the duties of the responsible staff member / contractor as well as the duties and responsibilities of the various hospital sections.

1.4. The designated staff member / contractor should keep a register in which the following details should be recorded:

- Date of chemical applications;
- Areas treated;
- Chemicals used;
- Method/s of application;
- Quantity of chemicals used; and the

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For detailed information, contact the Directorate of Agricultural Information (Publications), Private Bag X144, Pretoria, 0001. Telephone: (012) 206-2181.
1.5. Hospital management should regularly monitor the effective execution of the pest control program.

1.6. Hospital management should make adequate provision for resources in the budget to ensure the execution of the pest control program on a continuous basis.

2. **Structural requirements**

2.1. The hospital’s physical structure must conform to prescribed building requirements and must be maintained in such a condition to prevent access and harbour of pests.

3. **Collaboration**

3.1. Hospital management, including the designated staff member / contractor should collaborate with:

- the District Environmental Health Officer who shall provide guidance with regard to tender conditions and assist in the evaluation of the program;

- the various sections of the hospital regarding their responsibility to implement the pest control program successfully; and

- other departments and authorities whose activities have bearing on pest control, i.e. the Department of Agriculture.

3.2. Hospital management should maintain a directory of relevant role-
players for the purpose of collaboration.

## 4. Operational directives

The following key aspects should be included in the pest control program:

### 4.1. Breeding

- Places promoting breeding of flying, crawling and parasitic pests should be identified and effectively eradicated. Special attention must be paid to disease vectors in malaria, plague, yellow fever, and typhus endemic areas.

### 4.2. Access

- Suitable measures must be taken to prevent intrusion of flying and crawling insects and rodents.

### 4.3. Waste collection and disposal facilities

- Waste collection and disposal facilities must be operated in a manner that does not favour the attraction and breeding of vermin.

### 4.4. Housekeeping

- Good housekeeping should be practised to maintain an acceptable standard of hygiene and to prevent pest infestation.

### 4.5. Monitoring investigations
- Monitoring investigations must be performed constantly to timeously detect vermin infestations.

- Any abnormal incidence of pests (e.g. mosquitoes and rodents) should be reported immediately to the District Environmental Health Officer.

4.6. **Insecticides / rodenticides**

- Only effective insecticides and rodenticides should be used\(^9\).

4.7. **Operators**

- Operators must use suitable protective clothing and gear.

- Empty poison containers must be effectively destroyed.

- Insecticides and rodenticides must be clearly labelled as prescribed.

4.8. **Parasitic insects**

- In the case of infestations clothing, bedding and linen must be suitably disinfested.

- Appropriate disinfestation measures must be taken in case of human parasite infestations.

4.9. **Equipment**

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\(^9\) See Department of National Health: “Guideline for Pest Control in Government Institutions”.
- Serviceable equipment should be used that will adequately perform the operations required\textsuperscript{10}.

4.10. **Transport and storage of pesticides**

- Pesticides must be packed and loaded for transport in such a manner that the containers will not break and will not spill.

- Pesticides must be stored separately from food and kept under lock and key. Storerooms must be kept clean, cool and well ventilated.

4.11. **First aid**

- First aid procedures.

5. **Training**

5.1. Appropriate training should be provided for staff engaged in pest control.

**Standard references**

1. Department of National Health: Guideline for Pest Control at Government Institutions\textsuperscript{11}.

2. Regulation 158 of 1980 (Regulations Governing Private Hospitals and Unattached Operating Theatre Units) promulgated in terms of Section

\textsuperscript{10} Official tests of various types of pest control equipment can be obtained from the Division of Agricultural Engineering, Private Bag X515, Silverton, 0127.

\textsuperscript{11} It is recommended that the hospital obtain a copy of this document.
44 of the Health Act, 1977 (Act 63 of 1977) as a guideline. The proposed amendment is Regulation R158 (Regulation Governing Patient Care Facilities).


4. Applicable Local Authority by-laws.


6. SABS Code 049 (Code of Practice for Food Hygiene Management).

7. SABS Code 0133 (Application of pesticides).


3.13. ACTIVITY AREA 13: MANAGEMENT

Introduction

Services with regard to environmental health and occupational hygiene can be considered fundamental services that are closely connected to most other hospital services. The responsibility for these services emanates from the various statutory requirements laid down by health and related legislation.
Such responsibility entails all aspects of management from regular planning to the effective implementation of strategies and the programs that are essential for ensuring health promotive environments in respect of all hospital physical facilities and supplementary services.

**Norm**

Management should effectively provide for the implementation of measures that will ensure achievement of standards relating to environmental health and occupational hygiene.

**Standards**

1. **Environmental Health and Occupational Hygiene policy**

1.1. The hospital management plan should make provision for the following:

   - hospital waste management;

   - pest control;

   - cleansing;

   - disinfecting, decontamination and sanitization;

   - training (functional and specific i.e., work place hazard training);

   - evaluation and monitoring programs;

   - maintenance (buildings, equipment);
- infection control; and

- other programs dealt with in this document.

1.2. Disaster management:

Hospital management should have a plan that includes contingency planning for the provision of water, electricity, food and waste removal in the event of a breakdown in services.

1.3. Management should provide supervisors with documented policy in respect of physical and supplementary facilities as dealt with in this document. Policies must be reviewed and updated regularly.

### 2. Financing of environmental health and occupational hygiene programs / activities.

2.1. Sufficient provision should be made in the hospital budget for the implementation and maintenance of environmental health and occupational hygiene programs / activities.

2.2. Funds should be allocated to environmental health and occupational hygiene activities according to pre-determined priorities.

### 3. Organization of environmental health and occupational hygiene programs / activities.

3.1. Management should allot dedicated functions and supervisory responsibilities to appointed staff members. Special attention should be paid to detailed job descriptions.
### 4. Personnel provision

| 4.1. | Sufficient human resources should be available to effectively implement and maintain the environmental health and occupational hygiene programs within the district hospital and personnel should be trained to a level of competence appropriate to their post requirements. |
| 4.2. | Personnel should continuously be informed in respect of important environmental health and occupational hygiene policies / procedure developments. |

### 5. Work procedures

| 5.1. | Work procedures in respect of the activities related to environmental health and occupational hygiene should be provided to effectively direct hospital personnel towards the achievement of the standards as dealt with in this document. |

### 6. Control of environmental health and occupational hygiene programs / activities

| 6.1. | Hospital management should ensure that the evaluation and |

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12 Role players for collaboration and consultation include the District Environmental Health Officer and other personnel from private and public institutions whose functions impact on environmental health and occupational hygiene. Public institutions include for example local authorities, Departments of Labour, Public Works, Water Affairs and Forestry, Health, Environmental Affairs and Tourism, etc. Coordinating mechanisms include for example the Infection Control
monitoring program of the hospital addresses all the environmental health and occupational hygiene activities with regard to the physical and supplementary facilities as dealt with in this document.

6.2. Management should ensure, through consultation, collaboration and coordination (inter- and multi-sectoral\(^\text{12}\)), that all programs, activities and responsibilities as dealt with in this document are effectively addressed.

### 7. Standard references


4. Regulation 158 of 1980 (Regulations Governing Private Hospitals and Unattached Theatre Units), promulgated in terms of section 44 of the Health Act, 1977 (Act 63 of 1977) as a guideline. The proposed amendment is Regulation R158 (Regulation Governing Patient Care Facilities).


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Committee, Health and Safety Committee and National and Provin- cial Health Policies.


10. Departmental budget directives.


4. Remarks

4.1. Although most standards in this document emanate from legislation and other recognized sources, there is still a need for formal policy that prescribes standards for:
   - medical waste;
   - governmental hospital establishments such as the regulations that apply to private health care establishments;
   - laundry services; and
   - hospital mortuaries where post mortem services are performed.

4.2. The activities as identified in this document, where environmental health and occupational hygiene standards apply, are those which are normally related to the range of services rendered by any hospital. Further research would be necessary, however, to confirm the full spectrum of activities that relate to environmental health and occupational hygiene at regional or specialized hospitals.

4.3. The achievement of the standards contained in this document will depend on the competency of the hospital and district health management and the availability of enabling legislation and resources. It
is therefore essential that appropriate training and goal-directed resource allocation be implemented.

4.4. In addition to the evaluation mechanisms identified in this document, an auditing system should be developed to enable the hospital management and the health authorities to determine the quality of facilities and services with respect to environmental health and occupational hygiene at district hospitals.

4.5. There is a need for guidelines to assist hospital management in their responsibilities regarding the formulation of policies, programs, procedures and criteria for the determination of priorities.

4.6. Environmental health personnel deployed in health districts should be orientated to function effectively with regard to the application of environmental health and occupational hygiene standards within district hospitals. It is therefore essential that short courses / training programs be developed to address this need.

4.7. Promulgation of legislation or amendment to existing legislation will necessitate the review of the standards in this document on a regular basis.

5. References

5.1. Acts of Parliament
• Nuclear Energy Act, 1982 (Act 92 of 1982).

5.2. **Regulations**


• R918 of 30 July 1999 (Regulations Governing General Hygiene Requirements for Food Premises and Transport of Food) promulgated in terms of the Health Act, 1977 (Act 63 of 1977) as amended.

• R237 of 8 February 1985 (Regulations Relating to Funeral Undertakers' Premises) promulgated in terms of the Health Act, 1977 (Act 63 of 1977) as amended.

• Draft Regulations (Hazardous Biological Substances) as proposed under the Occupational Health and Safety Act, 1993 (Act 85 of 1993).
• R2438 of 30 October 1987 (Regulations Relating to Communicable Diseases and Notification of Notifiable Medical Conditions) promulgated in terms of the Health Act, 1977 (Act 63 of 1977) as amended.

5.3. **SABS Specifications and Codes of Practice**

• SABS 0400 (Code of Practice For the Application of the National Building Regulations).

• SABS 241 of 1984 (Specification for Water for Domestic Supplies).
• SABS 0248 of 1993 (Handling and Disposal of Waste Materials within Health Care Facilities).
• SABS 1186 (Specifications of Toxic Hazard Symbols).
• SABS 0181 of 1981 (Code of Practice for the Measurement of Noise Emitted by Road Vehicles when Stationary).
• SABS 049 (Code of Practice for Food Hygiene Management).
• SABS 0133 (Application of Pesticides).
• SABS 0146 of 1999 (Laundry Processes and Management).

5.4. **World Health Organization**

• WHO Technical Report No. 297 of 1965 (Environmental Health Aspects of Metropolitan Planning).
• WHO/PEP/RUD 94.1 Corr.1 (Managing Medical Wastes in Developing Countries).

5.5. **CSIR**


5.6. **National Guidelines**

• Specifications Regarding the Safe and Hygiene Handling and Disposal of Medical Waste in the Bloemfontein Municipal Area,
Bloemfontein Municipality (Refuse Regulations, Notice No. 80 of 1992).

- Guidelines for the Design, Installation and Operation of Incinerators, Directorate Air Pollution Control, Department of Environmental Affairs and Tourism, 6 February 1995.
- Guide for the Permissible Utilization and Disposal of Treated Sewage Effluent, 30 May 1978, Department of National Health.
- Guideline for Pest Control at Government Institutions, Department of National Health.
- Proposed amendment to Regulation R158 (Regulation Governing Patient Care Facilities).

5.7. **Permits / Licences**