1. PROCEDURE

Preventive and breakdown maintenance of the hospital's equipment shall be done as per the documented procedure. The hospital is having a fulltime facility management services team to take care of such breakdowns.

2. PURPOSE

The purpose of the document is to provide for a mechanism for early detection of potential maintenance problems and preventive maintenance of all equipment in possession of Hospital.

3. SCOPE

The procedure is relevant for all areas across the hospital

4. ABBREVIATION:

PM – Preventive Maintenance
BME – Biomedical Equipment

5. RESPONSIBILITY

Facility Management Engineer
Biomedical Engineer
End User of the equipments

6. PROCESS DESCRIPTION:

6.1 Preventive Maintenance Process

6.1.1 Individuals who are qualified and available to do preventive maintenance /breakdown maintenance of the said equipment must be identified

6.1.2 A list should be drawn up of personnel who are readily available to address the preventive maintenance of the equipment

6.1.3 Once the personnel have been listed, specific responsibilities should be assigned, in the form of a work orders, giving clear instructions for the task

6.1.4 Each person should have a clear knowledge of his or her responsibilities. Job assignments must correspond to the training, experience and aptitude of the individual.

6.1.5 The clear details of preventive maintenance must be documented and the frequency of preventive maintenance of equipment/instruments are carried out according to schedule

6.1.6 The Hospital Biomedical Engineer prepares and maintains a preventive maintenance plan as per the list of available equipments.

6.1.7 The Preventive Maintenance of instrument having an AMC contract is done by communicating with Bio-Medical engineer and company engineer

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

6.1.9 All medical equipments undergo preventive maintenance at prescheduled period.

6.1.10 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.

6.1.11 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.

6.1.12 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

6.2 **Calibration of Devices/Instruments**

6.2.1 A list of all instrument/equipment/devices requiring calibration is prepared and maintained

6.2.2 The list identifies the measurement instruments by name, type, serial number, location, applicable calibration requirements, date of calibration done and calibration due date

6.2.3 The calibration status is updated continuously with valid calibration certificates

6.2.4 Calibration certificate to be obtained from calibration agency with NABL accreditation

6.2.5 The Calibration Certificates are is kept with the biomedical department and copy is provided to the user department. Sticker is displayed on the machine which shows the last calibration date and next due date

6.3 Breakdown Maintenance

6.3.1 All breakdown entries are recorded in the Breakdown Registers of the respective departments

6.3.2 The Breakdown complaint is registered, and complaint number is generated by the handling department

6.3.3 The User departments of the hospital shall not use Faulty or defective equipment regardless of how minor the problem/fault is and the issue must

be reported in the first instance to the Biomedical Service Engineer/ Manufacturer/ Supplier/ Agency hired for maintenance of the equipment as soon as possible

6.3.4 Bio medical engineer / Facility Manager is assigned or directed to the site for rectification as per first line service guidelines

6.3.5 The user departments first line service guidelines consist of:

6.3.5.1 Record details of the defect(s).

6.3.5.2 Attach label (of Concerned Fault/Not Working) to the faulty equipment(s).

6.3.5.3 Contact Service engineer of manufacturer/supplier/hired agency by telephone number/fax/email supplied and keep a record of the same.

6.3.5.4 Ensure that information regarding breakdown is passed to all staff, including any shift changes and head of the institution

6.3.6 All the breakdowns occurring in the department should be maintained on record in the breakdown register. The event record in the breakdown register and must include the following details:

6.3.6.1 Reference ID as per inventory list
6.3.6.2 Equipment Name
6.3.6.3 Company/Make
6.3.6.4 Serial No
6.3.6.5 Date of Installation
6.3.6.6 Warranty period
6.3.6.7 Under AMC/CMC and relevant details
6.3.6.8 Breakdown Date and Time
6.3.6.9 Breakdown Details (Technical fault or other reasons)
6.3.6.10 Date and Time of Rectification
6.3.6.11 Total Time Taken (Rectification Time – Breakdown Time)
6.3.6.12 Rectification Details with expenditure including cost (if any)
6.3.6.13 Remarks with functional status

6.3.7 Information regarding Planned Preventive Maintenance and Breakdown Maintenance of the instrument / equipment is recorded on a single sheet as below:

Details of equipment/instrument information sheet:

S.No.	Information	
1.	Reference ID	"Information about the equipment"
2.	Equipment Name	
3.	Company/Make	
4.	Serial No.	
5.	Date of Installation	
6.	Warranty Period	
7.	Under AMC/CMC (with cost)	
8.	Average Life (as per manufacturer)	
9.	Contact details of the company (manufacturer/supplier)	
10.	Location of the equipment	
11.	Contact details of External contractor (if any)	
12.	Frequency of Preventive Maintenance/Calibration	"Information about PPM of the equipment"
	a. as per manufacturer guidelines	
	b. presently being followed	
13.	Preventive Maintenance/Calibration Done On	
14.	Preventive Maintenance/Calibration Due On	
15.	Expenditure with cost and details	
16.	Remarks of Service Engineer	
17.	Remarks of HOD/User	
18.	Breakdown Date and Time	"Information about Breakdown of the equipment"
19.	Breakdown Details (Technical fault or other reasons)	
20.	Date and Time of Rectification	
21.	Total Time Taken (Rectification Time – Breakdown Time)	
22.	Rectification Details with expenditure including cost (if any)	
23.	Remarks of Service Engineer	
24.	Remarks of HOD/User	

6.3.8 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 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

6.3.9 If the problem is not solved, the service request is put forward to the service engineer depending upon the warranty/AMC and further plan of action is decided

6.3.10 Average down time depends on the type of breakdown and is monitored on a monthly basis by the departmental HOD and the Quality Team

6.3.11 The breakdown details are updated in to the daily breakdown report and follow up is done

6.4 Routine maintenance:

6.4.1 The Facility Manager / Biomedical Engineer is responsible for the overall management and upkeep of the equipments/instruments in the Hospital

6.4.2 Designated staff is responsible for daily maintenance of equipment's based on daily monitoring checklist /Weekly monitoring /monthly monitoring

6.4.3 Deficiency details are documented in equipment break down book and the same is communicated to the chief biomedical engineer / facility management HOD

7. RECORDS

S No	Record	Responsibility	Review Period
1	Breakdown Register	Facility & Biomedical Incharge	1 Year
2	Preventive Maintenance Register	Facility & Biomedical Incharge	1 Year
3	Equipment Adverse Event Register	Facility & Biomedical Incharge	1 Year
4	Equipment Maintenance Records	Facility & Biomedical Incharge	1 Year
5	Asset Register	Facility & Biomedical Incharge	1 Year