D.Y. PATIL EDUCATION SOCIETY

(DEEMED TO BE UNIVERSITY) KOLHAPUR

Re-accredited by NAAC with "A" Grade

STANDARD OPERATING PROCEDURE (SOP)

MAINTENANCE OF PHYSICAL & ACADEMIC SUPPORT FACILITIES

D. Y. Patil Education Society
(Deemed To Be University), Kolhapur

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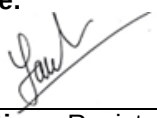
	Signature: 
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AMENDMENT SHEET

S.N.	Section no & page no	Details of the amendment	Reasons	Sign. of the preparatory authority	Sig. of the approving authority

SOP- Maintenance of Physical and Academic Support Facilities

Introduction

Bye-laws of the DYPES guide all procedures and policies for the usage and maintenance of the academic and physical infrastructure facilities. DYPES has full-fledged estate office headed by qualified engineer who looks after the maintenance of all the sections. DYPES has maintenance committee headed by chief Engineer with core members including Civil Engineer, Electrical Engineer, Bio-medical Engineer, A.C. technician and General supervisor. The other members of estate office are Carpenter, Plumber, Sanitation supervisor, Garden supervisor, Mason and Fabricator.

The minor day-to-day maintenance is carried out by in-house person at the respective college level. As per the MOA of the University, all infrastructure property is remitted to the Registrar, who is the custodian of the same. The Deputy / Assistant Registrars of various constituent units are in-charge and responsible person for carrying out day to day maintenance. The departments from the respective constituent units enter the required maintenance in the register kept in the Deputy / Assistant Registrar's office. The complaint is addressed and attended by the appropriate work man. Subsequently the work done is verified and evaluated by the user and Deputy / Assistant Registrars.

The major maintenance related issues of various units are forwarded to the maintenance committee of DYPES through proper channel. The maintenance committee, in its meeting, under the chairmanship of chief Engineer takes the appropriate decisions, taking financial burden into consideration. Appropriate and immediate actions are taken as per the necessity. For major maintenance work the tenders are invited from different agencies and after discussion in maintenance committee approval is given and forwarded to the finance department.

NABH and ISO Accreditation of the hospital mandates existence and deliberate adherence to SOPs with 3-monthly audits of all departments. Annual and comprehensive maintenance contracts of major equipment ensure minimal down-time and enhanced reliability. A dedicated Biomedical engineer is in-charge of all medical and supportive equipment.
Since August 2022, the maintenance related issues of biomedical equipment is reported and monitored through hospital software. The complaints regarding the nonworking of equipment is entered in the software by the concerned user. After the equipment has been repaired the

details are verified by the end user and bio-medical engineer before closing the call and entered in log book. An expert from biomedical department and engineers takes care of all medical and laboratory equipment. Under warranty equipment are maintained by engineers of vendors / manufacturers. Annual 'condemnation board' is conducted to identify the equipment which are 'beyond local repair' or 'beyond economic repair'. This helps to dispose off such equipment from the inventory and ledger. New equipment are thus purchased.

The maintenance and upgradation of academic needs of the institution is routed from heads of department to the associate deans and medical education units for further action at the institutional or DYPES level.

IT Engineer facilitates maintenance of IT equipment and LMS.

Maintenance Committee

1) Mr. B. G. Wangale (Civil Engineer), Chairman
2) Mr. Sadnand Sabins (Civil Engineer), Member
3) Mr. Ravasaheb Patil (Electrical Engineer), Member
4) Mr. Nikhil Petkar (Bio-medical Engineer), Member
5) Mr. Ravsaheb Dhumal (Electrician), Member
6) Mr. Amol Upase (A.C. technician), Member
7) Mr. Mansing Chougale (Supervisor), Member
8) Mr. Praksh Mane (Civil Engineer), Secretary

1. SOP - Civil Maintenance

Civil maintenance includes painting, carpentry, constructional repairs of windows, doors, benches, platform, chairs, tables, sports equipment etc. A casual repair of buildings is carried out on day to day basis by in-house concerned person. The written complaint is forwarded to assistant registrars of respective units who gets the necessary work completed. For major maintenance/renovation work the matter is forwarded to maintenance committee and after approval the work is carried out.

Sr No.	Facility	Maintenance Schedule	Responsible Person
1.	Classroom	Quarterly	Civil Maintenance Incharge
2.	Labs	Quarterly	Civil Maintenance Incharge
4.	Library	Quarterly	Civil Maintenance Incharge
5.	Gym	Quarterly	Sports Incharge,Civil Maintenance Incharge
6.	Seminar Hall	Quarterly	Civil Maintenance Incharge

2. Academic Support Facilities

Every Constituent units maintains a complete record of the equipment for academic support. Record of equipment servicing is maintained. During servicing if anything needs to be purchased it is done through a requisition slip. All technical maintenance of major equipment is done by an expert through AMC and minor day to day maintenance is done by an IT Incharge. The complaints registered are forwarded to assistant registrar and he is responsible to get the work done from IT Incharge.

Sr No.	**Equipment**	**Maintenance Schedule**	**Responsible Person**
1.	Projectors	Quarterly	IT Incharge
2.	Smart TV	Quarterly	IT Incharge
3.	Computers	Quarterly	IT Incharge
4.	Audio Equipments	Quarterly	IT Incharge
5.	Printers	Quarterly	IT Incharge

3. **SOP- Laboratory Maintenance**

Every laboratory maintains a complete record of the equipment such as Dead-Stock Register, Maintenance Register, utilization and Lab-Readiness Certificate. All the documents are verified by Lab In-charge (a faculty member) and are kept in accordance with the standard procedures. Record of equipment servicing is maintained. During servicing if anything needs to be purchased it is done through a requisition slip. All technical maintenance of major equipment is done by an expert through AMC and minir day to day maintenance is done by biomedical department.

4. **SOP- Electrical Maintenance**

The policy includes regular maintenance, repairs, replacement in case of breakdown. It also includes emergency maintenance on priority basis.

Sr. No.	Equipment	Maintenance Schedule	Responsible person
1.	Elevators	Quarterly-on call	Electrical Maintenance In-charge
2.	Fans	Quarterly	Electrical Maintenance In-charge
3.	LED Lighting	Quarterly	Electrical Maintenance In-charge
4.	Air Conditioner	Quarterly	Electrical Maintenance In-charge
5.	Telephone-EPBX	Quarterly	Electrical Maintenance In-charge
6.	Refrigerator	Quarterly	Electrical Maintenance In-charge
7.	Generators	Quarterly	Electrical Maintenance In-charge

5. **SOP- Maintenance of Transport Facilities**

The Institution has vehicles serving the different purposes like student transport, goods transport, ambulance services, vehicles for university officials. Every vehicle has a dedicated driver on rotation basis. It is the primary responsibility of drivers to maintain the vehicle on

day to day basis. There is a vehicle in-charge of institute who is responsible for getting done the major maintenance of vehicles reported by the drivers. The driver maintains daily checklist of vehicle condition.

6. SOP- Maintenance of Garden

There is a garden in-charge with a team of 20 people working under him for day to day maintenance of garden. Daily cleaning, excessive grass cutting, insecticides spray, use of fertilizers and watering of garden is done as required on rotation basis in all areas of garden. The garbage including dry leaves is dumped in compost pit.

7. SOP - Maintenance of Library

D.Y. Patil Education Society (Deemed University) Kolhapur has central library and each constituent unit has respective college library.

Day to day working of the library is carried out by the staff as mentioned in the table below.

Central Library Staff		
Name	**Qualification**	**Designation**
Mr. B. S. Patil	M.A, M.Lib. Sci	Librarian
Mrs. A. S. Shedge	M.A, M.Lib. Sci	Deputy Librarian
Miss. A. P. Bhopale	B.A, M. Lib. Sci	Documentalist
Miss S. J. Patil	B.Com, M. Lib. Sci	Cataloguer
Miss. D.M. Koli	B.A, M. Lib. Sci	Library Assistant
Mr. V. S. Mehgane	B.A, B. Lib. Sci	Library Assistant
Mr. S. B. Vankundre	B.Com., DIT	Library Assistant
Mr. R. D. Bodake	B.C.A	Library Assistant
Mr. Kiran N. More	XII, D.Lib. Science	Dafatary
Mr. N. D. Desai	XII, D.Lib. Science	Dafatary
Mr. U. S. Chavan	S.S.C	Peon
Mr. Viraj Koli	S.S.C	Peon

There is a library committee under the chairmanship of Hon’ble Vice Chancellor to monitor , supervise and advice the functioning of library.

with details for purchase of new books and journals. After approval of library committee, the

At the beginning of every academic year all the HOD's are requested to send the applications purchase is done by the university. Pest Control is done once in every six months. Computer library is maintained by the IT Dept. Everyday General cleaning done by the cleaning staff. Stock verification is done every year. Maintenance of books like binding is done every year.

Library Committee Members

Sr. No.	Name	Designation	Committee Member
1	Dr. P. B. Behere	Vice-Chancellor	Chairman
2	Dr. R. K. Sharma	Dean, Medical College	Member
3	Dr. C. D. Lokhande	Research Director & Dean CIR	Member
4	Mrs. S. A. Rathod	Principal, College of Nursing	Member
5	Mr. Rudheer Bardeskar	Principal, Hospitality Studies	Member
6	Dr. Mrs. V. R. Nikam	Prof. & Head Dept. of Anatomy	Member
7	Dr. Mrs. S. S. More	Prof. & Head Dept. of Pathology	Member
8	Dr. A. B. Kurnae	Prof. & Head Dept. of Pediatrics	Member
9	Dr. V. V. Bhosale	Registrar	Member
10	Mr. S. P. Kole	Finance Officer	Member
11	Mr. B. S. Patil	Librarian	Member Secretary

Central Library Rules

1. All Students while entering and leaving Central Library has to do biometric attendance and compulsory sign the daily visitor's register legibly.
2. All Students are required to maintain discipline / silence & decorum in the library.
3. To avail library services each Students should enroll as a member & get Library Borrower Card on payment of Rs. 100/- per student
4. All Registered Student Members on production of his/her, Identity Card and Borrower Card can be issued book. Borrower Card of the student will be retained by the library on issue of book till book is returned.
5. Students are not allowed to borrow books on the cards of other Students.
6. Each member is entitled to Borrow "only one books at a time"
7. Medical Journals and Reference Books are not issued to Students on Borrower Card. Journals, Reference Books & Thesis are not meant for Home Lending to Under Graduate Students and Postgraduate Students.
8. The Policy to be followed for Issue of Books will be on "First Come First Serve Basis"

9. Each Student can utilize university personal LMS portal to search for books in Library Web-OPAC section for availability and booking of desired book, which then will be reserved for that student by the librarian.
10. An issued book can be kept by the Student for a maximum period of only one week
11. The Book should be returned to the library within evening of the 7th day of borrowing of book and take their borrower card back.
12. Defacement, mutilation, marking with pen/pencil, tearing of pages and such other acts that spoil the books are condoned. Any Borrower indulged in such activities will be fined appropriately and is likely to be debarred from Library facility.
13. Loss of Book must be Notified to the Librarian before the expiry date of returning the book. Either replacement of books or its procurement cost at the rate of prevailing price will be recovered from the Borrower. Library may levy fine up to double the cost of the book. In this regard decision of Dean is final.
14. The Indenting Student must come in person to get the book issued and also to return the book personally. Book will not be issued by proxy.
15. Library Borrower Card is Non-Transferable.
16. If a book is in great demand "Queue System" will be followed.
17. Book may be renewed for extending borrowed period on request at the decision of the Librarian. If the borrower doesn't renew and fails to return the book in time, then it will render the borrower to a fine from the date when book was due. A fine of Rs. 2/- per day for first week and Rs. 5/- per day for second week will be charged strictly for each book.
18. Students are advised not to get into argument with Library Staff. They can bring their grievance to the notice of office-in-charge Librarian/Dean.
19. Students are Welcome to give suggestions for fruitful services. The suggestions should be given to Librarian / Dean in writing. The Library Committee will study them for incorporation if found suitable.
20. University Examination Question Papers & News Papers should not be taken out of the Central Library.
21. Students must observe complete silence in the Library and Student's Reading Hall.
22. Smoking, eatables and drinks are not allowed inside the Central Library & Reading Hall and it is strictly prohibited
23. Reading Halls are meant for individual study only. Engaging in discussion, conversation and group study is discouraged.
24. All Students are requested to keep their mobile phones on silent mode or to be switched off, inside the library premises.
25. Lights and Fans should be switched-off when not needed.
26. Using of mobile phone, playing music, use of mobile head phones, laptops is prohibited and if anybody is found using, it will be seized
27. Sleeping in the Reading Hall is strictly prohibited.
28. Tables and Chairs should not be disturbed from their position.
29. The Books should be handled very carefully and returned in time for circulation to the other readers.

30. On Loss of Borrower Card duplicate will be issued on Payment of Rs. 100/- per Card. Further when leaving the Institutions, Card has to be returned before the Annual Theory Examination of D. Y. Patil Education Society (Deemed to be University), Kolhapur otherwise fine of Rs. 100/- will be charged per year.
31. Digital library service is available in library premises for students and can be used to access digitized books and journals.
32. The library shall remain open for issuing of books from 9.30 a.m. to 5.00.p.m. on all working days.
33. Only back dated Issues of periodicals may be issued to the staff for a period of seven days. Hard copies of current issues of Journals will not be issued out of the Central Library.
34. In case a Loss of Library Card issuing of the same may be delayed for which Library staff is not responsible.
35. Students must handle Library property like furniture, fans, card etc. properly and carefully.
36. Books may be retained for a Period not exceeding one month by borrower or Staff members on renewal of book every week.
37. Student/Borrower should not damage RFID tag placed on book and borrower card. If found damaged appropriate fine will be collected.

10. SOP for Maintenance of Facilities in the Hospital.

Dr. D.Y. Patil Medical College Hospital and Research Institute has a dedicated manual for the maintenance of infra structure and the procedure is followed as per the manual.

Dr. D. Y. Patil Medical College Hospital & Research Institute
Kadamwadi, Kolhapur-416003

FACILITY MANAGEMENT AND SAFETY

D. Y. PATIL EDUCATION SOCIETY
(INSTITUTION DEEMED TO BE UNIVERSITY), KOLHAPUR
Re-accredited by NAAC with 'A' Grade

Dr. D. Y. Patil Medical College Hospital & Research Institute, Kadamwadi, Kolhapur

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Approved By :	**Designation: Dean**
	Name: Dr. R. K. Sharma
	Signature: 

AMENDMENT SHEET

Sr. No.	Section no & page no	Details of the amendment	Reasons	Signature of the preparatory authority	Signature of the approval authority

CONTROL OF THE MANUAL

The holder of the copy of this manual is responsible for maintaining it in good and safe condition and in a readily identifiable and retrievable form.

The holder of the copy of this Manual shall maintain it in current status by inserting latest amendments as and when the amended versions are received.

The Medical Superintendent is responsible for issuing the amended copies to the copyholders, the copyholder should acknowledge the same and he /she should return the obsolete copies to the Medical Superintendent.

The amendment sheet, to be updated (as and when amendments received) and referred for details of amendments issued.

The manual is reviewed once a year and is updated as relevant to the hospital policies and procedures. Review and amendment can happen also as corrective actions to the non-conformities raised during the self-assessment or assessment audits by NABH.

The authority over control of this manual is as follows:

Preparation	Approval	Issue
Internal Quality Assurance Cell	**Dean**	**Medical Superintendent**

The procedure manual with original signatures of the above on the title page is considered as ‘Master Copy’, and the photocopies of the master copy for the distribution are considered as ‘Controlled Copy’.

Distribution List of the Manual

Sr. No	Designation
1	Medical Superintendent
2	Nursing Superintendent
3	General Administrator
4	General Supervisor
5	Quality Head
6	Nursing In charge

CONTENTS

ABBREVIATIONS

AMC	Annual Maintenance Contract
CA	Corrective Action
CO2	Carbon dioxide
DG	Diesel Generator
ERT	Emergency Response Team
FMS	Facility Management and Safety
ICU	Intensive Care Unit
OT	Operation Theatre
PA	Preventive Action
PMC	Preventive Maintenance Contract
UPS	Uninterruptible Power Supply

POLICY FOR HOSPITAL'S ENVIRONMENT AND FACILITIES OPERATE TO ENSURE SAFETY OF PATIENTS, THEIR FAMILIES, STAFF AND VISITORS.

1. The Hospital shall provide the safe environment and facilities to ensure the safety of hospital staff and patients, their families, visitor.
2. No Smoking Policy of the hospital. This policy is frame to create awareness among the patients / visitors and employees of the hospital. Smoking shall be prohibited in the premises of the Hospital.

PURPOSE:

1. To provide guidelines for ensuring safety of Patients, their Families, Staff and Visitors in the Hospital.
2. Purpose of the policy is to ensure that Potential risk and Hazardous materials in the hospital are identified.
3. The risk associated with spill of blood & hazardous chemicals to staff, patient & others are identified, assessed, managed & minimized.

SCOPE:

Hospital wide.

RESPONSIBILTY:

Medical Superintendent.
General Administrator.
General Supervisor.
Quality Head.
Security Guard.
Maintenance department Staff.
Safety Committee.
Nursing Head.
Infection Control Nurse.
Housekeeping Department

DEFINITIONS:

1. **Hazardous materials** - These are those substances that are dangerous to human & other living organisms. They include radioactive or chemical materials Hazardous waste- Hazardous waste materials are dangerous to living organisms. Such materials require special precautions for disposal. They include biological waste that can transmit disease (for example- blood, tissues), radioactive materials & toxic materials & toxic chemicals. Other examples are infectious waste such as used needles, used bandages & fluid soaked items.
2. **Risk -** is a potential threat that affects the ability to achieve the desired outcome. A hospital setting is an environment of risk and potential danger. There are potential hazards in every area of the hospital such as radiation leaks, chemical exposure, infections, and security issues. Risk management is achieved through detecting, managing, reporting, and correcting potential deficiencies.
3. **Potential Risk** - refers to any risk associated with an action that is possible,in certain circumstances.

PROCESS DETAILS:

1. **Internal and external signage shall be displayed in a language understood by the patients or families and communities.**
   a. Safety signage shall be used to draw attention to objects and situations affecting health and safety. Adequate safety signage must be in place in all areas of high risk and danger.
   b. Signage is essential to maintain heightened safety and awareness in and around workplaces. Safety signage must be placed where required by legislation. The essential signages shall be in pictorial form.
   c. Internal and external signage in the hospital shall be displayed in bilingual language. (Marathi and English)
   d. Drawings (site layout, floor plan and fire escape route) shall be maintained in each floor at strategic location of the Hospital in a visible manner.
   e. Signage is classified into four (4) different categories. These include:
      i. Directional Symbols.
      ii. Administrative symbol.
      iii. General symbol.
      iv. Department specific symbol.
   f. Color of Fire Exit signage should be self-illuminating green color.
   g. Damaged Internal and external signage shall be replaced as early as possible. This responsibility shall be accomplished by General Administrator.

h. Signs are to be located where the message(s) are legible and clearly visible and so that they attract the attention of all workers (e.g. located at eye height, adjacent to plant such as lathes or at entrances to buildings/facilities).
i. Signs are to be installed in locations where there is limited possibility of them being obscured (e.g. placing items in front of signs or being overgrown by trees etc.). Placing several signs close together should be limited wherever practicable, as this may lead to confusion and make it difficult to distinguish individual messages.
j. Signs must not be placed on movable objects where a change in position would place the sign out of sight (e.g. doors or windows).
k. All signs are to be kept clean and in good condition (e.g. not faded)

2. Maintenance staff is contactable round the clock for Fire emergency repairs.

a. Qualified & trained personnel in hospital shall operate and maintain equipment and utility systems. The person could be qualified by experience or training also.
b. In case repair is not possible by staff on duty; there is maintenance staff available on call in the hospital.
c. A list should be drawn up of personnel who are readily available and this list with phone number and name shall be available at reception counter and other relevant departments.
d. Lists of Maintenance Staff:

	Designation/Trade
1	Chief Engineer (Civil)
2	Electrician
3	Air Conditioning Technician
4	Plumbers
5	Medical gas operator
6	Carpenter
7	Painter
8	Fabrication
9	Plumber

3. The HOSPITAL has a system to identify the potential safety and security risks including hazardous materials.

a. Safety committee: The Safety Committee functions on a regular basis to coordinate development, implementation and monitoring of the safety plans and policies so as to provide a safe and secure facility and environment in the hospital.

b. The risk management shall be achieved through detecting, managing, reporting and correcting potential deficiencies.
c. Patient-safety devices shall be installed across the hospital and inspected periodically. The devices are:
   i. Grab-bars.
   ii. Bed-rails.
   iii. Sign postings.
   iv. Safety belts on stretchers and wheelchairs.
   v. Warning signs – radiation or biohazard.
   vi. Fire safety devices like fire hose reel on each floor and fire extinguisher (ABC and CO2 type) are placed strategic location of the hospital
d. The hospital shall ensure that steps are taken to minimize the potential of harm from hazardous materials by appropriate management & by providing appropriate training.
e. The hospital has identified the potentially hazardous materials in the hospital. These materials are analyzed for their potential risks and measures to minimize the risk and action to take in case of emergency has been documented in 'Material Safety Data Sheet' (MSDS) of the hazardous material. These Material Safety Data Sheets contain vital information regarding safety from these hazardous materials. The MSDS shall be kept at the location where these hazardous materials are kept or in use.
f. The hazardous materials are continually identified & their risk is analyzed. These are found to be of substantial risk, it is included in the list of hazardous materials & its safety instruction is prepared.

DESCRIPTION:

List of Hazardous Chemicals:

1. Bacillocid
2. Formalin And Potassium Permanganate
3. Virosil
4. Sporodol Spray
5. Glutaldehyde
6. Kersolex
7. Sodium Hypochlorite
8. Labolene
9. Ramadine 5%
10. Stazlon
11. Miczonil (hand rub)
12. Bactalin 5.5

13. Hydrogen Peroxide
14. Ether
15. Compound tincture Benz ion
16. Erisal
17. Spirit
18. Iodine
19. Povilon
20. Cipadin scrub
21. Infecta
22. Dettol
23. Hydrochloric Acid
24. DNO health
25. Phenyl
26. Vecteor
27. Green Grass
28. D.D.T. powder
29. Bleaching Powder
30. Dillhramycin

SOP FOR REPORTING POTENTIAL RISK

SR.NO.	PROCEDURE	RESPONSIBILITY	SUPPORTING DOCUMENT
1.	All staff Shall be trained to identify and report safety and security risks in the hospital by Safety Committee.	Safety Committee.	Training records
2.	Any staff member who identifies a potential risk should immediately call to Front Desk/Reception (EX no. 101) in case of immediate concern.	All staff members	Reporting forms/Register
3.	Reception person will inform to designated and concerned person of safety committee (facility manager and General administrator) in case of immediate concern.	Reception Staff	

4.	While calling the number, the reporter must tell his/her name to the reception person and the identified risk, and the location.	Reporting Person	
5.	If the nature/type of risk is medium or low and doesn't require immediate concern then it should be addressed through the risk reporting form. This form should be submitted to General Administrator.	All staff members	Reporting forms
6.	The designated person along with /concerned person should visit the spot and ensure that the complaint is addressed, in case of immediate concern.	Designated person/Concerned department	
7.	In case of medium or low risk, safety committee should analyze the risk and responsible for to take corrective and preventive action	Safety committee	Reporting form.
8.	Incident report form shall be filed by front desk/Reception staff/Administrative Manager.	Reception Staff	Incident report file.
9.	The information should be passed on to the designated person concerned, who in turn will have to contact groups responsible for addressing the complaint. This should be done by one of the member safety committee.	Safety committee	Safety committee meeting records.
10.	Once rectified, the designated person should conduct a random inspection and see if similar problems exist in other places in the HOSPITAL, and if so, address them.	Designated person	Facility Inspection checklist.

4. PROCEDURE FOR MANAGING VARIOUS RISKS IN THE HOSPITAL.

a. Chemical hazards (including blood and their spillage).

For efficient management of spills, hospital must constitute a spill team which must comprise of Housekeeping Staff & Facility Manager and Nursing In charges.

Steps to be followed in case of spills by the staff in the area of spill: -

i. Give immediate call to Housekeeping staff or Nursing Staff.
ii. Warn everyone to stay away and put caution board and cordon off the area.
iii. Cover with Tissue/newspaper.
iv. Place empty trash which can over the spill.
v. Inform spill team for major spills (all spillage greater than 30ml are termed as major spills & less than 30ml are termed as minor spills.)
vi. Housekeeping Spill Team to collect spill kit from respective nursing station and reach spill site within 10 minutes.
vii. Alert people in immediate area of spill.
viii. Wear appropriate protective equipment, including safety goggles, gloves, and disposable gown.
ix. Avoid breathing vapors from spills.
x. Spill Management shall be done as per the MSDS SHEET.
xi. Collect residue, place in a waste disposal bag.Sharps should be picked up by brushes and pan or other suitable tools.
xii. Clean spill area with water.
xiii. Wipe the area and dry with absorbent cloth.
xiv. Remove PPE(heavy duty gloves and gum boots can be washed and dried and replaced into spill kit;other PPE to be disposed in yellow bin)
xv. Complete an incident form with the in-charge nurse/facility manager.
xvi. Refill the spill kit for next use.
xvii. CONTENT OF BLOOD SPILL KIT:
- ✓ Sodium Hypochlorite 5%
- ✓ Powder Free Gloves -2 pairs
- ✓ Mask -1
- ✓ Absorbent Towel -2
- ✓ Eye Glass -1
- ✓ Disposable shoe cover- 1 pair
- ✓ Disposal Poly Bag -1
- ✓ Head Cap -1
- ✓ Yellow and red plastic bags with bio hazard logo for waste collection.

b. <u>Handling mercury spills in hospitals.</u>

i. Mercury spill kit:
- ✓ PPE:

- Rubber gloves
- safety goggles
- facemask
- apron
- disposable shoe cover.

✓ plastic zipper bag
✓ dropper
✓ heavy paper card,
✓ absorbent material
✓ Torch
✓ Tweezers
✓ Air tight, puncture proof container-2
✓ Surgical tape.

ii. **Location of mercury spill kit**: The kit may be kept in a box and provided in wards/casualty and other places handling thermometers and BP apparatus. If the spill occurs, the following protocol may be adopted.
iii. Increase ventilation in the room by opening the windows.
iv. Pick up the mercury with a dropper or scoop up beads with a piece of heavy paper like playing cards.
v. Place the mercury-contaminated instruments (dropper/heavy paper) and any broken glass in a plastic zipper bag.
vi. Dispose of waste mercury as toxic waste. Double-bag the waste and incinerate it; however, it is more environmentally acceptable to forward the waste to reclaim the mercury.
vii. Do not use household cleaning products, particularly products that contain ammonia or chlorine. These chemicals will react releasing a toxic gas.
viii. Do not use a broom or paint brush. It will spread them around by breaking them into smaller beads.
ix. Do not use vacuum as it will disperse mercury vapor into the air and increase the likelihood of human exposure.
x. Complete an incident form with the in-charge nurse/facility manager.
xi. Refill the spill kit for next use.

c. <u>Security Risk</u>.

To identify or avoid Theft in hospital following things are should be followed.

i. All staff should wear hospital ID at all times.

ii. Staff must report any unidentified individuals or suspicious activity to security person.
iii. CCTV monitoring of the corridors and common areas is necessary.
iv. Patients to be instructed to keep their belongings safe.
v. Theft must be immediately reported to the security and Administration department.
vi. Security and administration department must take control of the scene and scrutinize all CCTV recordings and movements.
vii. All staff in the area should be interrogated about any suspicious movement.
viii. Every effort must be made to solve the case. Security and administration department must include the senior doctor or senior nurse while handling the investigation.

d. Risk of Fire

To avoid fire accidents from happening, it is important to have a system or a team to analyze the potential risk factors that may induce fire, and take necessary steps to avert an incident. Fire prevention measures include the following:

i. Strict prohibition on smoking.
ii. Positioning of heat sources away from combustible materials.
iii. Good housekeeping and prevention of accumulation of easily ignitable rubbish or paper.
iv. Risk assessment and control in the purchase of articles and substances to avoid the introduction of fire hazards whenever and wherever possible.
v. Strict facility inspection round for electrical wiring and appliances, like non use of loose wires, extension cords, multiple tapping from a single load.
vi. Avoiding use of electrical and electronic equipment with damaged and twisted wires.

e. Risk of Electrical

General Prevention Measures.

i. Do not expose the live part of a wire or any electrical appliance.
ii. All electrical appliances must be grounded properly.
iii. Do not touch electrical appliances with wet hands.
iv. Be sure to use standard regulation fuses for switches and not copper or steel wire.
v. Do not permit use of faulty or malfunctioning electrical products.
vi. Do not use wiring with a link in the middle to connect two separate wires.
vii. Do not have loose wires in the facility.
viii. Have good standard wiring and do not permit substandard wiring that does not follow electrical safety requirements.
ix. Staff operating the equipment must be trained and have adequate knowledge on the use of equipment.

x. Conduct periodic safety inspections in order to detect potential problems.

f. Risk of Fall

To prevent falls, the following maybe observed:

i. All wheelchairs and stretchers used for transferring patients should have safety belts.
ii. All roads and corridors must be level and any broken or chipped floor tiles should be immediately replaced.
iii. While cleaning, the area should be cordoned off with appropriate signage like “wet floor”. Any spillage must be cleaned immediately.
iv. The end of a passage and the beginning of the stairs must be demarcated in a different color.
v. Grab bars must be provide in all patient care area washrooms.
vi. Adequate lighting must be present in all areas.

5. Facility inspection rounds to ensure safety are conducted periodically.

a. The hospital undertakes inspection of the Hospital safety precautions
b. undertaken either internally in regular intervals or with the help of an appropriate external agency at the time of requirement.
c. The internal Hospital safety rounds shall conduct quarterly by one of the member of safety committee and facility manager, sanitation officer, fire safety officer, Nursing superintendent of hospital. During these rounds potential safety risk shall be identified. This should be carried out as per checklist.
d. The finding of the rounds are documented and the CA / PA measures are taken to rectify the faults.
e. The Hospital Safety Committee may require quarterly assessment of the following areas:
    i. Hazardous materials. (flammable and caustic)
    ii. General Equipment.
    iii. Electrical equipment (switches, breakers, fuses, AC outlets, connections).
    iv. Personal protective equipment (safety glasses, ventilators, radiation safety aprons etc).
    v. Fire protection equipment (alarms and extinguishers).
    vi. Containers (hazardous waste bags/bins).
    vii. Structural openings (windows, doors, stairways).
    viii. Buildings/structures (floors, roofs, fences).
    ix. Housekeeping.
    x. Landscaping, Gardening & Greenery
    xi. Maintenance of Open Areas
    xii. Pest Management & Stray Animal Control
    xiii. Water Sanitation practices (Safe drinking water/ Rooftop Tanks)

xiv. Furniture and Fixture
xv. Mechanism for removal of Junk Material
xvi. Pest Management & Stray Animal Control
xvii. Drainage and Sewage Management
xviii. Kitchen Services
xix. Laundry services and Linen Management
xx. Security Services
xxi. Segregation practices of Biomedical Waste Collection,
xxii. Storage and Transportation of Bio-medical waste

6. There is a safety education programme for relevant staff.

a. The Hospital shall schedule a safety education programme to avoid harm to patient, their families, staff and visitors.
b. The regular safety training shall cover the topics like Fire safety, Hazardous materials, use of Personal Protective Equipment, Bio-Medical waste Management, mock drills, spill management, all codes at defined periods.
c. All staff are educated about safety requirements – in both patient care areas and non-patient care areas. The Hospital requires all new employees to attend Induction and orientation programme. This orientation is intended to provide new employees with an awareness of safety importance and their responsibility for maintaining a safe and healthy work environment, and to give an overview of workplace safety basics.
d. Records of all safety education and training for staff shall be maintained by General Administrator /Safety Committee.

RECORDS AND FORMATS:

Facility inspection checklist.
Material Safety Data Sheet.
Potential Risk Form.
Training Record.

POLICY FOR CLINICAL AND SUPPORT SERVICE EQUIPMENT MANAGEMENT

1. To maintain all medical equipments to the appropriate standards as prescribed by equipment manufacturer, so as to ensure that all medical equipments to be used to

provide the best health care services to patients should be safe, efficient, effective, reliable and long lasting.

2. This Policy is intended for the maintenance of medical equipment that ensures:
   a. Maximum availability and reliability of equipments.
   b. Minimum downtime and Maximum Uptime.
   c. Maximum return on investment.
   d. Prevention of wastage of consumables and spares.
   e. Extended useful life of equipments.
   f. Readiness of the equipment for emergency use whenever required.

PURPOSE:

1. To provide and document the methodology for Maintenance & Service of clinical and support service equipment.
2. To identify the future need for equipment in accordance with the hospital services.
3. To provide scope for early detection of potential maintenance problems as well as proper care and routine maintenance of all equipment in possession of Hospital.

SCOPE:

To ensure surveillance and maintenance of all clinical and support service equipment in the hospital.

RESPONSIBILITY:

Medical Superintendent.
General Administrator.
Biomedical Engineer.
Maintenance staff

PROCESS DETAILS:

1. Equipment planning:

a. The hospital shall have programme for future requirement of clinical and engineering support services. The hospital shall plan for equipment in accordance with its services. The plans shall be fully implemented. The hospital shall ensure all equipments are selected according to scope of services.
b. Decision regarding for final purchase/procurement of equipment shall be taken in Top management meeting.
c. There shall be involvement of the end-users, Top management, engineering and biomedical in the engineer in selection of equipments.
d. Feasibility study shall be done by Top management and Departmental Head of the hospital to identify the need for procurement of a new equipment or replacement of existing equipment. The feasibility study includes cost analysis, efficiency, space requirements and merits and demerits in terms of Operations.
e. All equipment should be inventoried with a unique numbering system developed by the hospital. This could be available on the machine in the form of a sticker or written with marking ink. Inventory number and serial number (assigned by manufacturer) are the two IDs of the equipment. Inventory should be managed and updated by the facility management team when new equipment is bought or old equipment is condemned.

f. Equipment log: Equipment details shall be maintained in equipment log book with following information.
   i. Name of Equipment.
   ii. Model NO./Make
   iii. Serial number as per Manufacturer
   iv. Equipment ID/ Asset code as allotted by the hospital.
   v. AMC/PMC status/Operational maintenance by the hospital.
   vi. Warranty status with warranty period.
   vii. Date of installation.
   viii. Location of the Equipment in the hospital.

2. Equipment Maintenance:

a. Operational (Routine) maintenance:

i. The end user shall be responsible for the overall management and upkeep of the Bio - medical equipments.
ii. The operator of the medical equipment shall be trained to use medical equipment in safe and effective manner based on instruction of the manufacturer.
iii. In order to do so, the Hospital shall prepare operational instruction for all equipment based on manufactures manual.

b. Breakdown Maintenance:

i. All breakdown entries are made in the Complaint Registers.

ii. The complaint is registered and complaint number shall be generated.
iii. In house Bio medical engineer is assigned or directed to the site for rectification as per first line service guidelines.
iv. If it is minor break down, corrective actions are taken by the in house 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.
v. If the problem is not solved, the biomedical engineer is put forward to the service engineer depending upon the warranty and further plan of action is decided.
vi. Average down time depends on the type of breakdown.

c. Preventive maintenance:

i. Planned Preventive maintenance will be a statutory requirement for most of the medical equipments. It will enhance the efficiency, effectiveness and reliability of medical equipment and must be carried out at appropriate frequency as suggested by the manufacturer/service provider.
ii. Planned Preventive Maintenance shall be usually scheduled at specific intervals and includes specific maintenance activities such as lubrication, calibration, cleaning (e.g. filters) or replacing parts that are expected to wear (e.g. bearings) or which have a finite life (e.g. tubing).
iii. Each major equipment on the inventory will show whether it is maintained in-house or maintained by external agency or manufacturer.
iv. The conditions for preventive maintenance required for medical equipment can vary due to factor such as type of equipment, age of the equipment, frequency of use of the equipment, etc.
v. Preventive Maintenance of all the major equipments whether in use or not shall be done periodically as advised by manufacturer/supplier, so that functioning status of the equipment could be known and equipment is readily available whenever its use is needed.
vi. In critical care areas like Casualty, ICU, OT etc., if the number of equipments are less (one or two), then authority may look into that a standby active unit should be kept ready so that patient does not suffer in case the equipment in use goes out of order.
vii. The Biomedical Engineer of service provider prepares and maintains a maintenance plan as per the list of available equipments.
viii. A schedule is prepared by the in-house biomedical engineer, private service provider/ Facility and maintenance department for preventive maintenance as per contract.
ix. The record of Planned Preventive Maintenance should be maintained department wise and must include following details:-

- ✓ Reference ID as per inventory
- ✓ Equipment Name
- ✓ Company/Make
- ✓ Serial No.
- ✓ Date of Installation
- ✓ Warranty Period
- ✓ Under AMC/CMC
- ✓ Frequency of Preventive Maintenance/Calibration
- ✓ as per manufacturer guidelines
- ✓ Preventive Maintenance/Calibration Done On
- ✓ Preventive Maintenance/Calibration Due On
- ✓ Expenditure with cost and details
- ✓ Remarks with Functional Status

x. 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.

xi. Service report after every repair or schedule service (PPM) should be taken by the biomedical engineer /user in which all the details like warranty on spare parts need to be added and same should be updated in the inventory register as well as in the Maintenance Register. If any deficiency is observed, the same may be communicated to service provider and Head of the institution for necessary action.

RECORDS AND FORMATS:

Equipment log.
Breakdown maintenance register.
Preventive maintenance schedule.
Service Report.

POLICY FOR SAFE WATER, ELECTRICITY, MEDICAL GAS AND VACCUM SYSTEMS

1. Potable water and electricity are available shall be provided round the clock in the hospital.

2. The Hospital shall make provision for alternate sources are provided for in case of failure and tested regularly.
3. Preventive and breakdown maintenance of the hospital's equipments and medical gas shall be done as per the documented procedure.

PURPOSE:

1. To ensure the provision of safe water, electricity and medical gas.
2. To provide guideline/ instruction to facilitate safe use of medical gases and vacuum system.
3. To prevent any untoward incident due to mishandling of Medial gases and vacuum system.

SCOPE:

All the medical, nursing and technical/maintenance staff of the hospital.

RESPONSIBILITY:

Medical Superintendent
General Administrator
General Supervisor
Biomedical Engineer
Maintenance Department staff on duty and all user departments.

PROCESS DETAILS:

1. Potable water and electricity shall be available round the clock.
   a. In case of any breakdown in the power supply, the hospital The Hospital shall make arrangements for supply of adequate potable water and electricity, provided as backup for any failure / shortage.
   b. The Hospital shall ensure that there is sufficient water supply to meet the requirements of the hospital.
   c. In case of a shortfall in water or electricity, alternate sources shall be required. Alternate electric supply could be DG sets, UPS and any other suitable sources.
   d. The hospital have more than one source of water at all part of time.
      i. Primary source: Kolhapur Municipal Corporation water supply.
      ii. Secondary source: One Well and bore well supply.
      iii. Underground water tank 2 in quantity 10,000 and 80,000 litre each.
      iv. Water tank:3 in number which are overhead tanks.

e. The hospital shall Ensure a round the clock water supply.

f. The potable water quality is monitored biyearly and as and when required for microbiology analysis .Samples should be sent to District Water Laboratory, Kolhapur and record shall be documented.

g. The hospital receives power supply from Maharashtra State Electricity board(3 phase connection with500kva transformer extra high voltage.) In case of any breakdown in the power supply, the hospital has

   i. **Generator Room** -320 kva located at ground floor near central canteen of hospital.

   ii. **Inverter** –

   iii. Office Inverter: 600VA back up with three hours back up.

   iv. **Online UPS** -

      a. **Operation Theater**: 15KvA with Two hour backup

      b. **MICU**: 15KvA with Two hour backup

      c. **SICU**: 15KvA with Two hour backup

      d. **PICU and NICU** : 15KvA with Two hour backup

      e. **BLOOD BANK**: 40 KvA with Two hour backup

      f. **DIALYSIS ROOM**: 10KvA with Two hour backup

2. Alternate sources are provided for in case of failure and tested regularly.

   a. The hospital shall make arrangements for supply of adequate potable water and electricity, provided as backup for any failure / shortage. The hospital shall ensure that there is sufficient water supply to meet the requirements of the hospital, in case of a shortfall in water or electricity.

   b. Trip switches are located in each area to prevent any form of short circuit.

   c. The Electrician checks the wiring system regularly to locate any fault such as short circuit etc and immediately rectifies the same.

   d. The generators are regularly tested by the electrician in order to locate any fault in the same. This is done to ensure that there is no interruption in power supply. The generators are also under AMC, record of the same is maintained by the maintenance.

   e. A record register of the response time of generator is maintained by the maintenance staff of the hospital.

3. There is a maintenance plan for medical gas and vacuum systems.

   a. To ensure safe handling of medical gases throughout Hospital complying with legal requirements.

   b. The hospital has a functional centralized gas manifold for medical oxygen. Standard medical gases used in any hospital include oxygen, nitrous oxide. Other medical gases are procured and used in cylinders at present which are made available in critical care areas, OT, recovery, Labor room, specific care area.

   c. ISO colour coding system is used for different types of gases.

d. Copper pipelines are used for transport of gases from medical gas room to different departments. Oxygen System:

e. Oxygen System consists of the followings:-

i. Liquid Oxygen System - The equipment is designed with sufficient safety to store cryogenic liquid oxygen, transform it to gaseous form and supply it at a presser consistent with medical requirement.

ii. Oxygen Manifold System.

- ✓ It is the central supply room consists of cylinder manifold and a control panel. The manifold has two banks of 2 cylinders each.
- ✓ The control panel consists of primary and secondary pressure regulators to ensure delivery of gas to the pipe line at required pressure.
- ✓ Alarm System Two kinds of alarm are usually incorporated in system in the centralized medical gas system. One monitors the pressure it becomes red when pressure is low. The other alarm is remote signal lamp. It is preferably both visual and audible.
- ✓ For ensuring uninterrupted supply two separate banks are used. Gas from one bank is utilized at any point of time. The other bank is kept as stand by or reserve.
- ✓ A control panel installed between the two banks ensures that both banks are not depleted simultaneously and the control of the manifold automatically shift the flow of gas from the primary side to secondary side when the primary bank pressure falls below the set level.
- ✓ The control panel used should be built in accordance to the international standards.

f. VACCUM UNIT:
It is used in all OT's.It consist of electrically driven vaccum pump to create a pressure much lower than atmospheric pressure in reservoir tank.This vaccum creates a suction effect at out lets unit The reservoir tank stabilizes vaccum pressure in the pipe line between-305mm to 635mm. Of mercury at all out lets

g. COMPRESSED AIR UNIT:

i. It is used for inhalation therapy, to run ventilators,orthopedic and dental drills. It consists of an electrically driven air compressor.

ii. Water is required for cooling the compressor.Air pressure at compressor is about 100-118PSI and this reduced to58-61PSI for use at patients end.

h. Main stores:

All cylinders are kept at…….

i. Local storage (wards):

Cylinders of medical air/oxygen mounted on trolleys are used as emergency gas supplies in ward areas. Designated "parking" areas should be sought for these trolleys, and the area should be signed to indicate its purpose. All staff should be made aware of the location and function of these cylinders.

j. Local storage (non-specific storage areas):

There are occasions when small storage areas are established in a corridor. These usually consist of a cylinder support system and a notice identifying the purpose of the cylinders. Such a method of storage is not to be encouraged, as the cylinders are vulnerable to mechanical damage and tampering. Efforts should be made to provide appropriate safe storage.

k. Storage of cylinders:

i. Oxygen is a non-flammable gas, but strongly supports combustion.

ii. Do not store or use cylinders near naked flames, sources of ignition or combustible materials. Ensure the oxygen cylinders are stored in a safe and secure area where they cannot fall over and cause injury. Commonly this is within a secure cage or chained to the wall. Clearly identify the storage areas with appropriate signage.

iii. Ensure separation of full and empty cylinders.

iv. Store medical gas cylinders separately from fuel, oil, grease, alcohol based hand cleaner etc. in a well-ventilated area that is clean and dry, preferably inside.

v. Medical gas cylinders should not be stored in the same area that is being used to dry equipment Smoking should not be permitted in the vicinity where cylinders are used or stored.

l. Initial Safety checks Before handling cylinders:

i. Ensure your hands are clean If alcohol-based gels or liquids have recently been used. Ensure it has totally evaporated before oxygen use.

ii. If moisturizers or sun cream have been used ensure hands are dry before oxygen use. When selecting a cylinder for use ensure it is clean free from any damage, free from oil or grease.

m. Fire fighting measures:

i. If medical oxygen cylinders are involved in a fire If it is safe to move the cylinders, close cylinder valve to stop the flow of product.

ii. Move cylinders away from source of heat.

iii. If it is not safe to move the cylinders, Cool with water from a protected position.

iv. All types of fire extinguishers may be used when dealing with a fire involving medical oxygen cylinders. If the fire and rescue service attend it is vital they are informed that medical oxygen cylinders are inside the building and where they will be located.

n. Personal protective equipment:

Personal protective equipment/clothing should be provided and used. Any loss or damage should be reported immediately.

o. Handling of cylinders:

i. Cylinders can be heavy (and bulky, and should therefore be handled with care only by personnel who have been trained in cylinder handling and who

understand the potential hazards. Cylinders should not be dropped, knocked, used as “rollers”, or be permitted to strike each other violently.

ii. Cylinders should not be marked with chalk, crayon, paint or other materials, or by the application of adhesive tapes etc. Cylinders should always be secured during transportation and in use.

iii. Smoking and naked lights should be prohibited in the vicinity of all cylinders.

iv. Cylinders should not be painted or otherwise obscured in a manner that would prevent identification of their contents, and care should be taken to preserve their labels and surface finish.

v. Cylinder valves should not be dismantled or tampered. Leaking cylinders should be removed from service and returned to the gas supplier. Cylinder valves should always be closed after use and when cylinders are empty.

vi. Protective Clothing Heavy protective gloves and protective safety footwear should be worn when loading or unloading cylinders to minimize the risk of injury. Gloves, protective boots and overalls should be clean and free from oil, grease and hand creams etc

p. Prepare the cylinder for use:

i. Check the sealing washer at the valve interface. Connect the cylinder to the equipment and tighten firmly with the correct tool. Do not use excessive force. Before opening the cylinder, check the equipment is turned off. Using the correct key, open the cylinder fully anti clockwise, then turn back a quarter of a turn.

ii. Check for leaks by using a leak detection fluid or by observing to see if the pressure gauge on the regulator starts to fall. Slowly adjust the pressure regulator to the correct setting, open the equipment flow control valves and observe for correct operation.

q. Taking a cylinder out of use:

i. Turn off the valve and vent any excess gas through the regulator via the equipment. Shut off the equipment control valves.

ii. Using the correct spanner disconnect the cylinder from the equipment. Do not vent the cylinder or leave the valve open. Return the cylinder to the empty rack in the storage area for collection from the supplier.

r. Role of Hospital staff:

i. The maintenance of piped gas, shall be done by the hospital Biomedical engineer Facility and Maintenance team and OT technician.

ii. This team is responsible for the uninterrupted supply of piped medical gases, compressed air and vacuum.

iii. The facility inspection checklist is prepared for maintenance plan and daily gas pressure shall be recorded.
iv. The orders for replenishing the exhausted gas cylinders are done by the store/Maintenance and facility department and OT staff of hospital.
v. All the faults and repairs of the gas and vacuum pipe lines are identified and rectified by them.
vi. They are responsible for intimating the authorities about the deficiencies of gas supplies and the quality of their services.
vii. Proper co-ordination between Maintenance department, hospital administration and OT technical staff is ensured at all levels for successful functioning of the system.
viii. A Register is maintained on the supply and installation of gases.
ix. Proper signages are placed for easy recognition and safety compliance.

s. Preventive Maintenance:

i. Preventive maintenance schedules to be prepared based on manufacturers' recommendations.
ii. The availability of necessary spares, consumables, tools and necessary materials to be ensured through standardization and /or advance planning, through Stores.
iii. After completion of maintenance (whether preventive or breakdown) the O K report to be taken from the Head of Anaesthesia.
iv. All preventive maintenance jobs done will be recorded in History Card maintained for each equipment / device (unit wise) using format.

t. Breakdown Maintenance:

i. In any event of breakdown manifold engineer is informed who logs the requirement of maintenance / repair in format of Breakdown Slip/register.
ii. After completion of maintenance / repair, an O K report is taken from the biomedical engineer.
iii. All breakdown repair jobs done are recorded in History Card maintained for each equipment / devices.
iv. Instruments / devices which are given in AMC (Annual Maintenance Contract) are given to AMC Company for maintenance. A report of failure / break down is taken from company for monitoring purposes.

u. Calibration of Devices:

i. The pressure gauges in the Central Manifold panel are to be calibrated and maintained. The name of equipment, type, serial number, location, applicable calibration requirements, date of calibration done and calibration due date to be documented. The calibration status to be

updated periodically.

ii. Documentation will indicate whether calibration is done in house or through external sources. Calibration requiring an out side agency - a contract or purchase order will be issued.

iii. Where required Calibration agency is provided with necessary facilities and support to carry out calibration in the hospital itself.

iv. Such instruments that are to be calibrated at an outside location are collected and sent to the identified calibration agency.

v. The following is checked when calibration is done –
   - ✓ Physical condition of instrument /test equipment
   - ✓ Calibration report verification
   - ✓ Calibration certificate to be obtained from calibration agency and after verification marked as O.K. /Not O.K.
   - ✓ Sticking of calibration sticker

vi. Calibration history is maintained and calibration certificates filed.

RECORDS AND FORMATS:

Reports of water testing
A record register of the response time of generator
PMC report of medical gas equipment
Facility Inspection checklist

POLICY FOR FIRE AND NON-FIRE EMERGENCIES WITHIN THE FACILITIES.

1. Hospital shall identify the emergency plan within the hospital before any emergency situation arises.

PURPOSE:

1. To provide policy for response to both fire and non – fire emergencies that may affect hospital staff, patients, visitors and the community.
2. Identify responsibilities of individuals and departments in the event of a disaster situation.
3. Reduce losses and damage to records, facilities, and systems.
4. The policy is intended to provide guidelines for Emergency Planning requirements for hospital buildings.
5. Prevent or lessen the impact that a disaster may have on the hospital.
6. Prepare staff to respond effectively to disasters or emergency situations that affects the environment of care.

SCOPE:

This policy shall apply to entire hospital.

RESPONSIBILITY:

Employees at every level of the hierarchy.

PROCESS DETAILS:

1. The hospital has plans and provisions for detection, abatement and containment of fire and non-fire emergencies.
2. The hospital has provisions and facilities to combat non fire and any fire emergencies.
3. A trained multidisciplinary team handle such emergencies wherein a common telephone number ( ) or other mechanisms be used to alert and activate this team.
4. All the floors of the hospital is provided with adequate fire fighting equipments .All fighting systems in the Hospital shall be kept active at all times. For ex.
   a. ABC type
   b. Co2 type
   c.Fire hose boxes and reels with drum provide on the each floor.
5. The systems should be tested frequently and documented in Maintenance records and facility inspection checklists.
6. Any person who witnesses a fire or leak or any other Fire Fighting Team should immediately call for help.
7. The staff member should immediately try to fight the fire or handle the situation based on the training provided. The team set for the purpose should be present and take over the situation immediately.

Prepared By:	Reviewed By:	Approved By:

8. Based on the situation, the team leader should decide if additional help is required from outside such as the fire department or police.
9. Hospital Fire Fighting Team:
   i. During Daytime [8:00 am to 5:00 pm]:
      Name of team members:
      - ✓ Fire Safety Officer
      - ✓ Maintenance Supervisor.
      - ✓ General Administrator.
      - ✓ Nursing Head.
      - ✓ Security Guard.
      - ✓ Receptionist.

   ii. During Nighttime: [5:00 pm to 8:00 am]:
      Name of team members:
      a.Cauality medical officer.
      b.Reception clerck
      c.Public Relation officer
      d.Maintenance Superviser
      e.Se

10. **Fire Safety Protocol:**
    a. Fire risk areas in the Hospital are identified as given below:- Generator Room, Medical Gas storage room and medical record room. At these places, fire appliances are provided.

b. Fire Fighting Team response plan

Activity Sr. No	Activity Description	Responsibility	Record
1	The individual discovering the fire will take the following actions:	All employees	

2	Shout loudly "**Fire ... Fire"** so that nearby staff will reach for help.	First Responder	
3	If fire is small, Pick up fire extinguisher from the closest fire point. Operate the extinguisher and try to put off the fire.	First Responder	
4	If help available, ask person to Dial (102/105)(emergency nos)	First Responder	
5	Second responder will Dial (101/102)and notify the fire emergency with location and ask to announce Cod Red. Assist the first responder after the call is over.	Second Responder	
6	If no one is available for help, go to nearest phone and inform reception on (101/102)about fire incident and to announce Code Red with location. Continue and attempt to extinguish fire.	First Responder	
	If the fire is large and you feel it will not be able to extinguish the same with small fire extinguisher, move to safe area till fire team arrives.	First Responder	
7	Take help from same floor & evacuate the staff form affected area.	Second Responder	
8	Reception will announce Code Red with location (e.g.: Code Red third floor - general ward) through PA System three times.	Reception	
9	Inform following about the fire incidence: • Maintenance Supervisor on ( ) • General Administrator on (104) • Medical Superintendent on(103) • Nursing Superintendent on (124)	Reception	
9	After hearing announcement, immediately reach fire location & start fire fighting operation.	Fire fighting team members	
10	Cordon the area, restrict movement, & assist the first responder.	Supporting staff	
11	Staff will be evacuated from affected area to safe location of same floor (Horizontal Evacuation) as necessary.	Supporting staff	
12	Maintenance Supervisor & Administrator will move to location of fire as soon as they get information from reception.		
13	Asses the requirement of power cut off In affected area. He will inform Manager	Maintenance Supervisor	

	maintenance to organize through utility staff.		
14	Inform utility staff to cut off the power supply of affected area.	Maintenance Supervisor	
15	Asses the requirement of oxygen supply cut off in affected area. He will inform Clinical staff in affected area.	Maintenance Supervisor	
16	Alternate arrangement to be done before cut off the oxygen supply for patients.	Nursing staff	
17	Manager BMD to organize through BMD staff. Isolate the oxygen supply to affected area if required.	Biomedical staff	
18	In case if the fire is contended and is under control, call reception on (101/102)and instruct to announce “All Clear”.	Maintenance Supervisor	
19	If the fire is not contained /extinguished or it becomes a ‘Major fire’, decision of vertical evacuation of staff & patients will be taken after consulting with Medical Director.	Maintenance Supervisor	
20	Inform reception to contact Fire brigade and call for Fire Engine.	Maintenance Supervisor	
	Call on (Phone: 101) to fire brigade and ask for help explaining the incidence.	Reception	
21	After reaching location of fire, take over charge from first responder and continue the fire fighting operation with the help of fire extinguishers till Fire Engine and help reaches location.	Fire Fighting team members	
22	Instruct Security personnel at main gate will vacate the parking area to create space for Fire Engine.	Fire Safety Manager	
23	In case if evacuation of patients is required, arrange Stretchers, beds, wheel chairs & space for putting beds with the help of supporting staff. Organize manpower for shifting of patients.	Administrator	
24	In case of Major fire, more elaborate evacuation will have to be done.	Maintenance Supervisor	
25	Take permission for full evacuation from Medical Superintendent & Administrator.	Maintenance Supervisor	

26	In this evacuation, Staff, visitors, relatives & Patients will be evacuated 02 floors above and 01 floor below the floor of fire.	Maintenance Supervisor	
27	Other staff and visitors will be moved out to assembly area by fire exit route.	Security Staff	
28	Patients will be evacuated as per procedure.	Doctors, Nurses & supporting emergency team.	
29	Call the reception on (101/102)and ask them to announce full evacuation.	Maintenance Supervisor	
30	Call outside ambulances services & hospitals & ask for help.	Reception	
31	When fire is under control, instruct reception on (101/102)to announce “Code Red All Clear”.	Maintenance Supervisor	
32	Announce “Code Red All Clear” three times on PA system.	Reception	

11. **MAJOR FIRE (With Partial/full evacuation):** In case of a major fire a decision will be made by General Administrator after consulting Medical Superintendent as to whether to evacuate the hospital or not. Three decisions, which can be made, are as follows: -
    a. **NOT TO EVACUATE:** This could be because the fire has been extinguished or can be extinguished by ERT, without any further spreading to new area.
    b. **PARTIALLY EVACUATE:** This could be because there is no danger of the fire spreading but there is sufficient smoke to cause discomfort to patients in the immediate area or because it is not certain that ERT will be able to bring the fire under control without further spreading.
    c. **FULL EVACUATION:** Based on the fact that the fire is fully out of control.
        i. Alert all inmates one by one and room by room of the emergency situation without causing undue panic and commotion while informing the matter.
        ii. Start evacuating all patients and personnel from the immediate danger area, in a systematic manner.
        iii. Evacuate all the patients first with the help of stretcher, trolleys or by the wheeled cots.
        iv. The medical documents of the particular patient should be sent along as well.
        v. The only route to be used for evacuation of such patients should be the hospital Staircase.
        vi. The lifts should not be used in such situations.

vii. Ambulatory of semi-ambulatory patients should be evacuated one by one using wheel chairs.
viii. Evacuation should be done in an orderly manner without causing confusion or panic.
ix. These patients will occupy the vacant beds on the other floors except the affected area.
x. The duty personnel will leave the emergency affected floor last after ensuring that all the patients, their personal belongings and medical documents are safely evacuated.

NOTE:

1. The situation arise that either the Medical Superintendent does not arrive promptly, the final decision to evacuate the hospital will be made by General Administrator after consulting with Medical Superintendent.
2. The Administrator/supervisor is responsible for calling 101/100 and requesting all available fire and ambulance personnel to respond. Remember keep cool, calm, and collected and we should have a successful evacuation. If we evacuate the entire building, everyone will report to the assembly point. A roll call will be made of each department area involved by the person in charge of each area. The General Administrator will check with each department Head to make sure everyone is accounted for.

12. The hospital has a documented safe exit plan in case of fire and non- fire emergencies.

a. The Fire exit plan shall be displayed on each floor.
b. The Fire exit routes are marked and signages are kept at strategic location.
c. Each patient area and common passages have marked directions of the exit routes to be used in the case of fire and other emergencies.
d. Each facility site is to have a fire evacuation map posted by the entry doors and by all fire extinguishers within the facility. The map should be a floor plan of the facility with the location of exit doors and fire extinguishers identified. e.Arrows should be drawn on the map through the corridors indicating the quickest exit route.
e. No obstructions may be placed in front of or upon any exit door.
f. No aisle, exit access, or stairway may be obstructed with furniture or other obstructions so as to reduce the required with of the exit unless it is required for some maintenance purpose or during night hours when the main entrance is closed.

13. Handling of Non – Fire Emergencies The organization shall take care of non – fire emergency situations by identifying them and by deciding appropriate course of action. These may include:

a. Terror attack.
b. Earthquake.

c. Invasion of swarms of insects and pests.
d. Floods.

The organization shall establish liaison with civil and police authorities and fire brigade as required by law for enlisting their help and support in case of an emergency.

14. Staff is trained for their role in case of such emergencies.

a. The training shall include various.
   i. Classes of fire.
   ii. Information and demonstration on how to use fire fighting equipments.
   iii. Plan of fire exits.
   iv. Safety Guidelines for Patients Escorting and Transporting Patients Lifting and Carrying Patients Evacuating Patients.
   v. Evacuation plan and the procedure to be followed in cases of fire and non – fire emergencies.
   vi. Job responsibility of each member of ERT team.

b. Training record shall be maintained.

15. Mock drills are held at least twice in a year.

a. The Hospital safety committee should organize mock fire and Fire Fighting Team drills twice in a year with the help and guidance from the local fire fighting force.
b. All staff shall be part the drill which gives emphasis of safe evacuation of the patients and occupants in the affected areas or hospital in general, as the fire fighting and containment activity is under progress.
c. Record of mock drills shall be documented.

RECORDS AND FORMATS:

Records of Training

REFERENCES

1. NABH Guidebook to Accreditation Standards for Hospitals 4th Edition, December 2015.
2. NABH Pre Accreditation Entry Level Standards for Hospitals, First edition, April 2014.

Prepared By:	Reviewed By:	Approved By: