The safety of lives of patients and their attendants in the hospital should be the prime responsibility of each member of the hospital staff. Amongst the numerous hospital hazards, the fire holds a specific mention because of many reasons. Firstly, each hospital being a store house of many combustible materials like linen, beddings, dressing materials, spirit, inflammable therapeutic gases etc. and secondly, the patients admitted in the hospitals are sick and disabled so they require help of others for evacuation to safer places in case of fire.

The government Medical College, Jammu has a multi-storeyed and a complex building and it requires very scientific planning and well laid down norms for fire safety, fire fighting and rescue operation. All categories of staff working in this complex building should have the basic knowledge of fire safety measures and fire fighting equipments. They should also be aware of their responsibilities in such an eventuality.

The “Fire Manual” by Dr. Yashpal Sharma, Dy. Medical Superintendent, Govt. Medical College Hospital, Jammu covers all the above mentioned aspects in addition to evacuation plans for all wards and Departments of the College. I am sure that the manual will create awareness amongst the staff members and make the College a safer place to work.

( Dr. H.L. GOSWAMY )
Principal
Govt. Medical College
Jammu.
## Contents

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Introduction</td>
<td>01</td>
</tr>
<tr>
<td>2.</td>
<td>Grades of fire</td>
<td>02</td>
</tr>
<tr>
<td>3.</td>
<td>Elements of fire safety</td>
<td>02–08</td>
</tr>
<tr>
<td>4.</td>
<td>Fire safety training</td>
<td>08–09</td>
</tr>
<tr>
<td>5.</td>
<td>General Instructions</td>
<td>09–11</td>
</tr>
<tr>
<td>6.</td>
<td>Do’s and Don’t’s for electrical fire prevention</td>
<td>11–13</td>
</tr>
<tr>
<td>7.</td>
<td>Actions to be taken in case of fire</td>
<td>13–16</td>
</tr>
<tr>
<td>8.</td>
<td>General Evacuation plans</td>
<td>16–23</td>
</tr>
<tr>
<td>9.</td>
<td>First Aid and Supportive Management</td>
<td>23</td>
</tr>
<tr>
<td>10.</td>
<td>Check list for fire safety: Weekly</td>
<td>23–24</td>
</tr>
</tbody>
</table>
I. INTRODUCTION

Among the numerous hazards to human life and property ‘the fire’ has a special place, this becomes all the more special when it involves sick and dependent human beings as in Hospital scenario. The safety of lives of patients in a hospital should be the primary concern, interest and responsibility of hospital authority and personnel i.e. doctors, nurses, para-medical and technical staff and non-medical staff of all categories working at the Government Medical College Hospital and other buildings should have a basic elementary knowledge about fire safety, fire fighting and rescue operation.

The multi-storey building of the Government Medical College Hospital Jammu should therefore have well laid down fire safety/measures and fire fighting equipments.

To implement fire fighting procedure efficiently and effectively, all the staff working in the respective departments should be aware of the hazards of fire and their responsibilities, if eventuality so ever arises. The procedure laid down should be disseminated to all the staff and should also be practiced periodically.

The name fire is given to a process whereby any substance combined chemically with oxygen in the air produces heat and light. Fire is thus a combination of three things i.e. (1) Heat (2) Material and (3) Oxygen. If any one out of these three things is eliminated from the fire, the fire is automatically extinguished. Fire is, therefore, fought or extinguished always on these principles.
II. GRADE OF FIRES

Fire has been classified as A-grade, B-grade and C-grade fire.

A-Grade fire

A-grade fire are caused by an ordinary combustible material like wood, coal, paper etc. This type of fire is extinguished by using fire extinguishers like Soda Acid, Water CO₂, dry Chemical Powder, Water, etc.

B-Grade Fire

B-grade fires are caused by inflammable liquid specially those which are lighter than water. For this purpose, Fire extinguishers like Halon and Dry Chemical Powder should be used.

C-Grade Fire

C-grade fires are caused by electrical faults, either in fittings or in distribution points. The cause of such fires are generally because of the over and excessive loading on the aluminium wiring. Most of the fires in the Hospitals have occurred because of the electrical faults or due to unauthorised excessive loading of the electrical circuits.

III. ELEMENTS OF FIRE SAFETY

The basic approach of any institution should be to have well laid down and practiced fire policy. The fire safety programme consists of following elements in chronological orders:

(a) Prevention
(b) Detection
(c) Containment
(d) Evacuation
(e) Extinguishment

(A) PREVENTION

Prevention encompasses those activities of fire safety programme which occur before an actual fire. This will include:

(i) Detection and correction of the hazards
(ii) Fire Control pre-planning

(iii) Employee and occupant education

(iv) Design and specifications

(v) Equipment testing

(vi) Drills and liaison with fire department.

These measures are essential to prevent and also organise the system to take appropriate action in case of any contingencies. It is difficult to attain all these prevention absolutely, therefore the organisation should compromise with ideal and that which is reasonable within economic and operating limitation.

Though all components of fire safety are so closely integrated that it's difficult to separate them, all fire elements mentioned above plays a prevention role at some stage or other. It is also important that a regular periodic inspection by security officer/fire officer should be carried out and all hospital premises to find out storage of any obstruction to fire-escape route, careless use of oxygen cylinders, flammable liquids and any other fire programme violation.

Security personnel on their rounds should note and correct hazards everyday. Security staff should be particularly alert for people smoking in prohibited areas. They should also correct and report the careless exit use of oxygen cylinders, obstruction doors and other safety violations.

(B) DETECTION

The application of automatic early warning fire detection system has helped a great deal in early detection of fire. The fire detectors require a sensing unit which measures the presence and/or change in the products of fire, which are basically flame, heat, smoke and gases. The functioning of detectors are based on these senses, and they are activated when the standards are exceeded, and once the detector senses an abnormal condition, it must transmit a signal to an annunciator. This signal can activate any predetermined message or alarm on which an appropriate
action can be taken by the earmarked staff. The various types of fire detectors (sensors) are enumerated as:

(i) **Fixed temperature sensors** activate when a preselected temperature is reached. These sensors are quite inexpensive and have good reliability. They also require very little maintenance.

(ii) **Rate of rise sensors** activates when the temperature accelerates rapidly. The rate of temperature rise to be exceeded is generally in the range of 15° to 20° F per minute.

(iii) **Combination of fixed temperature and rate of rise of temperature.** While the temperature rising devices are reliable and relatively maintenance free but they are rather slow to respond to slow burning and smouldering fire.

(iv) **Photocell detection units** sense the mashing of light beam by smoke particles or the reflection of smoke particle into the cell. They are reliable but require considerable maintenance compared to heat sensor. They are also slow to respond to hot clean fire.

(v) **Flame sensors** are not widely used but do provide fast response to the quick developing fire. They are fairly expensive and require a fair amount of maintenance activity.

(vi) **Products of combustion sensor** are quick to respond and to detect either visible or invisible gases. They provide a means for early warning and are used quite extensively despite a relatively high degree of false alarms.

Fire detection system in most of the hospital services are combination of sensors due to the varied application presented by the medical care environment. Automatic fire detection has saved countless number of lives over the past years.
CONTAINMENT

The third element of the fire safety programme is that of containing smoke and fire. The objective is to contain the fire in the area of origin, when this is not possible the concept is one of providing successive level of defence or areas of refuge from fire. There are fire of these basic areas defined in the "life safety code", they are also referred to as the unit concept, which are room, a compartment, a floor, a building and exists, all these units have distinct function in the fire protection system.

(i) **Unit one**: The room is the smallest unit and is the first line of defence. The function of unit one is to provide the first barrier against the passage of smoke.

(ii) **Unit two**: The compartment is the second level of defence with the intent of providing two areas of refuge on any given horizontal plane of the hospital. If an area must be evacuated the initial movement will be horizontal as opposed to a vertical movement. The compartment is created by smoke and fire resistive partitions.

(iii) **Unit three**: The floor, or floor assembly, is the next level of containment. The function of the floor assembly is to prevent the spread of fire and smoke from one floor to another, either above or below, the floor involved. These assemblies are penetrated by stairways, shafts and chutes, which require spread protection.

(iv) **Unit four**: The building is the fourth unit or level of fire protection. It must remain structurally intact for a period of time.

(v) **Unit five**: The exit is the final unit in the unit concept of fire protection. The basic requirement is that at least two remote exits be provided on each floor or fire section of the building. This means that two separate means of exit should be visible from any location in the corridor.
The containment of the fire can also limit the air needed to sustain combustion. A fire will generally rise to seek ventilation. If it cannot continue to rise, the smoke and heat build up will work back downward, looking for a lateral opening. If there is any air in the room that is breathable it will be found closest to the floor. When a fire is contained extreme caution must be taken when entering the area as the opening of the door may provide the exit the fire is seeking.

(D) EVACUATION

The fourth and a very important component of the hospital fire safety plan is evacuation of patients, visitors and staff. The employees of hospital are responsible to see that every patient is evacuated to safety.

Evacuation can be whole or partial and it can follow vertical or horizontal flow. The total evacuation of patient from a hospital is however a last contingency. The concept of evacuation plan will be to move the patient horizontally to the safe area (compartment) on the same floor and required than only to shift vertically by two or three floors up and down. Wheel chairs and stretches are useful and often necessary for evacuation, but they may not be available at the time and place of emergency. The blankets and sheets are most important piece of equipment on hand for evacuation purpose, the blanket/sheets can be handled by one person to drag a patient, and where two carriers are available the blanket can be used as improvised stretcher.

It was observed at some hospitals that fire department personnel were concerned and reluctant about discontinuing patient monitoring, oxygen, traction and other medical equipment. It is therefore suggested that a team approach should be adopted and each team comprising hospital personnel who is accustomed and acquainted with such procedures.

A vertical evacuation plan is mandatory for a high rise building, a building with seven or more storeys. The exit routes should be well maintained, the elevators need special consideration for fire evacuation plan.
E) EXTINGUISHMENT

The last element of the hospital fire safety programme is extinguishment of the fire itself. The suppression of fire is achieved either by manually or by automatic extinguishing system.

The manual extinguisher are stored water in the departments/site Carbon dioxide extinguishers the multipurpose (ABC) type and to a limited degree the halon-21 are used. The stand pipe and hose located in the hospital building are used to provide quick and convenient water streams on upper/lower storey of high rise buildings. This system of water hose is basically installed to be used by fire department or trained Fire Brigade personnel.

The automatic extinguishing system comprises of automatic water sprinkle system, which also acts as an alarm device. The operation of the sprinkler is generally activated by a holding link which melts at a given temperature. The sprinkle systems utilized in hospital are almost always of wet system type as opposed to a dry system. Other piped extinguishing methods are steam, water spray, foam, carbon dioxide, dry chemicals and halon agents.

Employee Reaction: Proper employee reaction to the fire situation is one of the fundamental factors in saving lives and property. The fire safety is a race against time, and the action taken and lack of action in few minutes can make the difference between a minor fire threat and a tragic disaster.

Since the employees must react instinctively when fire breaks out, detailed instruction are seldom remembered and hence acronyms expressing essential steps are suggested:

A.

S Save patients or person if in immediate danger
A Alarm-Sound the alarm
V Vent-Close doors and windows to keep fire contained
E Evacuate and extinguish-use evacuation routes and first aid fire extinguishers equipment.
B.

R Rescue those in danger
A Activate the Alarm
C Contain the smoke and fire
E Evacuate and extinguish

It is essential that to execute these steps properly, all staff members irrespective of their jobs and status must receive continuous inservice training. Unless the personnel have been through the actual experience, a very few persons are able to imagine the swiftness with which the fire danger can spread and the panic that can ensue. Hence larger the staff members have received the training, the better the chances that they will react correctly under extreme stress.

IV. FIRE SAFETY TRAINING

Planning for a fire emergency requires cooperation and understanding from every employee in the Hospital. Each employee is potentially the one who may discover a fire or be the first to arrive at the scene of an alarm. The degree of personnel turnover and their effective involvement in carrying out fire-preventive measures largely depends upon their continuous inservice and new employees training.

Robert Palmer of North Memorial Hospital in Minneapolis, a national recognised authority on Hospital fire safety, has emphasised the importance of following functions:

1. Rescuing those in immediate danger.
2. Properly reporting the fire.
3. Confining the fire.
4. Securing the fire.
5. Using the proper extinguisher
6. Controlling employees, visitors and patients and
7. Meeting and guiding fire department personnel to the scene
The Hospital Administration should earmark a staff member responsible for imparting regular in service and to new employees fire safety training. The methods for training may include:

1. Training session, where employees are actually handling fire extinguishers and patients requiring evacuation.
2. Posters of fire prevention and safety.
3. Organising fire drills.
4. Assessing the knowledge of employees by random stopping and questioning them about their role in case of Hospital fire, the person who answers the question correctly should be suitably rewarded by a meal coupon or some affordable gifts (Soap cake etc.)

V. GENERAL INSTRUCTIONS

1. All the fire escape routes (staircases and corridors) which have been encroached upon or blocked, must be got cleared for providing emergency exit.

\ *Sister Incharge of the wards to ensure that fire escape staircases and corridor are not encroached upon. Fire safety officer to carry out periodic checks of all the fire escape routes and staircases.*

2. All the gas pipelines, particularly the oxygen lines and their regulators, must be thoroughly checked periodically and a proper record of its checking be maintained by manifold room incharge. Any problem of leakage of gas should be immediately intimated to manifold room as well as to the DMS/MS office, CMO and action to be taken to avoid fire hazard.

3. All heating appliances must be used with a plug and socket of proper Ampere and use of excessive load from a particular point must be avoided to prevent short-circuiting. Repeated electrical problems in the particular ward/area must be investigated by electrical department for any excessive loading on particular point. Sister
Incharge ward to ensure that over-loading of electrical points is avoided.

4. Monitoring system in every department and section should be introduced to ensure that person leaving last, satisfies himself that all the unwanted heating appliances are switched off and water taps closed.

5. Proper type of fire extinguishers and other fire fighting equipment should be readily available for use in the event of fire. Special safety and fire preventive measures should be ensured where very costly and sensitive electronic equipment has been installed. Fire safety officer to ensure provisions of fire extinguishers and other fire fighting equipment in all wards/department and sections. Sister incharge ward to ensure that fire extinguishers and fire fighting equipment issued to the ward is kept in readiness for use in case of fire.

6. "No Smoking" instructions and other safety precautions must be enforced in all stores, Lecture Theatres and Auditorium, Manifold Room, X-Ray department and Laundry etc.

7. Good housekeeping: Attention to matters commonly referred to as :good housekeeping" can reduce the likelihood of fire incidences. The basic practices therefore to be observed are :-

Avoid the accumulation of rubbish particularly in "out of sight" spaces, e.g. lift shafts, behind radiators, basements, dead-end of corridors and keep cleaning rags and materials in a non-combustible container after use.

8. Sister and officer incharges of respective areas should ensure that wall fire hydrants are functional in each area; it is one CO$_2$ Cylinder and one Soda Acid/Water CO$_2$ Fire extinguishers and one water drum with 9-10 buckets full of water are available at all times.

9. Fire safety officer to detail one person by name-for checking that fire equipments held in the departments
are available physically accordingly to the list available in the fire control room and they are serviceable. Establishing a fire control room with all communication facilities.

10. Electrical checking for overloading and condition of wires specially in sensitive areas, should be carried out periodically.

11. Fire resistant materials must be used in renovation and construction work.

12. Whenever inflammable fluid is there it must be labelled.

13. Each area must have a plan as per type of fire.


(a) All fire escape routes and emergency exit doors should be clearly marked with luminated paints and electrical sign posts with clear directions in Hindi and English.

(b) Keys of all emergency exit doors should be kept in the box near the door. Sister incharge of each ward must frequently check the key box so that in the event of emergency, the emergency doors are quickly opened. Staff of each ward and Department should be made conversant about these matters.

(c) The locks of the emergency doors should be such that these can be opened by one master key, which will be kept in central fire control room. They key should be kept in the box near the door and one key be with sister on-duty.

VI. DO’S AND DONT’S FOR ELECTRICAL FIRE PREVENTION

1. Lights and fans should be switched off when not required or rooms are to be locked.

2. Flexible leads of portable appliances should be
well protected to avoid damage to the insulation of wires.

3. Defective heaters and appliances should be removed immediately from service until these are repaired and tested for satisfactory performance.

4. The capacities of connecting leads, wires and switches must match the load requirement of equipments.

5. All heaters, table and pedestal fans etc. should be fitted with proper guards.

6. To restart window type air-conditioners, after being switched off, about 5 minutes gap should be given.

7. Proper and secure earth connections to the heating appliance and other electrical equipments must be ensured.

8. In case any excessive heating, burning smell or sparking in wiring or connections is noticed, control switch should be put off immediately.

9. Do not connect portable electrical appliances to the electrical outlet points through bare and loose ends, proper plug tops be used always.

10. Do not use more than one portable electrical appliance to a single outlet point at the same time.

11. Do not use heaters and high rated equipment on light (5 ampere) socket outlets.

12. No multipurpose plug tops should be used for connecting more than one appliance on a socket outlet point.

13. Extension Boards should be normally used, if unavoidable, the extension boards should not have more than a set of 15 Amp, 2 Nos. of socket outlets.

14. Do not add or connect any new electrical equipment
unless proper wiring and outlet point of matching capacities are provided.

15. Heaters and hot plates must not be left unattended while these are on.

16. Passages and approaches to main switches, distribution boards and riser-rooms should not be blocked or locked.

17. Do not pile or stock office records and other stores near socket outlet points or in riser rooms.

18. Do not block or close the heat dissipation system and arrangements of electrical machines and equipments.

19. Do not use stabilizers or emergency light tops, as racks.

20. Use of heaters must be avoided in entire basement storing spaces particularly stationery, linen and medical stores.

21. Do not keep heaters and heat producing appliances too close to the overhanging curtains, combustible and other flammable items and chemicals.

22. All the electricians to pay extra attention for using proper insulation after repairs.

VII. ACTION TO BE TAKEN IN CASE OF FIRE:

I. Action by Employee or worker on the spot:

1. To verify the extent of fire outbreak

2. To intimate at once to immediate superior present on duty in that area.

3. Worker in the area will take immediate action to put off the fire.

4. Sister Incharge/Doctors on Duty/Sr. Worker on duty to inform Medical Superintendent, CMO on duty, Security Officer-cum-Fire Officer located in main building
| Medical Superintendent Office  | 415 | 584226 | 580587 |
| Deputy Medical Superintendent | 416 | 584225 | 582365 |
| Fire-cum-Security Officer     | 402 |        |        |

II. Action to be taken by sister in-charge present on the floor, who acts as a Controlling Authority.

A. IF SMALL FIRE
   1. Organise few personnel available to extinguish the fire using fire extinguisher or by improvisation.
   2. Get all, inflammable material removed e.g. spirit, Oxygen Cylinder, Cotton, bandage, rags and mattresses etc. from the site of fire.
   3. Put off main switch if there is an electric short circuit.
   4. Organise shifting of patients, specially, lying cases, with help of available staff and attendants of patients to places of safety.
   5. Get the fire escape route opened.
   7. Ambulant patients to be guided to go to other floors by using staircase or ramp.
   8. Ask Medical Superintendent office for more manpower.
   9. Organise the shifting of non-ambulatory cases first horizontally and then by lifts.

B. IN CASE OF BIG FIRE
   1. Fire escape routes which are already identified to be used.
   2. Walking patients will go out horizontally and then by using the staircase or ramps.
   3. Lying cases will be shifted away from the site of fire then their rescue will be organised by staff immediately
available with guidance from Doctor/Sisters/Senior worker present on the spot and with the extra manpower which will be sent by Medical Superintendent/Matron Office.

4. Doctors/Senior Sisters/Senior most workers present on the spot will assist sister incharge on duty in operations till Security Officer or any other officer deputed by Medical Superintendent/Deputy Medical Superintendent arrives.

5. Ask some one responsible to inform following personnel of Fire incidence, at the earliest opportunity and by fastest means.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Persons to inform</th>
<th>Telephone nos.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Int.</td>
<td>Office</td>
</tr>
<tr>
<td>Page</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Principal &amp; Dean</td>
<td>510 584234</td>
<td>433002 (P)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Medical Superintendent</td>
<td>415 584225</td>
<td>433085 (P)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Dy. Medical Supdt.</td>
<td>416 584226</td>
<td>433070 (P)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Casualty Medical Officer</td>
<td>400/401 575364</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Matron</td>
<td>417</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Security Officer</td>
<td>402</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Electrical Enquiry</td>
<td>407</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Executive Engineer</td>
<td>404</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Fire Brigade</td>
<td>101 554060 (Canal Road)</td>
<td>544256</td>
</tr>
</tbody>
</table>
NOTE:

(a) While giving information to aforesaid authorities speak clearly without creating PANIC to the patients, staff and to the informer.

(b) Specify the exact location of the fire indicating its severity.

(c) While intimating the Jammu Fire Brigade tell them the route they should adopt for an early and easy excess to fire location.

Use of Fire Extinguishers

At every station one CO₂, one water CO₂, one ‘D’ shape water drum with 9 buckets of water and one wall fire hydrant should be provided. Appropriate type of fire extinguishers should be used on different types of fires. Do not use water in any electrical fire without switching off the main. For localised electrical fires, CO₂ fire extinguishers should be used even if the current is on.

For Fire other than electrical or oil fires

Water CO₂ fire extinguishers, water in ‘D’ shape water drums containing 9-10 buckets, should be used. In case fire is of bigger magnitude. The services of fire brigade should be sought.

VIII. GENERAL EVACUATION PLANS

General principles of evacuation in Multi-storey Building:

1. Horizontal evacuation is easier than vertical evacuation.

2. Evacuate lying cases horizontally first and then evacuate vertically down.

3. Evacuate patient to three floors down depending on the site of fire as the floor immediately above and below has potential risk of fire if it is not brought under control.

4. Evacuate able bodied and ambulant patients preferably by ramp/stairs.

5. Evacuate lying cases by lift if possible.
Problem in evacuation

There are many problems in evacuation of patients from patient care areas. These are:

1. Disable patient or lying cases needs support.
2. Life support measures like oxygen etc. may be required for patient even during evacuation. Evacuation with ventilatory support.
3. Paediatric cases and babies in nursery will need assistance from attendants.
4. Unconscious cases required to be evacuated as lying cases.
5. Some of the psychiatric cases will require embrai support during evacuation for their safety. One has to avoid panic amongst such cases.
6. Orthopaedic cases rendered immobile due to disease or plaster will need total assistance in evacuation.
7. Cases under immediate post operative care will need extra attention specially those with ventilatory support.

PATIENT CARE AREAS REQUIRING SPECIAL ATTENTION

(a) Recovery ward

(b) Operation theatre
  (i) Emergency OT
  (ii) Surgical OT
  (iii) Ortho OT

(c) ICU, CCU, Dialysis Unit and Burn Ward

(d) Ward No. 1, Spinal ward, Ward 2, 4, 5, 6, 7 & 11

Post operative cases
Cases to be operated upon or undergoing surgery
All serious cases will require attention
Majority of cases esp. orthopaedics cases will have to be helped during evacuation.
The decision for evacuation of the patients from the site of fire will have to be taken by doctor/sister present on the spot depending on the extent and severity of fire. This decision should be taken in due course without creating any undue panic. The doctor/nurse on the spot will have to take charge of situation till arrival of Medical Superintendent/Deputy Medical Superintendent/CMO on the site.

Assessment of total number of patients needing assistance in evacuation should be made by doctor/nurse on the spot and project additional requirements of manpower, wheel chair, stretchers/trolleys to the Medical Superintendent/Deputy Medical Superintendent. Till arrival of additional help mobilise all available manpower in the ward and utilize available wheel chairs, trolleys and stretchers.

**EVACUATION PLAN FORWARDS AND DEPARTMENTS:**

The general evacuation plan for evacuation of patients will depend on the site of fire and will be as under:-

**Evacuation from D block**

The D block has ward 2, 3, 7, 11, Pathology & Microbiology department and hospital labs.

(i) If the fire is towards the end of the ward, then evacuate the patients by the side of the C block using ramp, stairs or lifts towards E block.

(ii) If the fire is at the entrance of the wards, then the door towards the department offices can be opened and patients shifted through the stairs and the connecting corridors.

(iii) If the fire is in the middle of the ward near the nursing station, the patients can be shifted from either sides.

(iv) Maximum ambulatory patients be evacuated through the stairs.

**Evacuation from C block**

The C block has ward No. 1, ICU, 6, 10 and 15
(i) If the fire is at the entrance of wards, then the door towards the department offices can be opened and the patients shifted through the stairs and the connecting corridors.

(ii) If the fire is towards the end of the ward, then evacuate the patients through the ramps and stairs of E block. The lying cases evacuated through the ramps, lifts where as the ambulatory through the stairs/lifts.

**Evacuation from the E block**

The E block contains Eye OT, Ortho OT, Surgical OT complex, ward 4,5,8,9,12,14. The E block has the dirty corridors on the back side of the OT complex and similar corridors at the back of the ward also. These corridors can be used in case of fire for the evacuation of the patients.

(i) If the fire is at the entrance of surgical OT, the dirty corridor exit doors can be opened and the patients evacuated. If the fire is at other places, depending upon the site, the exit door can be used for the evacuation of patients.

(ii) If the fire is in the wards depending upon the location of fire the exit doors towards the dirty corridors, main entrance, side entrance or exit door towards the other ward used for evacuation of the patients and patients shifted through the stairs/ramps or lift to the safer places.

(iii) If the fire is in the Eye or Ortho OTs, depending upon the site of fire, the exit doors towards the dirty corridors or main entrance be used for evacuation of patients.

**Evacuation from B block**

The block has casualty in the ground floor, Disaster ward, Recovery ward and emergency OT in the first floor and Electro medical diagnosis department in the 2nd floor.

(i) If the fire is in the casualty, depending upon location of the fire, the exit door in Room No 7 or the main entrance
door be used for evacuation of patients. The glass panes in the examination areas can be broken for the safe exit of the patients attendants and the staff.

(ii) If the fire is in the recovery ward the main entrance/exit door be used for evacuation of patients or the door towards the emergency OT opened and patients shifted via the emergency OT.

(iii) If the fire is in the disaster ward, depending upon the area involved, patients be evacuated through the main entrance or towards the eye OPD.

(iv) If the fire is in the emergency OT, depending upon the site of fire either main entrance door or the door towards the recovery ward be used for evacuation of the patients and staff.

(v) If the fire is in the Electro Medical Diagnosis department, depending upon the site of fire, the evacuation can be done either through the main entrance or the door towards the B block corridor.

Evacuation plan for Radio-Diagnosis Department

(i) Depending upon the site of the fire the evacuation of patients and staff be done either through the main entrance or the door towards the corridor of kitchen.

Evacuation plan for Radiotherapy Department

Depending upon the site of fire the evacuation of patients and staff, through the main entrance or from the back door towards Engineering Section.

Evacuation plan for Microbiology and Pathology Department

(i) Depending upon the site of the fire, the door towards Medical College towards Biochemistry or towards the wards can be used for the evacuation of the staff.

Evacuation plan for Biochemistry Department

In case of fire in Biochemistry department there is only one entrance exit door which has to be used for evacuation of staff.
Evacuation plan for Anatomy Department

In case of fire the Anatomy department has multiple exit door which can be used depending upon the site of fire for evacuation of staff and students.

Evacuation plan for Physiology Department

Depending upon the site of fire the door towards the Principal office or stairs towards Anatomy Department can be used for evacuation.

Evacuation plan for Pharmacology Department

Depending upon the site of fire, the door towards the Principal Office/Lecture theatre, door towards the ward 3 or the stair towards the Physiology department be used for evacuation.

Evacuation plan for PSM Department

Depending upon the site of fire, the door towards the auditorium or stairs towards the Pharmacology Department be used for evacuation of staff and students.

Evacuation plan for Library and Principal office

In case of fire, there is only one entrance/exit gate which has to be used for evacuation of students and staff.

Evacuation plan for OPD's

The OPD block has Physiotherapy section in the basement, Eye and Ortho OPD in the ground floor and Medicine and Surgery OPD in the first floor.

(i) If the fire is in the Physiotherapy section, depending upon the site of fire either the stairs towards the ortho OPD, ramp towards the registration area or exit towards Forensic Medicine Department be used for evacuation of the patients. If the fire is at the entrance of the Physiotherapy with staff and patients trapped inside then one of the window towards parking can be broken and the evacuation done.

(ii) If the fire is in the Orthopaedics OPD then depending on the site of fire either main exit or towards the eye OPD can be used for evacuation of the patients and staff.
(iii) If the fire is in the Eye OPD then depending upon the site of the fire either main entrance or the exit towards the recovery ward be used for evacuation of the patients and staff.

(iv) If the fire is in the Medicine OPD, then the main entrance or the connecting door to OPD can be used for evacuation of the patients.

(v) If the fire is in the surgical OPD depending upon the site of fire, the main entrance, door towards the Electro Medical Diagnosis Department or the door of the toilet complex connecting the Medical OPD could be used for the evacuation of patients.

**Evacuation plan for Sir Col. R.N. Chopra Nursing Home**

Sir Col. R.N. Chopra Nursing Home has operation theatres and administrative block in the ground floor, 1st and 2nd floor operational with sixteen rooms each for the patients and some consultant rooms in the 4th & 5th floor. Each floor of Nursing Home at one end is connected through ramp to the main hospital and other end through stairs which are kept locked and can be opened in case of fire.

Depending upon the site of fire, the patients and staff be evacuated through the back stairs, ramp or the stair near the lift. The lift should be avoided as far as possible.

**Evacuation plan for support and utility services**

The fire fighting plan for areas like kitchen, laundry, CSSD, Boilers, electric sub station, refrigeration plant etc. be prepared separately by the Incharges of those sections.

**Assistance for Evacuation**

Mobilise all available manpower for evacuation of lying cases. Seek the help of attendants in arranging evacuation. Utilize available resources like wheel chairs, trolleys, stretchers, etc. and also project the additional requirement to Medical Superintendent/Deputy Medical Superintendent or Casualty Medical Officer on duty.
IX. FIRST AID AND SUPPORTIVE MANAGEMENT

1. Activate the disaster plan, if the fire is of big magnitude.

2. Casualty staff, residents and consultants on call be informed of evacuation plan for arranging reception of casualties and arranging first aid.

3. An assembly point at the entrance of casualty or OPD complex will be established under casualty staff who will sort out the casualties and allot priorities as specified in disaster plan.

4. Contract will be established with other hospitals in the city and they will be informed about transfer of casualties in case it is required.

5. An alarm/siren can be fitted in the hospital so that on hearing the alarm all the medical and para medical staff assembles at a point for help.

Note:

(a) All the fire exit should be cleared of obstructions and it should be checked and reported by Security Officer.

(b) Fire exit alongwith the arrows showing routes should be displayed at exit door.

(c) The key of the exit doors should be kept under lock and key near the door in a box with glass in the front of box so that in case of fire this glass is broken and the key used for opening of exit door.

(d) The use of lifts should be avoided as far as possible as the fire might cause disruption in the electricity or the smoke might choke the person in the lifts.

X. CHECK LIST FOR FIRE SAFETY : WEEKLY

1. Water hydrant located strategically Yes/No

2. Water hydrant connection are standardised/compatible with local fire department loose lines Yes/No

3. Sprinkle system provided where indicated Yes/No
4. Fire Alarm system working effectively  
5. Adequate Fire Extinguisher available  
6. Following are available and in working condition in each working are:
   (a) Wall fire hydrant  
   (b) One soda Acid/water CO$_2$ Extinguisher  
   (c) One CO$_2$ extinguisher  
   (d) One water drum D shaped with 9-10 buckets of water  
   (e) Availability of water Adequate/inadequate  
8. Any combustible/inflammable material near potential fire point. If yes, material and its location  
9. Fire escape routes are free  
   If no-location of any obstruction  
10. Fire escape routes door lock keys available  
11. Emergency Fire lights and directional sign adequate  
12. LPG are stored in a cool and non fire area.  
13. LPG inspected for linkage on receipt  
14. Kitchen Exhaust working  
15. Fire lift connected with generator working/not working  
16. Fire safety regulation training programme imparted to Hospital staff satisfactorily  
17. Up-to-date list of training record maintained  
18. Periodic/surprise check carried out  
19. Last periodic/surprise check carried out Date & Time  
20. Record for periodic check maintained