

2.8

Facility Management and Safety (FMS)

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A hospital not only serves the medical needs of the society but even generates revenues that are utilized in meeting expenses and further expansions. With every passing day, the need to have excellent hospitals is on the rise. The focal point is that in a hospital there is no second chance as we are talking of human lives, so it is desirable that laboratories and theaters are in prime working condition and precision of all equipment is at the highest level. It is imperative to let professionals handle these facilities and maintain these in accordance with the relevant standards because reliability, professionalism and the sustainable reputation of the hospital relies on these services and facilities.

Healthcare facility management is constantly required to maintain a clean and healthy environment. Maintenance plays a major role in keeping the hospital running in an orderly fashion. Healthcare facilities can use software to figure out how much is being spent on generators and expensive surgical equipment, parts of the building or type of maintenance problem, to enhance their efficiency and drag-and-drop labour calendars to efficiently manage overtime costs. Service requests need to be responded to quickly and efficiently and preventive maintenance schedules need to be set up in order to provide a clean, healthy environment, without interruption.

STANDARD-21. FMS-1: THE ORGANIZATION IS AWARE OF AND COMPLIES WITH THE RELEVANT RULES AND REGULATIONS, LAWS AND BY-LAWS AND FACILITY INSPECTION REQUIREMENTS UNDER THE RELEVANT BUILDING AND ASSOCIATED CODES APPLICABLE TO HOSPITALS.

IND.118

THE MANAGEMENT IS CONVERSANT WITH THE RELEVANT LAWS AND REGULATIONS AND KNOWS THEIR APPLICABILITY TO THE ORGANIZATION.

Applicability of Laws and Regulations to HCE

The basic design of a HCE is ideally required to support its functions e.g.

- i. Emergency services
- ii. Outpatient-related functions
- iii. Indoor facilities
- iv. Diagnostic and treatment activities
- v. Research, training and teaching
- vi. Pharmacy services
- vii. Administration/Hospital management
- viii. Support and supply services
- ix. Residential accommodation for essential staff
- x. Mortuary
- xi. Catering services
- xii. Civic services
- xiii. Parking areas
- xiv. Horticulture

The legal aspect is one of the most significant considerations in planning and designing a project. Architects, engineers, planners, economists and those in allied professions must have working knowledge of the applicable laws, rules and regulations and relevant codes of country before they can practice their profession.

In the Public Sector, **Communication and Works Department (C&W)** is the main governmental body that is responsible for planning and designing hospital buildings. The department has an

architect section headed by the Chief Architect, with the responsibility to design hospital projects.

In the private sector hospital buildings are designed by the architectural firms and local government/LDA should provide the same code.

In either case, designing and planning of the hospital should be done in accordance with the relevant laws/regulations and codes including the following:

a. Zoning Regulations

With the land-use map, this regulation (Guidelines for Development and Operations) ensures that the site selected is located in the area appropriate for the intended use. A planner/designer who designs a site plan must consider the following aspects of the project while remaining within zoning restrictions of the law pertaining to the locality:

1. Access and accessibility.
2. Catchment area to be served.
3. Volumetric dimensional limits of the building in terms of site coverage.
4. Building height.
5. Distance of other facilities and utilities required.
6. Easements and rights of way, if any.
7. Sources of materials and of local skilled and unskilled labour.

Although such regulations constrain design, they also establish the criteria that help to evolve a design which is consistent with the overall plan for the community, without disturbing the local ethos and environment while ensuring safety.

b. Building Code

The building code is provided to achieve the maximum safety in building construction and to establish standard requirements for the construction of buildings that can withstand powerful earthquakes and other calamities. It contains provisions for:

1. Classification and general requirements for hospital by use or occupancy.
2. Types of construction.
3. Light and ventilation.
4. Labour safety and welfare during construction.
5. Sanitation.
6. Electrical and mechanical regulations.

7. Design, keeping in view of history of incidence of earthquakes, cyclones and other disasters/calamities.
8. Protection from ionizing radiation from X-ray equipment.
9. Permits and inspection requirements.
10. Any other code prescribed by State.

c. **Fire code**

The fire code should be provided by the Rescue Department, however the following provisions of the fire code must be adhered to in order to minimize injury, death, and loss to the staff, patients and families and also to curtail damage to hospital infrastructure:

1. General precautions against fire.
2. Principles of fire safety in buildings/structures.
3. Fire protection appliances.
4. Maintenance of fire exits.
5. Purpose specific design of high risk building, such as theatres and auditorium etc.
6. Suppression control in hazardous areas.
7. Specifying smoking areas as per provisions of relevant Law/Rules.
8. Management and use of combustible materials.

d. **Movement of Patients, Attendants and Visitors**

1. Patients should be requested not to leave their ward or floor although walking within the ward area is encouraged when appropriate.
2. Children admitted to the hospital should have an attendant, preferably a female.
3. Ladies in the delivery suite may have their spouse or a female attendant.
4. Patients in private rooms should also be allowed an attendant.
5. For all other inpatients, the ward nurse shall decide on the necessity of an attendant on the basis of the patient's clinical condition.
6. Where permitted, only one attendant shall be allowed per patient.
7. Attendants in female wards should be female.
8. Attendants shall be issued an entry pass to enter and remain in the hospital outside visiting hours.

9. Authorized attendants in the Paediatric Intensive Care and High Dependency Units shall be provided with free sleeping accommodation.
10. All visitors should enter and leave the hospital only through the main entrance. For their own protection, children below 12 years are not allowed to visit patients. Visitors are restricted in the Coronary Care Unit, Intensive Care Units and Special Care Baby Unit.

e. **Other codes**

Other relevant bylaws, regulations and codes include **sanitation codes, environmental protection laws** and **water codes**. These vary in form and content according to the requirements and need of the hospital. By complying with these, the planner and designer should ensure that:

1. Design is consistent with the national/international standards for Public Health and Safety.
2. The permits and licenses necessary for establishing the hospital, related to above mentioned codes, are obtained.

The following **International Standards** should also be considered while designing the hospital:

- A. Facility Guideline Institute (FGI) Guidelines for Design and Construction of Hospitals and Health Care Facilities
- B. International Building Code (IBC)
- C. National Fire Protection agency (NFPA)
- D. The American with Disabilities Act (ADA)
- E. Occupational Safety and Health Administration (OSHA)

f. **Inspection of Hospital Design**

Hospital administration can hire some professional private construction company for inspection of the building design in addition to the indigenous systems of inspection. During inspection, application of National/International building codes, where necessary, must be checked in addition to the following parameters:

1. The land or site upon which hospital is being constructed.
2. Design or structure of the hospital.
3. Use of standardized raw material and its consumption.
4. Methods of construction or workmanship.

5. Sanitation codes, environmental protection laws and water codes.
6. Minimum standards for the width/size of the doors, aisles, passageways, stairways, or other means of exit.
7. Structural strength or the stability of the building to withstand any damages by fire, earthquake, wind, flood, or by any other cause.

IND.119 THE MANAGEMENT REGULARLY UPDATES ANY AMENDMENTS IN THE PREVAILING LAWS OF THE LAND.

Record of Amendments

It is imperative to take into consideration the laws, regulations, and other requirements related to the facility, as a first step. Such requirements may vary depending upon a number of factors including the expected life and location of the facility etc. The management of the HCE is responsible to keep itself/its staff abreast with any amendment/updates in the relevant laws and codes of the land and ensure their implementation during the construction/establishment of the facility in the prescribed time frame.

The HCE management is responsible for planning and budgeting for the necessary upgrading or replacement as identified by monitoring data, or to meet applicable requirements, and then to show progress towards meeting the plans.

IND.120 THE MANAGEMENT ENSURES IMPLEMENTATION OF THESE REQUIREMENTS.

Risk Management

Every organization depending on its size is required to assign one or more individual/s to provide leadership and oversight for planning and implementation of the requirements of the risk management program. All aspects of the risk management program including interalia the following features, must be managed effectively in a consistent and continuous manner:

- i. Planning all aspects of the program.
- ii. Implementing the program.
- iii. Educating the staff.
- iv. Testing and monitoring the program.
- v. Periodical review and revision.
- vi. Annual reports to the governing body/Board on the effectiveness of the program.
- vii. Providing consistent and continuous management support.

This is particularly important during construction or renovation of a facility. For that purpose, qualified engineering services should be mandatory for every HCE

IND.121 THERE IS A MECHANISM TO REGULARLY UPDATE LICENSES/REGISTRATIONS/
CERTIFICATIONS.

Renewal of Licenses and Certifications

This Indicator applies to the renewals of licenses/certifications for Radiology Equipment, Lifts, Diesel Generating sets, etc. The organization should maintain a Log Book/Tracker Sheet for this purpose.

A designated official/staff member should be made responsible to enlist the licenses/registrations/certifications required under the laws and regulations applicable to the HCE. This official in turn could identify the appropriate personnel in the organization who can be made responsible to implement the respective laws and regulations ensuring the timely renewal of the pertinent licenses/certificates.

STANDARD-22. FMS-2: THE ORGANIZATION HAS A PROGRAM FOR CLINICAL AND SUPPORT SERVICE EQUIPMENT MANAGEMENT

IND.122 THE ORGANIZATION PLANS FOR EQUIPMENT IN ACCORDANCE WITH ITS SERVICES AND STRATEGIC PLAN.

Procurement Planning

While planning for selection and procurement of the type, number and specifications of various equipment to be installed in the HCE, the organization must keep into consideration the;

- i. Scope of services to be provided.
- ii. Catchment population to be served.
- iii. Burden of disease in the pertinent location.
- iv. Future expansion/upgradation requirements.

The plans and SOPs regarding equipment selection and procurement should be periodically reviewed and revised.

IND.123 EQUIPMENT IS SELECTED BY A COLLABORATIVE PROCESS.

Collaborative Procurement

Collaborative process in the context of selection of equipment implies that the **end-users, facility management/administration, Finance and Biomedical Engineering** Departments are involved in decision making. Each HCE, depending on its size and requirement **shall notify a Technical Advisory Committee (TAC)** comprising of relevant experts to standardize, regularly review and update the specifications of the equipment/supplies and to provide technical assistance to the hospital management/Procurement Committee and vet the specifications of the bids/tenders. The HCE shall also notify a Procurement Committee comprising of relevant staff/officials which shall process procurement cases in accordance with the relevant procurement rules on the basis of demand placed to it by the users. The Committee shall also co-opt/consult other relevant experts for finalizing procurement proposals keeping in view the future needs. The public sector hospitals must ensure that provisions of the rules framed by the Punjab Procurement Regulatory Authority (**PPRA**) under its statutes, are followed.

IND.124 QUALIFIED AND TRAINED PERSONNEL OPERATE AND MAINTAIN THE EQUIPMENT.**Qualified and Trained Operators**

Every HCE shall ensure that all the equipment installed in the facility is operated by appropriately qualified, trained and skilled staff. The HCE should ensure that arrangements for proper calibration and maintenance of equipment are in place. Ideally, the HCE shall establish a Biomedical Engineering Department under the supervision of a qualified Biomedical Engineer/Instrument Technician. This department shall provide calibration, repair and backup support to the end users. Private hospitals may make contract arrangement with some outside firm or may establish their own department.

IND.125 EQUIPMENT IS PERIODICALLY INSPECTED, SERVICED AND CALIBRATED TO ENSURE THEIR PROPER FUNCTION. THERE IS A DOCUMENTED OPERATIONAL AND MAINTENANCE (PREVENTIVE BREAKDOWN AND REPLACEMENT) PLAN.**Preventive Maintenance Plan**

The HCE shall ensure that the staff operating the equipment is trained in handling the equipment as per the manufacturer instruction manual. There shall be a documented preventive maintenance plan for all equipment and machinery including DG sets etc. using log book/tracker.

The organization shall develop a schedule of weekly/monthly/annual inspection and calibration of equipment which shall involve measurement in accordance with Original Equipment Manufacturer (OEM) guidelines. These services can be provided through an in house arrangement or alternatively through outsourcing. The organization shall ensure that calibration and conformance testing of the equipment has been done prior to commissioning.

The HCEs shall ensure that the record regarding purchase and maintenance of equipment and machinery is properly documented and maintained. The facilities shall ensure that no equipment is non-functional/out of use merely for want of minor repairs, preventive maintenance, lack of essential spares and electrical faults etc. Important factors resulting into gross equipment wastage may also include the following:

- i. Mishandling of equipment.
- ii. Untrained and unskilled manpower.
- iii. Purchase of highly sophisticated equipment without competent personnel to handle it.
- iv. Purchase of excess equipment without a justifiable demand.

This calls for an efficient system for equipment management in the form of carrying out the Equipment Audit. In other words, there is a need for periodic evaluation of the quality of performance of the equipment in a hospital. Some of the advantages of equipment audit include:

- i. It helps in standardization of the equipment.
- ii. Concurrently evaluates performance and utility.
- iii. Provides a satisfactory mechanism to assist phasing out/condemnation.
- iv. The equipment audit reports provide an objective method for procurement of equipment in future.
- v. To identify inadequacies and recommend remedial measures.
- vi. Cost per reportable result and cost effectiveness can be evaluated.

Defining Equipment Audit

- “A retrospective evaluation of quality of performance of equipment in a hospital by an *Equipment Audit Committee* based on documented records of the equipment at the time of purchase and its subsequent maintenance.”

OR

- “Equipment audit is the periodic evaluation of the quality of performance of the hospital equipment.”

Equipment Audit Committee

The Equipment Audit Committee may comprise of:

- a. Health facility in-charge
- b. User HoD or representative
- c. Head of hospital maintenance workshop
- d. The matron or representative

The Equipment Audit Committee shall meet once in three months and select its own chairman and secretary from among the members in the first equipment performance audit. Maintenance of the history sheet and its subsequent write-up is sine-qua-non for performance of the equipment audit by the committee. A Format of the **History Sheet** and **Log Book** is given on the following page.

Table 23: Equipment History Sheet

| HISTORY SHEET | |
|---------------|--|
| S/no. | Description |
| 1. | Name of Equipment |
| 2. | Date of Purchase |
| 3. | Cost of Equipment |
| 4. | Name and Address of Supplier |
| 5. | Date of Manufacture |
| 6. | Date of Installation |
| 7. | Department where installed |
| 8. | Environmental Control* |
| 9. | Spare parts inventory |
| 10. | Technical Manual/Circuit Diagrams/Literature |
| 11. | After Sale Service arrangement |
| 12. | Warranty period |
| 13. | Life of Equipment |
| 14. | Depreciation per year |
| 15. | Charges of Tests** |
| 16. | Use Coefficient*** |
| 17. | Down-time/up time |
| 18. | Cost of maintenance |
| 19. | Date of Condemnation |
| 20. | Date of Replacement |
| 21. | Other Relevant Remarks |

*Proper environment control in terms of temperature, lighting, and ventilation should be ensured and recorded, wherever applicable.

**Wherever applicable, charges of tests must be specified.

***Should be applied to assess the utilization of equipment.

Table 24: Equipment Log Book

| LOG BOOK | | | | | | | |
|----------|-------------------|-----------------|---|-------------------|----------------|---------------|-----------------------------------|
| S/no. | Description | | | | | | |
| | Name of Equipment | Warranty Period | Validity Period of maintenance contract | Date of breakdown | Date of repair | Cost incurred | Details of Preventive Maintenance |
| 1. | | | | | | | |
| 2. | | | | | | | |
| 3. | | | | | | | |

The various parameters to be considered in equipment audit procedure are as follows:

Procurement

The following need consideration:

1. Need assessment – Was the equipment required? What was the use coefficient of the equipment?
2. Were the technical specifications worked out and provided by user department?
3. Were the same specified in the tender notification?
4. Was the receipt of equipment as per the specifications of the supply order?
5. Was availability of spares ensured, after services contract specified and training arranged?

Performance

History sheet and log book may be gainfully utilized for this. It is essential that periodic scientific evaluation of the quality of performance of the equipment is carried out. The process of equipment audit will also prove to be an indispensable tool in formulating standards/specifications of medical equipment and in the establishment of bench marking for medical equipment.

Maintenance or 'planned preventive maintenance' is regular and repetitive work done to keep equipment in good working order and to optimize its efficiency and accuracy. This activity involves regular, routine cleaning, lubricating, testing, calibrating and adjusting, checking for wear and tear and eventually replacing components to avoid breakdown. Productive preventive

maintenance refers to the proper selection of equipment to be included in planned preventive maintenance. Decisions must be made on what to include and to reduce costs (consideration is cost-effectiveness).

An important aspect of planned preventive maintenance is the participation and commitment of the user (Planned Preventive Maintenance). Preventive maintenance should start with users, and the bulk of the work should be their responsibility. The task must be performed daily, with joint activities involving the user and a technician engineer at the end of the week. Highly technical repairs, which are the engineer's responsibility, may be scheduled every six months or on a need basis.

Setting Up a Planned Preventive Maintenance System

In order to establish an effective, efficient planned preventive maintenance system, a Registry Filing System is needed. The Manufacturer's Manual for preventive maintenance of the equipment can be supplemented by computer packages in setting up such a system; if a computer is not available, a manual file can be set up. The planned preventive maintenance administrative system requires the following:

1. Equipment Inventory

All relevant information about the equipment must be entered, including its location, records of repair and maintenance, and the manufacturer.

A reference number is given and written on a printed paper label, which is attached to each item. This number is recorded in a ledger of equipment with full identifying details.

All equipment in the hospital that is in the care of the hospital service workshop should be recorded on registers or cards, as shown in the format ahead.

Table 25: Sample Equipment Service History Form

| Sample Equipment Service History Form | | | | | | | | | | |
|---------------------------------------|-----|-------------|---------|---|------------------------|------------|--------------------------|---------------|--------------|--|
| Name of facility | | | | | | | EQUIPMENT FUNCTION | | | |
| Location | | | | | | | | | | |
| Department | | | | | | | | | | |
| Name of equipment: | | | | Approved by: | | | Date installed | : | | |
| Manufacturer | | : | | | | | Manuals | : | | |
| Distributor | | : | | Power: _____ v _____ a no. of wires: | | | Freq. of P.M | : | | |
| Model No | | : | | Type of enclosure: | | | Remarks | : | | |
| Serial No | | : | | Type of plugs: | | | | | | |
| Date | C/P | W.O N.O. | LEAKAGE | | WORK DONE | Work By | Total labour hours | Parts cost | Rema- rks | |
| | | | GR D | O.GRD | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| C = Curative repair. | | | | | P = Preventive repair. | | | | | |
| Leakage = Leakage Current | | | | | | | | | | |

2. Establishing a 'Maintenance Schedule'

After determining what is to be done, the frequency of the task must be decided. A heavily used item must be cleaned and checked more frequently than one, which is used less often; however, minimum frequency must be set. The frequency suggested in the manufacturer's manual can be used as a guide, but the actual usage should determine the maintenance procedure required.

The schedules presented here are meant to serve only as guidelines; modifications may be introduced to conform to the manufacturers' specifications. An outline record card will be included with each schedule for recording measurements. The engineer should also note on

the record card any item that needs to be replaced, if work is to be carried out later, and whether or not the same engineer is to carry out the work.

STANDARD-23. FMS-3: THE ORGANIZATION HAS PLANS FOR FIRE AND NON-FIRE EMERGENCIES WITHIN THE FACILITIES.

IND.126 THE ORGANIZATION HAS PLANS AND PROVISIONS FOR 1. EARLY DETECTION, 2. CONTAINMENT AND 3. ABATEMENT OF FIRE AND NON-FIRE EMERGENCIES.

Emergency Plans

The Organization shall:

- i. Have a fire plan covering fire arising out of burning of inflammable items, explosion, electric short circuiting or acts of negligence or due to incompetence of the staff on duty.
- ii. Deploy adequate and qualified personnel for implementation of the plan.
- iii. Acquire adequate firefighting equipment and ensure that records are kept up to date.
- iv. Have adequate training program.
- v. Have schedules for, and conduct, Mock Fire Drills.
- vi. Maintain Mock Drill Records.
- vii. Explicitly display Exit Plans.
- viii. Have an Alarm and dedicated emergency illumination system, which come into effect in case of fire.

Necessary Items and Equipment

- a. Fire-proof blanket.
- b. Safety shower.
- c. Buckets with sand.
- d. Portable fire extinguishers are essentially of two types; CO₂ and Bromochloridefluoromethane (BCF) (halon, halogenated hydrocarbons) and can be used without causing damage to electrical equipment. The extinguishing power of halon is about 6 times that of CO₂. Water has the disadvantage that it conducts electricity whereas powder extinguishers (containing salts) cause damage to instruments.

Actions

- A. When fire is detected, stay calm, try to oversee the situation and watch out for danger. Then the following actions should be taken in this order:
 - I. Close windows and doors.
 - II. Give fire alarm (shouting, telephone, fire alarm).
 - III. Rescue people (and animals if present).
 - IV. Switch off electricity and/or gas supply.
 - V. Fight fire, if possible with at least two persons.

- B. Persons with burning clothing should be wrapped in a blanket on the floor, sprayed with water or be pulled under a safety shower. *A CO₂ fire extinguisher can also be used, but do not spray on the face.*
- C. When using fire extinguishers, it is important that the fire is fought at the seat of the fire i.e. at the bottom of the flames, not in the middle of the flames.
- D. If gas cylinders are present there is the danger of explosion by overheating. If they cannot be removed, take cover and try to cool them with a fire-hose. When the situation looks hopeless, evacuate the building. Let everybody assemble outside and **check that no one is missing.** To practice this, a **Regular Mock Fire Drill** (once a year), should be held.

IND.127**THE ORGANIZATION HAS A DOCUMENTED SAFE EXIT (EVACUATION) PLAN IN CASE OF FIRE AND NON-FIRE EMERGENCIES.****Emergency Exit Plan**

All workplaces should have adequate exits and unobstructed escape routes in case of fire. The number of exits required for all employees to exit safely depends on several factors, including whether the facility uses substances that are at a high risk for combustion, the layout of the building and the type of construction materials used. **Fire Exit Signs** must also be posted.

All hospitals must have **at least two exits**, so if one is blocked during a fire, the other may be used. These exits must be clearly marked and obstructions must be kept away from exits at all times.

The organization shall take care of non-fire emergency situations by identifying those and deciding appropriate course of action. These may include:

- i. Earthquake
- ii. Civil disorders effecting the HCE
- iii. Terrorist attacks
- iv. Invasion of swarms of insects and pests
- v. Invasion of stray animals
- vi. Hysteric fits of patients and/or relatives
- vii. Anti-social behaviour by patients/relatives
- viii. Temperamental disorders of staff causing deterioration in patient care
- ix. Spillage of hazardous (acids, mercury, etc.), infected materials (used gloves, syringes, tubing, sharps, etc.) and medical wastes (blood, pus, amniotic fluid, vomits, etc.)
- x. Building or structural collapse
- xi. Fall or slips or collision of personnel in the corridors
- xii. Fall of patient from the bed/stretchers

- xiii. Bursting of pipelines
- xiv. Sudden flooding of areas like basements due to clogging in pipelines or heavy rains
- xv. Sudden breakdown of supply of electricity, gas, vacuum, etc.
- xvi. Bursting of boilers and/or autoclaves

The HCE shall prepare and act according to the specific instructions of the Health Department regarding allocation of beds, calling staff on emergency duty and ensuring uninterrupted supplies etc. in case of war related emergencies.

The HCE shall establish liaison with civil and police authorities, and **Rescue 1122** and the **Fire Brigade** as required by law for enlisting their help and support in case of an emergency.

Emergency Exit System

- a. The floors of beams of egress shall be illuminated at all points including angles and intersections of corridors and passageways, landings of stairs and exit doors with bulbs of not less than one thousandth (0.001) lumens per square centimetre.
- b. Lighting source is of reasonably assessed reliability, such as public utility electric service.
- c. Emergency lighting facilities maintain the specified degree of illumination in the event of failure of the normal lighting for a period of at least one hour.
- d. Illuminated "EXIT" signs – distinctive in colour, reliable source – five thousandth lumens (0.005) per square centimetres.
- e. Size of signs – plainly legible letters not less than fifteen centimetres high with the principal strokes of letters not less than nineteen millimetres wide.
- f. Provide luminous directional exit signs located one foot or below floor level.
- g. There should be separate ingress and egress routes.
- h. Corridors, hallways and aisles must be 2.4 meters in width.
- i. Use of ramps as access to second and higher floors.
- j. Stairways with safe and adequately secured railings.
- k. Stairway must be at least 112 cm. wide and made of concrete.
- l. Any opening in any wall shall be protected by fire doors or fixed wire glass windows. It must have protection for vertical openings also.
- m. Any door in a stairway, ramp, elevator shaft, stairway enclosure or light and ventilation shaft or chute, shall be self-closing, and shall normally be kept closed.

IND.128 **MOCK DRILLS ARE HELD AT LEAST ONCE IN A YEAR.****Mock Drills**

The following actions should be taken to comply with the standards;

- i. **Mock drills are conducted on all shifts in all buildings.** Mock drills are conducted in all locations on each shift. For the Hospital, drills on top and network floors are conducted so that the area of fire origination is evaluated along with the floor above and below. All drills are reviewed for the purpose of identifying deficiencies and for improvement. Unless specifically arranged, all mock drills are unannounced.
- ii. **At least 50% of the required drills are unannounced.** Management maintains a schedule of drills which is designed to cover all areas of the facility. The Fire Safety Manager reviews the schedule and makes adjustments based upon drill performance and real events.
- iii. **All mock drills are critiqued to identify deficiencies and opportunities for improvement.** Health and Safety fire safety staff coordinates fire drills, which includes critiques. Fire wardens observe staff reaction and participation. After the drill, the lead fire warden conducts a debriefing with the nurse in-charge and/or the fire warden, advising of any problems or areas for improvements. A report of the drill is maintained identifying what went well and opportunities for improvements and tracks their progress.
- iv. **The effectiveness of fire response training according to the fire plan is evaluated at least annually.** The Health and Safety committee completes an annual evaluation of the Environment of Care. A score is utilized to rate compliance to the main elements of the Standards.
- v. **During fire drills, staff knowledge is evaluated including the following:**
 - a. When and how to sound fire alarms (where such alarms are available).
 - b. When and how to transmit for offsite fire responders.
 - c. Containment of smoke and fire.
 - d. Transfer of patients to areas of refuge.
 - e. Fire extinguishment.
 - f. Specific fire response duties.
 - g. Preparation for building evacuation.

Table 26: Sample Format of a Fire Drill Report

| Fire Alarm/Fire Drill Report | |
|---|------------------------------|
| To be completed after every alarm or drill by designated fire safety officer | |
| Date: _____ | Time: _____ |
| Location of Alarm/Fire sign: _____ | |
| Name of person pulling alarm: _____ | |
| 1) Rounds of hospital made by: | |
| 1 st Floor: _____ | 2 nd Floor: _____ |
| Doors Closed: _____ | |
| Hallways Cleared: _____ | |
| Visitors/Patients – Instructed Appropriately: _____ | |
| Staff knows how and when to turn off O ₂ : _____ | |
| Fire Extinguishers on Location: _____ | |
| Staff was aware of location of fire and prepared to evacuate through appropriate Exits: | |
| _____ | |
| _____ | |
| Staff from departments other than Nursing at appropriate posts: | |
| _____ | |
| _____ | |
| Staff Co-operation: | |
| _____ | |
| 2) Reason for Alarm (if not a planned drill): _____ | |
| 3) Communication to Switchboard: _____ | |
| 4) Additional Comments: _____ | |
| 5) Problems Identified/Recommendations: _____ | |
| _____ | |
| Signed: _____ | Position: _____ |

IND.129 STAFF MEMBERS ARE TRAINED FOR THEIR ROLE IN CASE OF SUCH EMERGENCIES.**Training in Emergency Situation Handling**

The training shall include various classes of fire, information and demonstration on how to use a fire extinguisher and the procedure to be followed in case of fire and non-fire emergencies.

- i. **All Hospital Staff** especially the following staff is required to attend a **Training Course** on the theory of fire and the practical use of fire extinguishers:
 - a. Chefs
 - b. Staff of the A&E Department
 - c. Designated Maintenance Staff
 - d. Designated Technical Staff
 - e. Senior Residents
 - f. Other staff identified according to Risk Assessments
- ii. **Specific roles and responsibilities of staff, and volunteers at a fire's point of origin.** Fire Wardens are trained to respond to the enunciator panel in their area to determine location of alarm. The Fire Warden assigns additional specific duties in and away from the fire point of origin as needed.
- iii. **Specific roles and responsibilities of staff, and volunteers away from a fire's point of origin.** When chimes sound, indicating the alarm source is on another floor, staff is trained to be on standby for further instructions. In departments away from the fire origin, staff should prepare the area in case an evacuation is necessary. At a minimum, the following is done: keep patients and visitors calm and informed, close doors in department to limit spread of smoke from a fire, and clear corridors of equipment to ensure clear evacuation route. In off-site facilities, staff, patients, and visitors exit to the exterior of the building, no matter where the fire is located.
- iv. **Specific roles and responsibilities of staff and volunteers in preparing for building evacuation.** In the event of a total building evacuation, it is the responsibility of each area Director/Manager/Supervisor to insure that all staff and patients are accounted for. Nursing staff is trained and responsible to first evacuate patients from the immediate fire area. This normally includes the room that is on fire, rooms on either side or the room directly across the hall, closing all other patient room doors for temporary protection. They will then proceed with full compartment evacuation to the closest adjacent smoke compartment. They will then complete the evacuation of the involved smoke compartment. Further vertical evacuation occurs when and if the Fire Warden determines the area or building is untenable and needs to be evacuated. This will occur with the assistance of Fire Department manpower as well as a manpower pool formed by hospital employees for the specific incident.