



TO WHOSOEVER IT MAY CONCERN

This is to certify that the information in the attached documents is verified by me and is true to the best of my knowledge.

Principal

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KMCT Medical College
Manassery P.O.
Kozhikode

	KMCT MEDICAL COLLEGE HOSPITAL, MOKKAM		Doc. No.	E/HCO /KMCT / FMS / 1-4
	FACILITY MANAGEMENT AND SAFETY		Issue No.	01
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1.0 PURPOSE:

- 1.1 To provide guidelines for ensuring safety of Patients, their Families, Staff and Visitors.

2.0 SCOPE:

- 2.1 Hospital wide

3.0 RESPONSIBILITY:

- 3.1 Administrative Head
3.2 General Manager
3.3 Security Head
3.4 Maintenance department Staff
3.5 Safety Committee

4.0 ABBREVIATION:

- 4.1 NABH : National Accreditation Board For Hospitals and Healthcare providers
4.2 FMS : Facility Management and Safety
4.3 HMIS : Hospital Management Information System
4.4 CA : Corrective Action
4.5 PA : Preventive Action

5.0 REFERENCE:

- 5.1 NABH: Pre Accreditation Entry Level Standards for Hospitals, First Edition, April 2014.
5.2 FMS.1.: The organization's environment and facilities operate to ensure safety of patients, their families, staff and visitors.
5.3 FMS.2.: The organization has a program for clinical and support service equipment management.



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5.4 FMS.3.: The organization has provisions for safe water, electricity, medical gas and vacuum systems.

5.5 FMS.4.: The organization has plans for fire and non-fire emergencies within the facilities.

6.0 POLICY:

6.1 Safety Policy:

- The hospital aims to provide a safe facility for all its occupants.
- This shall be accomplished by a Facility management and Safety Committee, which shall oversee all aspects of Facility Safety:
- Preventive and breakdown maintenance Schedule are monitored and carried out by the Maintenance department, viz Biomedical Engineer, Site Engineer, Electrical Engineer & Electrician, and House Keeping Supervisor.
- Drawings (site layout, floor plan and fire escape route) shall be maintained in each floor in a visible manner.
- Fire escape is marked in each area with Red color by Site Engineer.
- Internal and external sign posting in the organization shall be maintained in a language understood by patient, families and community – responsibility House Keeping Executive.
- The provision of space shall be in accordance with the available literature on good practices.
- Space is provided for the proper functioning of the department.
- A comprehensive safety inspection shall be done twice a year in patient care areas and once a year in other areas by Site Engineer and Electrical Contractor.
- A report shall be generated after each inspection by maintenance department in-charge which shall be discussed in Facility Management and Safety Committee Meeting and shall form the basis for safety.



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k) Records are maintained and monitored at the time of reporting for taking corrective and preventive action.

l) Response times are monitored from time of reporting to time of inspection and time of implementation of corrective actions.

m) A complaint attendance register shall be maintained to indicate the date and time of receipt of complaint, allotment of job and completion of job.

6.2 **Safety committee:** The Safety Committee shall conduct Hazard Identification and Risk Analysis (HIRA) and accordingly take necessary steps to eliminate or reduce such hazards and associated risks. The committee shall comprise of the following members:

- Administrator
- Medical Superintendent
- Nursing Superintendent
- Maintenance In-Charge
- Clinicians
- Paramedical staff

6.3 **Patient-safety devices:** Patient-safety devices shall be installed across the organization and inspected periodically. The devices are:

- Grab-bars
- Bed-rails
- Sign postings
- Safety belts on stretchers and wheelchairs
- Alarms – both visual and auditory
- Warning signs – radiation or biohazard
- Call bells
- Fire safety devices

6.4 **Facility Inspection Rounds:**

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- a) Facility inspection rounds shall be conducted by Safety Committee to ensure safety at least twice in a year in patient care areas and at least once a year in non patient care areas.
- b) Potential safety and security risks enlisted including hazardous materials checklist are identified during the rounds.
- c) The finding of the rounds are documented and the CA / PA measures are taken to rectify the faults.

6.5 Safety Education for Staff:

- a) All staff are educated about safety requirements – in both patient care areas and non-patient care areas
- b) There shall be regular safety training covering Fire safety, Hazardous materials, use of Personal Protective Equipment, Bio-Medical waste Management, etc.
- c)

7.0 PROCEDURE:

7.1 The hospital adheres to the following applicable laws and regulations:

- a) Bio-medical Waste Management and Handling Authorization
- b) Registration With Local Authorities
- c) License to Store Compressed Gas
- d) Sanction for Lifts
- e) X-ray (including portable and cath lab)
- f) PNDT Act Registration
- g) Blood bank License
- h) License for MTP
- i) Pharmacy Drugs-Bulk license
- j) Drugs-Retail license
- k) Canteen/ F & B license

7.2 The hospital has identified Administrator as the person who will maintain a record of the above Licesences and regularly update their renewals.

7.3 Equipment planning:


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- a) The organization has a proper equipment planning system that takes in to account the future requirements of the organization in accordance with its scope of services and strategic plans.
- b) The plans shall be reviewed periodically or as and when required.
- c) All equipments are selected, rented, updated and upgraded by collaborative process.
- d) There is involvement of the end-users, management, finance, engineering and biomedical departments in the selection of equipments.

7.4 Equipment management:

- a) All equipments are inventoried and proper logs maintained in the Registers, including rental equipments or equipments brought for demonstration purposes.
- b) All equipments are allotted asset tags.

7.5 Equipment Maintenance:

a) Routine maintenance:

- 7.5.a.1 The Biomedical Engineer is responsible for the overall management and upkeep of the Bio - medical equipments.
- 7.5.a.2 Designated staff is responsible for daily maintenance of equipments based on daily monitoring checklist/Weekly monitoring /monthly monitoring.
- 7.5.a.3 Deficiency details are documented in equipment break down book and the same is communicated to the chief biomedical engineer

b) Breakdown Maintenance:

- 7.5.b.1 All breakdown entries are made in the Registers.
- 7.5.b.2 The complaint is registered and complaint number is generated.
- 7.5.b.3 Bio medical engineer is assigned or directed to the site for rectification as per first line service guidelines.
- 7.5.b.4 If it is minor break down, corrective actions are taken by the biomedical engineer with the available spare parts in-house within 2-3 hours and the same



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is documented in the breakdown register with the time of rectification details and it is counter signed by the biomedical engineers who have performed the tests.

7.5.b.5 If the problem is not solved, the service engineer is put forward to the service engineer depending upon the warranty/AMC and further plan of action is decided.

7.5.b.6 Average down time is 1-2 days based on the type of break down.

7.5.b.7 The details are updated in to the daily breakdown report and follow up is done.

c) Preventive maintenance:

7.5.c.1 The Biomedical Engineer prepares and maintains a maintenance plan as per the list of available equipments.

7.5.c.2 The Preventive Maintenance of instrument having an AMC/CMC contract is done by communicating with Bio-Medical engineer and company engineer.

7.5.c.3 A schedule is prepared by the biomedical department for preventive maintenance as per the manufacturer recommendation.

7.5.c.4 All medical equipments undergo preventive maintenance at prescheduled period.

7.5.c.5 The concerned department is informed about the schedule of the equipment for preventive maintenance well in advance, so that they can keep the equipment free for required time period.

7.5.c.6 The availability of necessary spares, consumables, tools and necessary materials are ensured through standardization and /or advance planning, through Stores and guidance by Head of Bio Medical Department.



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7.5.c.7 After completion of maintenance (whether preventive or breakdown) the OK report is taken from the user department and also an acknowledgment is taken from user department.

7.5.c.8 All preventive maintenance jobs done are recorded in History Card maintained for each equipment / devices (unit wise)

d) **Water Management:**

7.5.d.1 All water storage tanks shall be cleaned and treated periodically, at regular intervals of 6 months.

7.5.d.2 The RO plant shall be tested regularly every 6 days and undergo maintenance every 3 months.

e) **Electrical System Maintenance:**

7.5.e.1 All electrical systems, transformers, LT and / or HT panels and lifts shall be covered under the periodic maintenance plan; engineering department is responsible for this.

7.5.e.2 In case of failure , power would be supplied by Generator and UPS system

f) **HVAC Maintenance:**

7.5.f.1 All elements of HVAC – chiller plant, air handling units (AHUs), FCU, air-conditioners – shall be covered under the periodic maintenance plan of the engineering department.

Safety of electrical maintenance : Refer Safety manual

7.6 Maintenance plan for medical gas & vacuum system :

a) Medical gases form the very backbone of an SHCO. Without them it would be impossible to run a healthcare organization, as they play an essential role in the functioning of critical care units and key operational areas.



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5) In case of any deviations, defects in equipments or failures of calibration/quality control the staff will bring it to the notice of technical manager.

18.5.3. Maintenance of Equipment:

- 1) The maintenance schedule is as per the manufacturer's specifications. Technical manager prepare a maintenance schedule for all equipment's in the section and display it as work instructions for the use of staff.
- 2) Daily, weekly and monthly maintenance is done for equipment as per the specifications of manufacturer. Each lab section has the schedule for such maintenance.
- 3) The equipment is maintained in appropriate environmental conditions, as per manufacturer's specifications.
- 4) Preventive maintenance Frequency is as specified by manufacturer, and schedule of preventive maintenance is available with technical manager.
- 5) Biomedical Department coordinates with servicing agency for executing preventive maintenance. Delays are avoided in carrying out preventive maintenance service.

18.5.4. Handling Equipment Breakdown and Repair:

- 1) In case of a breakdown of equipment, immediate information is given to the Technical manager who coordinates with service engineers/manufacturer for repair/service.
- 2) If the breakdown affects test result reporting, the users are informed about it. The lab section informs sample collection centre and reception in particular about the delay in reporting results.



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- 3) In case of "urgent test requests", if the repair is not possible immediately or within the turnaround time of tests, the KMCT/CL makes the arrangement to send the sample to referral laboratory, and get the samples analyzed. KMCT/CL is responsible for providing reports to users.
- 4) Defective equipment is taken out of service and clearly labeled as "out of service". The breakdown is recorded.
- 5) Defective equipment is not used till it is repaired and verified for meeting the specified acceptance criteria before bringing to routine use.
- 6) Whenever the equipment goes outside the direct control of the laboratory, the laboratory will ensure that the function and calibration status of the equipment are checked and shown to be satisfactory before the equipment is returned to service in the laboratory.
- 7) Once the equipment starts working satisfactorily, the information on resumption of test procedures (if halted due to breakdown) is given to users. Technical manager is the person authorized to decide resumption of test procedures.
- 8) The action taken in case of breakdown is recorded in a register (KMCT/CL/QMS/REG/EOB/07).

18.5.5 Calibration of Equipment:

- 1) Each lab section maintains master equipment which has the calibration due dates of all equipment's in the section. Based on the due date, Technical manager coordinates with service engineers one month in advance.
- 2) Technical manager corresponds with manufacturer/service engineer and arranges for the calibration by the due date.

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- 3) Calibration is done using calibrators /other reference materials, metrological traceability of which are available and recorded. The lab verifies required measurement accuracy and functioning of the measuring system at defined intervals
- 4) Once calibration is done, the equipment is checked by running quality control specimen (as applicable)
- 5) Calibration records are
- 6) Calibration is done only NABL accredited companies/laboratories.
- 7) When the calibration gives rise to a set of calibration factors, such factors are recorded.
- 8) Calibration of equipment is done during installation, maintenance, reuse after repair for breakdown, and tests are calibrated with each reagent lot change and as part of quality control corrective actions.
- 9) Calibration frequency is as per the guidelines given in NABL 112.

Item	Recommended maximum period between successive calibration by accredited laboratory	Procedure and comments for calibration verification
Autoclaves	One year	Calibration of pressure gauge and temperature by thermal mapping.
Balances and Scales	One year	In addition balances with in-built calibration facility must be verified using calibrated

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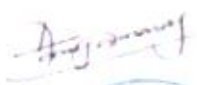
		weights for calibration once a day before use.
Biological safety cabinet	One year	Calibration of manometer, particle count and air flow also to be checked once in a year. For checking the functioning of UV light colony count to be performed once in 15 days.
Laminar Flow	One year	For horizontal laminar flow where sterile work is being done like media preparation, at least one blood agar media plate shall be used once in 15 days and there should be no growth.
Centrifuge	One year	Tachometer (contact / non-contact type) or Stroboscope. Calibrate temperature using PRT (Platinum resistance thermometer) with digital indicator and timing devices



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		(by a stop watch) in specialized high speed (> 10000 rpm) centrifuges.
Mass	Two years and can be extended up to five years if the mass is E1 Class (stainless steel)	OIML R111 Calibrated weight shall be kept in proper storage condition to avoid abnormal drift
Piston-operated volumetric apparatus, pipettes and dispensers	Initial manufacturer's certificate at the time of purchase and calibration checks every one year thereafter	1) In house gravimetric checks. Repeat at least 10 times volume delivery and weighing. (The laboratory may refer ISO 8655:2002 for guidance) 2) Adjustable devices, take readings at several settings of volume. 3) In-house verification of pipette calibration: Volumes less than 100µl should be checked with balances of appropriate sensitivity resolution.

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Thermometers	One year	Calibration of master thermometer at required temperature for other thermometers in laboratory verification by using calibrated thermometer at 2-3 points covering entire range.
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18.5.6. Records of Equipment:

Following records of equipment are maintained in KMCT/CL

- 1) Identity of the equipment;
- 2) Manufacturer's name, model and serial number, and unique identification (reference number);
- 3) Contact information of the supplier and manufacturer;
- 4) Date of receiving and entering into service;
- 5) Location;
- 6) Acceptance testing: operational and installation qualifications;
- 7) Calibration details;
- 8) Maintenance;
- 9) Breakdown and repair
- 10) Incidents and accidents related to equipment



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