

A Study to Assess the Awareness of the Fire Safety Measures among the Staff in Fortis Escorts Hospital, Amritsar

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Abstract: *Hospitals are large complexes occupied with patients, visitors & staff on a 24-hour basis for medical, obstetric & surgical care. Hospitals are well prepared to handle external emergencies that bring in patients needing life-saving measures but an internal hazard like a fire is more disruptive & puts an increased amount of stress on the hospital authorities to ensure the safety of the patients & visitors who are unfamiliar with the layout of the building & procedures to follow in case of a fire. Fires can be devastating & is an ever-present risk in any organization especially more in a healthcare setup due to the kind of chemicals, gases, materials, and consumables used, and the type of occupants who are mainly vulnerable. Thus, every healthcare setup needs to plan how the occupants would be kept safe in case of fire*

1. Importance of Fire Safety and Protection Measures

After a devastating fire broke out in a Kolkata AMRI hospital on December 2011, and after the recent outbreak of fire in Columbia Asia Hospital, Bangalore, has increased the Importance of fire safety. Fires pose a continual threat to hospitals and nursing homes. Fire has the potential of a destructive force. Fires take a heavy toll of human life throughout the world and fires in hospitals are not infrequent. Fire accidents are becoming a serious threat to hospitals because consumable used have more affinity to catch fire and many lives are lost in fire accidents.

Fire safety & protection is matter of vital importance concerning everyone in the hospital industry. Therefore norms & codes for building design & fire safety should be followed properly, not only for high rise hospital buildings but also for small set up or nursing homes (Dr Manjula M Rajiv Gandhi University of Health Sciences, Karnataka)

The Fire Safety Program aims broadly to increase fire safety awareness, reduce the risk and number of fires, reduce loss of life, injury, and property damage through education, training, and inspection as well as policy and standard development. It focuses to reduce number of fire deaths and injuries and case prevention by identifying and rectifying unsafe behaviors. The National Fire Protection Association (NFPA) and the Occupational Safety and Health Administration (OSHA) are the primary standards used in the development. Safe environment is essentially both for the patients availing treatment and for the employees working in the hospital. Since equipment's form a major part of expenditure for hospitals and to provide treatment to patients, it is very essential to protect the equipment's also from the destructive forces. The present study aims at patient and equipment safety from fire accidents and awareness of staff about various fire safety equipment's in Fortis Escorts Hospital, Amritsar (Fire safety workplace OSHA)

Fire is a small word with a serious meaning. Few persons have had first-hand experiences of the consequences of a serious fire and as such most people do not realize the

devastation, destruction, and damage to human life and property that fire can cause. Fire is leading cause of injury and death. The outbreak of fire poses a significant threat to all persons within a building, and it can also have psychological upheaval that is potentially distressing for both employer and employees (Mc Kimmie et al.2011)

Ahrens (2007) reports that during 2000 - 2004 there was one reported civilian death and fifteen injuries in office property with smoke detection systems installed, based on a total number of fires of 880. For the case of the fatality it was unable to be determined if the system was operating correctly at the time of the fire. Death rates for apartments were 390 deaths from 94, 700 fires(U.S. Experience with Smoke Alarms and Other Fire Detection/Alarm Equipment ", NFPA)

Fire is only one type of emergency that happens at work. Large and small workplaces alike experience fires, explosions, medical emergencies, chemical spills, toxic releases, and a variety of other incidents. To protect employees from fire and other emergencies and to prevent property loss, whether large or small, companies use preparedness plans (also called pre-fire plans or pre-incident plans). The two essential components of a fire preparedness plan are the following:

- 1) An emergency action plan, which details what to do when a fire occurs
- 2) A fire prevention plan, which describes what to do to prevent a fire from occurring

During study, it is found that fire is a frequently occurring hazard in Pakistan, and many fires occur because of the lack of awareness on the part of occupants such as using temporary and low quality electric and gas fixtures/lines, and using poor quality gas cylinders. Many buildings have no fire safety measures at all. In 12 high-rise buildings, a number of small fire safety fixtures have been provided, though not of standard specifications in most of the cases, however, automatic sprinklers have been provided in two buildings only. Compartmentation has not been done in almost all the buildings. Cost of fire safety design is only about 3-4% of the overall cost of the building, but, if this

small amount is not invested initially then a fire incident can result into economic loss 17 times as high as the original cost of the building in case of large fire such as Ghakar Plaza fire apart from closure of business for a long time (Shahid H.et.al October 2014)

Main cause of high casualties in the hospital fire accidents which happened before 1950 was the lack of installation of automatic fire systems. At the same time, there was a lack of fire sprinklers, detectors and alarms. There was a chance that an existing hospital equipped with an automatic fire system would escape damage. However, there was another problem: poor planning, maintenance and management of the fire safety system. At the same time, it was found that there were many old hospitals in the world which needed attention. These hospitals did not comply with the latest fire technology and were made with combustible materials. In the other words, these hospitals did not fulfill the law and authority requirements. Moreover, from these fire accidents, it was known that a lot of the hospitals did not have or apply a suitable fire safety management system, such as fire drills and training provided to the hospital staff (Woon Chin Ong and Mohd Zailan Suleiman March 2015) Consequent to the AMRI hospital fire incident on December 2011, Government of West Bengal had modified the existing "West Bengal Act XXVI of 2010. In February 2012, a woman died when her rope snapped during mock fire drill in a high rise building in Bangalore. This did take place due to low quality of equipment. (Dr Indrajitpal, Dr. Tuhin Ghosh January 2014).

Protection against fires should be provided by appropriate building design and use of compartments, plans for discovering and putting out fires; he said the basic elements of fire safety programming are Prevention, Detection, Containment, Evacuation and Extinguishment. He said for patient safety it is the responsibility of those involved in equipment management to see that both staff and patients are protected from potential hazards that exist in hospital environment. The electrical grounding should be maintained and periodic checks must be to ensure that chords are not frayed or damaged and there is no leakage of current (Tabish Amin 2003)

2. Importance of Fire Safety in hospital

Fire safety is so important to all hospital administrator, employees and designers that the leadership in the hospital field should make every effort to keep abreast of current developments in fire safety field. Each of these person's actions, no matter how routine, may have an important bearing on the total fire safety environment of the hospitals occupants (Julian Samaria Fire Prevention in Hospital vol. 105)

3. General Safety Measures

The following are general safety measures in establishing and maintaining fire protection in the workplace:

- 1) The management should appoint a senior person as a fire safety manager who has the direct responsibility for the observance of the fire safety procedures, keeping a check on maintenance needs and ensure that staffs are

conversant with the safety procedures and the occupants carry out their work in a safe manner particularly where handling flammable products or hazardous equipment. . (H L Malhotra October 1993)

- 2) Provision for escape route, i.e. corridors, fire doors and staircase design and specification, should be improved, along with the occupant's awareness of evacuation procedures in an emergency situation and how to use fire suppression systems.
- 3) Also, regularly checking and auditing of fire safety aspects in building and strict enforcement of regulations to ensure that escape routes are safe for use at all times should be carried out.(Yahya Mohammad Yatim June 2009)

According to Kunders (2004) that 3 elements are required like heat, fuel and oxygen for a fire to sustain itself. He classified the fires into 3 general types, Class A, Class B, and Class C. He has listed the basic responsibilities of every employee, what to do in case of fire like use Code, Evacuate, Sound alarm, Dial telephone operator, etc.

John Moore (2012) said the research was that where a fire has occurred involving either the nightwear or bed clothes of an occupant of a bed, the fire experiments have indicated that sprinklers alone are unlikely to operate soon enough to prevent the occupant of a bed being fatally injured or suffering very serious injuries from flames and/or heat.(from total safety .com Webb Murray)

Fires can arise from heat producing equipment such as burners, ovens, and grills due to poor housekeeping, unemptied grease traps, dirty ducts, and improper storage of flammable items, faulty or frayed electrical cords. He has listed possible solutions like fixed dry chemical extinguishing systems used to fight grease. Fires must meet requirements of dry chemical fire extinguishers and fixed extinguishing systems; provide an emergency action plan and a fire prevention plan (Joshi DC, Joshi Mamta 2009)

OSHA, 2007 guidelines on fire safety preparedness. The principals should constitute fire safety committees, ensure fire safety preparedness policy documents are available and at least annual fire drills and fire audits are performed. All staff should be trained on fire safety preparedness and firefighting; fire safety preparedness guidelines should be observed in building construction (Emma Mwikali Muindi October 2014)

J Srinivasan, M Thirunavukarasu said that. Recently, the Fire Precautions (Workplace) Regulations was revised in 2007 in India with part of the items in fire safety management Local government is also concerned about building management and fire safety The concept of effective building management could be provided by the Home Affairs Department. In fact, an overall fire safety system, construction and management of the fire safety provisions should be worked out. At this transition period of clarifying which is the Best fire safety management scheme, GSM method is the clear cut Answer

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