



BOTSWANA NATIONAL HEALTH QUALITY STANDARDS FOR HOSPITALS

29.Maintenance Service

These forms are designed to be used by both hospital personnel and external surveyors. The following information must be provided after each survey, before submitting the completed survey forms.

1. NAME OF HOSPITAL/CLINIC/FACILITY: _____

2. BASELINE/INTERNAL SURVEY INFORMATION:

Title and name of person who completed this document: _____

Post and position held: _____

Date of survey: _____

3. EXTERNAL SURVEY INFORMATION:

Name of external surveyor: _____

Date of external survey: _____

GUIDE TO COMPLETION OF FORM

N.B. Hospital staff are please to use BLACK ink at all times. The external surveyors are requested to use RED ink at all times.

Please circle the rated compliance with the criterion, e.g. NA (Not applicable), NC (Non-compliant), PC (Partially compliant), C (Compliant).

The default category affected is designated on the form for each criterion as follows:

1. patient and staff safety
2. legality
3. patient care
4. efficiency
5. structure
6. basic management
7. basic process
8. evaluation

The seriousness of the default is designated on the form for each criterion as follows:

1. mild
2. moderate
3. serious
4. very serious

Documents Checked

Surveyor:

Surveyor:



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29.1 Management of the Service

29.1.1 Standard

The maintenance service is managed to ensure the provision of a safe and effective service.

Standard Intent: An individual, who is suitably qualified and with proven competence, is appointed to manage the service. The accountabilities and responsibilities of this individual are clearly defined.

The manager possesses documentation outlining relevant laws, regulations and other requirements applicable to the organisation's facilities.

The national legislation referred to in criterion 29.1.1.5 is that which relates to safety of the buildings, plant, machinery, electrical installations, water supplies and any other components of the physical facility that require specific legally-mandated attention, such as mandatory safety inspections, etc.

	Criterion	Comments
		Recommendations
Criterion 29.1.1.1 Critical: '' Catg: Basic Management + Efficiency Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	A designated individual is assigned responsibility for management of the service.	
Criterion 29.1.1.2 Critical: '' Catg: Basic Process + Efficiency Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	The responsibilities of the manager are defined in writing.	
Criterion 29.1.1.3 Critical: '' Catg: Basic Process + Efficiency Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	The maintenance manager identifies the requirements of the organisation's maintenance programme which informs the budgeting process.	



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Criterion 29.1.1.4 Critical: .. Catg: Basic Process + Pat & Staff Safety Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	The manager works with the multidisciplinary team to develop and implement risk management systems according to organisation policy.	
Criterion 29.1.1.5 Critical: .. Catg: Basic Process + Legality Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	Policies and procedures to enable the organisation to comply with national legislation are implemented.	

29.1.2 Standard

There is an adequate number of suitably qualified and/or experienced personnel to provide a safe and effective service.

Standard Intent: Management ensures that there is an adequate number of competent personnel available to manage routine and emergency functions to meet the needs of a safe and effective health service. Personnel may be in the employ of the organisation or contracted out. Where contracted personnel are utilised, there need to be clear contracts which outline their responsibilities. Personnel need to have their roles clearly defined and management needs to ensure that they maintain competence.

	Criterion	Comments
		Recommendations
Criterion 29.1.2.1 Critical: .. Catg: Basic Management + Efficiency Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	There are sufficient, suitably trained and/or experienced personnel to manage the organisation's buildings, plant and machinery.	
Criterion 29.1.2.2 Critical: .. Catg: Basic Management + Efficiency Compliance NA NC PC C Default Severity for NC or PC = 2 Moderate	Where there are no in-house personnel to perform these functions, the services of consultants/service providers are utilised.	



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<p>Criterion 29.1.2.3</p> <p>Critical: ..</p> <p>Catg: Basic Management + Efficiency</p> <p style="text-align: center;">Compliance</p> <p style="text-align: center;">NA NC PC C</p> <p>Default Severity for NC or PC = 4 Very Serious</p>	<p>Names of specialist service contractors for buildings, plant and machinery are available, with their locations, telephone numbers and the responsible persons specified.</p>	
<p>Criterion 29.1.2.4</p> <p>Critical: <input type="checkbox"/></p> <p>Catg: Basic Management + Efficiency</p> <p style="text-align: center;">Compliance</p> <p style="text-align: center;">NA NC PC C</p> <p>Default Severity for NC or PC = 4 Very Serious</p>	<p>There is a system for the provision of emergency technical backup, twenty four (24) hours a day, seven (7) days a week.</p>	



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29.2 Facility Management

29.2.1 Standard

The organisation provides planned maintenance and replacement processes, to ensure the safety of facilities, plant and machinery.

Standard Intent: The first consideration for any physical facility is the laws, regulations and other requirements related to that facility. Such requirements may differ depending on the age of the facility, the location of the facility and other factors. The organisation's leaders, including governance and senior management, are responsible for knowing what national and local laws, regulations and other requirements are applicable to the organisation's facilities, and for implementing the applicable requirements.

Prevention and planning are essential to creating a safe and supportive patient care facility. The organisation's leaders, including governance and senior management, are responsible for planning and budgeting for the necessary upgrading or replacement and for showing progress made in meeting those plans. It should be evident that available resources are optimally utilised in providing a safe, effective and efficient facility.

The maintenance manager ensures that organisational policies and procedures are implemented. These policies comply with current legislation.

Monitoring essential systems helps the organisation to prevent problems and provides the information necessary to make decisions on system improvements and to plan for the upgrading or replacement of utility systems.

	Criterion	Comments
		Recommendations
Criterion 29.2.1.1 Critical: .. Catg: Basic Process + Physical Struct Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	The facility has a documented preventive maintenance management programme or systems in place.	
Criterion 29.2.1.2 Critical: 0 Catg: Basic Process + Physical Struct Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	The department holds regular, documented, current and accurate inspections of its physical facility, plant and machinery.	



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Criterion 29.2.1.3 Critical: '' Catg: Basic Process + Pat & Staff Safety Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	The inspection identifies remedial action required to address situations that could have an impact on health and safety issues.	
Criterion 29.2.1.4 Critical: '' Catg: Basic Process + Physical Struct Compliance NA NC PC C Default Severity for NC or PC = 3 Serious	Air-conditioning is installed in theatres and sterilising departments and is tested and maintained.	
Criterion 29.2.1.5 Critical: '' Catg: Basic Process + Physical Struct Compliance NA NC PC C Default Severity for NC or PC = 3 Serious	Temperature and ventilation control mechanisms are installed and maintained in the pharmacies, kitchens, laundries and other relevant areas.	
Criterion 29.2.1.6 Critical: 0 Catg: Basic Process + Physical Struct Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	Emergency generators are tested on full load according to manufacturers' specifications.	
Criterion 29.2.1.7 Critical: '' Catg: Basic Process + Physical Struct Compliance NA NC PC C Default Severity for NC or PC = 3 Serious	There are site and floor plans that depict the locations and layout of the main services (viz. water, sanitation, electricity supply).	



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29.2.2 Standard

Medical gas systems are regularly inspected, maintained and, when appropriate, improved.

Standard Intent: The organisation plans its needs for oxygen supplies according to the needs of the patients served.

Policies and procedures are available and followed relating to the storage, testing and safety of gas supplies.

Gas cylinders are stored chained in the upright position in outside storage areas that have appropriate safety warning signs in the form of "no entry", "no naked flames", "no smoking" and, in the case of oxygen, "no oil".

Portable gas supplies are stored in appropriate brackets or specific holders, in designated areas only.

Emergency oxygen supplies ensure that the number of available outlet points meet patient needs. Where there is no piped oxygen and vacuum supply, there is at least one mobile oxygen supply and one suction machine per ward, and more depending on the number of beds/cots in the ward. All necessary fittings for oxygen and suction are suitable for all patients, including children, and are in good working condition.

	Criterion	Comments
		Recommendations
Criterion 29.2.2.1 Critical: '' Catg: Basic Management + Physical Struct Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	Medical gases (oxygen, nitrous oxide and medical air) supplies are available according to the operational requirements of the institution.	
Criterion 29.2.2.2 Critical: '' Catg: Basic Management + Physical Struct Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	Medical gas supply systems comply with safety standards.	
Criterion 29.2.2.3 Critical: '' Catg: Basic Process + Physical Struct Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	Where there is piped gas, the enclosure, gas bank, pressure regulators, related control/alarm systems and all outlet points are clean and in good operating condition.	



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Criterion 29.2.2.4 Critical: 0 Catg: Basic Process + Physical Struct Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	Where there is piped gas, the main oxygen supply system is fitted with an alarm which operates automatically in the event of low pressure in the gas supplies and is regularly tested and documented.	
Criterion 29.2.2.5 Critical: '' Catg: Basic Process + Physical Struct Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	Medical gas alarm systems are regularly tested and documented.	
Criterion 29.2.2.6 Critical: '' Catg: Basic Process + Physical Struct Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	Backup supplies of medical gases are available and strategically positioned to ensure timely deployment in emergencies.	

29.2.3 Standard

Medical vacuum systems are regularly inspected, maintained and, when appropriate, improved.

Standard Intent: The organisation plans its needs for vacuum supplies according to the needs of the patients served.

Policies and procedures are available and followed relating to the testing and safety of pipeline vacuum systems and mobile/portable electric suction units. Vacuum systems are regularly tested in accordance with national arrangements or manufacturers' instructions.

	Criterion	Comments
		Recommendations
Criterion 29.2.3.1 Critical: '' Catg: Basic Management + Physical Struct Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	Where there is a piped vacuum system, it is externally ventilated and able to provide sufficient suction to all piped vacuum points in the hospital.	



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Criterion 29.2.3.2	Where there is piped vacuum, backup facilities are provided.	
Critical: ''		
Catg: Basic Management + Physical Struct		
Compliance		
NA NC PC C		
Default Severity for NC or PC = 4 Very Serious		



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29.3 Emergency Preparedness

29.3.1 Standard

The organisation has a process, which is tested on a regular basis, to protect facility occupants in the event of water or electrical system disruption, contamination or failure.

Standard Intent: The organisation needs to protect patients and personnel in emergencies such as system failure, interruption or contamination.

To prepare for such emergencies, the organisation identifies the equipment, systems and locations that pose the highest risk to patients and personnel. For example it:

- Identifies, where there is a need for illumination, refrigeration, life-support, and clean water for cleaning and sterilisation supplies
- assesses and minimises the risks of total utility system failures in these areas
- tests the availability and reliability of emergency sources of power and water, and
- documents the results of tests.

Water quality can change suddenly due to many causes, some of which can be outside the organisation, such as a break in the supply line to the organisation, or contamination of the city's water source. An uninterrupted source of clean water is essential to meet patient care needs, both routine and urgent, 24 hours a day. Regular and alternate sources such as boreholes can be used. In the event of the overhead reservoir tank being the only alternative source, note that if the problem is due to contamination of the town's supply, then it is likely that the contents of the tank will also be contaminated. It is thus necessary to have contingency plans in place for the provision of drinkable water via tanker from some other source.

Water quality is also a critical factor in clinical care processes such as chronic renal dialysis. Thus, the organisation establishes a process to regularly monitor water quality, including the regular biological testing of water used in chronic dialysis. The frequency of monitoring is based in part on previous experience with water quality problems. The monitoring can be carried out by individuals designated by the organisation, such as personnel from the clinical laboratory, or by public health or water control authorities outside the organisation.

An uninterrupted source of electricity is essential to meet patient care needs, both routine and urgent, 24 hours a day. Regular and alternate sources can be used.

Critical points to be lighted by emergency power are identified and listed. These include:

- operating theatres and recovery rooms
- delivery rooms' lights and sockets
- strategic lights and sockets in ward corridors
- critical care wards
- the neonatal nursery, and
- casualty and trauma areas.

Emergency electricity supplies:

- each bed/cot/crib is serviced by at least two electricity socket outlets
- each patient care area is provided with a socket outlet which is connected to the emergency power supply, provided that at least one emergency supply socket is available per three beds
- all emergency supply socket outlets are appropriately demarcated.

Records of all checks are available.

Monitoring data are collected and documented for the medical utility management programme and monitoring data are used for the purposes of planning and improvement.

Criterion	Comments
	Recommendations



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Criterion 29.3.1.1 Critical: <input type="checkbox"/> Catg: Basic Management + Physical Struct Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	Electrical power is available 24 hours a day, seven days a week, from regular or emergency sources.	
Criterion 29.3.1.2 Critical: <input type="checkbox"/> Catg: Basic Management + Physical Struct Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	The areas and services at greatest risk when power fails have been identified and provision has been made for an emergency electrical supply.	
Criterion 29.3.1.3 Critical: <input type="checkbox"/> Catg: Basic Process + Efficiency Compliance NA NC PC C Default Severity for NC or PC = 3 Serious	The organisation ensures that relevant personnel are trained to use/operate electrical supply systems to access power in emergencies.	
Criterion 29.3.1.4 Critical: <input type="checkbox"/> Catg: Basic Process + Efficiency Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	Servicing and testing of the uninterruptible power supplies (UPS) and/or battery backup systems is documented.	
Criterion 29.3.1.5 Critical: <input type="checkbox"/> Catg: Basic Management + Physical Struct Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	Regular and/or emergency water supplies, including drinkable water, are available 24 hours a day, seven days a week.	



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Criterion 29.3.1.6 Critical: '' Catg: Basic Management + Physical Struct Compliance NA NC PC C Default Severity for NC or PC = 3 Serious	Should the water supply be contaminated or interrupted, the areas and services at risk have been identified and provision has been made for an alternative water supply.	
Criterion 29.3.1.7 Critical: '' Catg: Basic Process + Efficiency Compliance NA NC PC C Default Severity for NC or PC = 3 Serious	Relevant personnel are trained to ensure that all operations to secure safe water are properly performed.	
Criterion 29.3.1.8 Critical: '' Catg: Basic Process + Efficiency Compliance NA NC PC C Default Severity for NC or PC = 3 Serious	All water supplies are tested and the results are documented on a regular basis.	



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29.4 Quality Improvement

29.4.1 Standard

A formalised proactive quality improvement approach is maintained in the service.

Standard Intent: This refers to the implementation of organisational quality improvement processes (Service Element 8).

It is the responsibility of management of the organisation to ensure that standards are set throughout the organisation. Within each department or service, it is the responsibility of managers to ensure that standards are set for the particular department. This requires coordination with the organisation's central/management/coordinating quality improvement structures or systems. Departmental managers use available data and information to identify priority areas for quality monitoring and improvement.

Quality monitoring could include:

- percentage of backlog in repairs
- number of call backs (repeat-repairs)
- number of preventive maintenance inspections done
- number of call-outs
- downtime on equipment/plant/machinery
- personnel productivity indexes
- number of negative incidents
- number of operator errors, and
- compliance to periodic operator maintenance schedule.

The following will be evaluated:

- problems identified in this service for which quality improvement activities were initiated
- the processes put in place to resolve the problems
- the identification of indicators to measure improvement
- the tool(s) used to evaluate these indicators
- the monitoring of these indicators and corrective steps taken when goals were not achieved
- graphed and/or tabled results, as appropriate.

	Criterion	Comments
		Recommendations
Criterion 29.4.1.1 Critical: .. Catg: Evaluation + Efficiency Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	There are formalised quality improvement processes for the service that have been developed and agreed upon by the personnel of the service.	
Criterion 29.4.1.2 Critical: .. Catg: Evaluation + Efficiency Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	Indicators of performance are identified to evaluate the quality of the service.	



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Criterion 29.4.1.3	The quality improvement cycle includes the monitoring and evaluation of the standards set, and remedial action implemented.	
Critical: ..		
Catg: Evaluation + Efficiency		
Compliance		
NA NC PC C		
Default Severity for NC or PC = 4 Very Serious		

29.5 Prevention and Control of Infection

29.5.1 Standard

The department/service implements infection prevention and control processes.

Standard Intent: This refers to the implementation of organisational processes for infection prevention and control (Service Element 9).

	Criterion	Comments
		Recommendations
Criterion 29.5.1.1	Infection control processes include prevention of infection by using appropriate protective clothing in high risk clinical areas.	
Critical: ..		
Catg: Basic Process + Pat & Staff Safety		
Compliance		
NA NC PC C		
Default Severity for NC or PC = 4 Very Serious		
Criterion 29.5.1.2	Infection control processes include effective hand washing procedures.	
Critical: ..		
Catg: Basic Process + Pat & Staff Safety		
Compliance		
NA NC PC C		
Default Severity for NC or PC = 4 Very Serious		
Criterion 29.5.1.3	The department identifies the procedures and processes associated with the risk of infection and implements strategies to reduce risk.	
Critical: ..		
Catg: Basic Process + Pat & Staff Safety		
Compliance		
NA NC PC C		
Default Severity for NC or PC = 4 Very Serious		



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29.6 Risk Management

29.6.1 Standard

The department/service implements risk management processes.

Standard Intent: This refers to the implementation of organisational risk management processes (Service Element 7).

	Criterion	Comments
		Recommendations
Criterion 29.6.1.1 Critical: '' Catg: Basic Process + Pat & Staff Safety Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	The department conducts ongoing monitoring of risks through documented assessments as part of organisational risk management processes.	
Criterion 29.6.1.2 Critical: '' Catg: Basic Process + Pat & Staff Safety Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	A system for monitoring incidents/near misses/sentinel/adverse events is available and includes the documentation of interventions and responses to recorded incidents.	
Criterion 29.6.1.3 Critical: '' Catg: Basic Process + Pat & Staff Safety Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	Security measures are in place and are implemented to ensure the safety of patients, personnel and visitors.	
Criterion 29.6.1.4 Critical: '' Catg: Basic Process + Pat & Staff Safety Compliance NA NC PC C Default Severity for NC or PC = 4 Very Serious	Fire safety measures are implemented.	



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Criterion 29.6.1.5	Organisation policy on handling, storing and disposing of healthcare waste is implemented.	
Critical: ..		
Catg: Basic Process + Pat & Staff Safety		
Compliance		
NA NC PC C		
Default Severity for NC or PC = 4 Very Serious		