DISSERTATION INTERNSHIP

at

Sitaram Bhartia Institute of Science and Research
New Delhi

A Study to

"Assess the Level of Fire Safety Awareness and Preparedness at a Multi-Specialty Hospital in New Delhi"

By
Dr Ridhima Kataria
PG/21/083

Of

Post Graduate Diploma in Health and Hospital Management

Batch 2021-23

International Institute of Health Management and Research
New Delhi

Internship Training

at

Sitaram Bhartia Institute of Science and Research
New Delhi

On

A Study to Assess the Level of Fire Safety Awareness and Preparedness in a Multi-Specialty Hospital in New Delhi

By
Dr Ridhima Kataria

PG/21/083
Under the Guidance of
Pijush Kanti Khan

Post Graduate Diploma in Health and Hospital Management
Batch 2021-23

International Institute of Health Management Research
New Delhi

(Completion of Dissertation from respective organization)

The certificate is awarded to

Name Dr. Ridhima Kataria

in recognition of having successfully completed his/her Internship in the department of

Title Quality and Training.

and has successfully completed his/her Project on

Title of the Project A Study to Assess Fire Safety Awareness and Preparedness in a Multi-Speciality Hospital

Date 21 April 2023.

Organisation Sitaram Bhartia Institute of Science and Research, New Delhi.

~~He~~/She comes across as a committed, sincere & diligent person who has a strong drive & zeal for learning.

We wish him/her all the best for future endeavors.

DR. SHUBHRA VERMA
General Manager
Sitaram Bhartia Institute of Science and Research
B-16, Qutab Institutional Area, New Delhi-110016

Training & Development

~~Zonal~~ Head-Human Resources

Anitha Nanoharan

HR Dept.
NEW DELHI

Annexure D

TO WHOMSOEVER IT MAY CONCERN

This is to certify that Dr. Ridhima Kataria student of PGDM (Hospital & Health Management) from International Institute of Health Management Research, New Delhi has undergone internship training at Lilaram Bhatia Institute of Medical Research from Jan '2023 to April '2023.

The Candidate has successfully carried out the study designated to him during internship training and his/her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish him all success in all his/her future endeavors.

Dr. Sumesh Kumar
Associate Dean, Academic and Student Affairs
IIHMR, New Delhi

Mentor
IIHMR, New Delhi
Dr. Pijush Kanti Khan.
Assistant Professor.
IIHMR - Delhi.

Certificate of Approval

The following dissertation titled **"To Access Fire Safety Awareness and Preparedness in a Multi-Speciality Hospital in New Delhi"** at **"Sitaram Bhartia Institute of Science and Research"** is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **PGDM (Hospital & Health Management)** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed or conclusion drawn therein but approve the dissertation only for the purpose it is submitted.

Dissertation Examination Committee for evaluation of dissertation.

Name	Signature
Dr. Ashok Aggarwal	
Dr. Aman Raj Gupta	Aman Raj Gupta
Dr. Altaf Yousuf Mir.	

Certificate from Dissertation Advisory Committee

This is to certify that **Dr.Ridhima Kataria,** a graduate student of the **PGDM (Hospital & Health Management)** has worked under our guidance and supervision. He/ She is submitting this dissertation titled "TO Access Fire Safety Awareness and Preparedness in a Multi-Speciality Hospital in New Delhi " at "Sitaram Bhartia Institute of Science And Research" in partial fulfillment of the requirements for the award of the **PGDM (Hospital & Health Management).**

This dissertation has the requisite standard and to the best of our knowledge no part of it has been reproduced from any other dissertation, monograph, report or book.

Institute Mentor Name,

Designation,

Organization

Dr. Pijush Kanti Thom.
Assistant Professor.
IIHMR - Delhi.

Organization Mentor Name

Designation,

Organization

SITARAM BHARTIA
Institute of Science & Research

TO WHOM IT MAY CONCERN

This is to certify that **Dr. Ridhima Kataria** student from IIHMR, Delhi has successfully completed a study project **"A Study to Assess Fire Safety Awareness and Preparedness at a Multi-Specialty Hospital"** under my guidance and mentorship during her internship as a part of her curriculum. She completed the study in the department of Quality and Training from January 2023 to April 2023 at Sitaram Bhartia Institute of Science and Research. There are no potential risks associated with this study and the institution gave her clearance on the same. The dignity, wellbeing and confidentiality of the staff who participated in the study was maintained throughout the study. and the same was approved by the institution.

I observed that her work was excellent and I appreciate her sincere learning. She performed her study project with positive energy and enthusiasm.

I wish her all the best for her future endeavours.

Sincerely,

Dr. Shubhra Verma

General Manager

Sitaram Bhartia Institute of Science and Research

DR. SHUBHRA VERMA
General Manager
Sitaram Bhartia Institute of Science and Research
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Annexure E

INTERNATIONAL INSTITUTE OF HEALTH MANAGEMENT RESEARCH, NEW DELHI

CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled ....Access Fibre Safety Awareness and Preparedness in a Multi speciality Hospital in New Delhi..... and submitted by (Name) ....Dr. Ridhima Kalaria..... Enrollment No. ....PG/21/083.... under the supervision of ....Dr. Pijush Khanti Khan.... for award of PGDM (Hospital & Health Management) of the Institute carried out during the period from ....Jan 2023.... to ....April 2023.

embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other Institute or other similar institution of higher learning.

Signature

FEEDBACK FORM

Name of the Student:

Dr. Ridhima Kataria

Name of the Organisation in Which Dissertation Has Been Completed:

- Sitaram Bhartia Institute of Science & Research, New Delhi

Area of Dissertation:

A Study to Assess the Fire Safety Awareness & Preparedness at a Multi Specialty Hospital.

Attendance: Satisfactory

Objectives achieved: Study regarding fire safety has been completed with predefined objectives.

Deliverables: Yes, all the deliverables about project has been completed.

Strengths:

- Passionate towards task given
- Regularity
- Interest in the task, knowledge about

Suggestions for Improvement:

- More precise timetable for any assigned to be created.

Suggestions for Institute (course curriculum, industry interaction, placement, alumni):

—

Signature of the Officer-in-Charge/ Organisation Mentor (Dissertation) Shubhra

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Date: 21 April 23

Place: New Delhi

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CERTIFICATE ON PLAGIARISM CHECK

Name of Student (in block letter)	Dr./Mr./Ms.: Ridhima Kalaria		
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Course Specialization (Choose one)	Hospital Management	Health Management	Healthcare IT
Name of Guide/Supervisor	Dr./Prof.: Pijush Kanti Khan.		
Title of the Summer Training/ Dissertation	To Access the fire Safety awareness & Preparedness in a Multi Speciality Hospital in New Delhi		
Plagiarism detect software used	"TURNITIN"		
Similar contents acceptable (%)	Up to 15 Percent as per policy		
Total words and % of similar contents Identified	7 %		
Date of validation (DD/MM/YYYY)	04/07/2023		

Guide/Supervisor
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Student
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Signature:

Report checked by

Institute Librarian
Signature:
Date: 6.7.23
Library Seal

Dean (Academics and Student Affairs)
Signature:
Date: 6.7.23.
(Seal)

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This paper and the research behind it would not have been possible without the exceptional support from all the Senior Managers, Managers and Employees at Sitaram Bhartia Institute of Science and Research. I am grateful to them for big-heartedly sharing their treasured insight and valuable time that helped me perform efficiently during my internship. I would like to show my sincere gratitude to the Dr. Shubra Verma (General Manager) and the entire team of Quality Department for sharing their pearls of wisdom and knowledge with me during the course of this research.

Mentors in IIHMR

I am obliged to Dr. Pijush Khanti Khan (Associate Dean IIHMR-Academics) who provided me constant support and guidance during my internship period. His enthusiasm, knowledge, experience and exacting attention to detail have been an inspiration and kept my work on track from my first encounter to the final draft of this report.

Section 1 :

Organization Profile

SITARAM BHARTIA
Institute of Sciences & Research
care you can trust

SITARAM BHARTIA INSTITUTE OF SCIENCE AND RESEARCH

HOSPITAL PROFILE

An integrated healthcare provider and medical research facility, Sitaram Bhartia Institute of Science and Research was founded in 1990. There are diagnostic and inpatient facilities available, and it offers care in many different medical disciplines. It is renowned for having an extraordinary group of medical professionals, many of them are graduates of famous universities in India.

The main goals of Sitaram Bhartia's research are to gather information on our population's health, create interventions to improve the quality of care, and draw attention to underutilized facets of medical treatment.

The facility comprises 70 beds, operating rooms, an ICU, a NICU, and other crucial services. It offers exceptional diagnostic and inpatient facilities in addition to offering care in a variety of medical disciplines. Treatment at the Sitaram Bhartia Institute of Science and Research is described in terms like ethical, trustworthy, supporting, and efficient care. The faculty is made up of illustrious professors and other senior physicians from various fields who act as mentors for the second generation of medical professionals in the organisation.

International Patients

Both the patient and their loved ones may find receiving treatment outside of the country and away from home to be a genuine physical struggle and emotionally trying time. The Sitaram Bhartia Institute of Science and Research in New Delhi is an organisation that is aware of this issue and has created a committed, knowledgeable,

and global patient care staff. Every international patient's visit to the Sitaram Bhartia Institute of Science and Research is made comfortable, enjoyable, and hassle-free by the patient care team. Because they are aware that a patient will mend more effectively if they feel better, the International Centre attends to even the smallest details to make you feel at home.

The hospital takes pleasure in providing multidisciplinary medical treatment and service excellence, which is accomplished through a perfect fusion of medical genius, individualised care, and research, which focuses on generating quality improvement solutions. The best patient care is offered to patients by qualified doctors, trained nurses, allied health professionals, and paramedics who are supported by our cutting-edge facilities and technology.

Vision

to serve society as a source of excellence in medical research, treatment, and instruction

Core Ideology

- Putting the needs of the patient first
- Treating others, the way you would like to be treated
- Always improving, and developing institutions are all examples of good behavior.

` **Mission**

We will be a thriving medical center renowned for its dedication to using evidence-based treatment and giving top-notch care. Our well-established research initiatives will be centered on improving our knowledge of the healthcare requirements in our communities and creating workable solutions to meet those need. We will be recognized as trailblazers for successfully tackling healthcare issues that could have otherwise gone unaddressed. We will be at the forefront of training medical professionals and have agreements for collaboration with top universities from around the globe. Donor organizations and private donors will value our work and generously support our projects. We shall be universally regarded as a symbol-serving organization.

Director's Message

The hospital was established with the goal of advancing society via scientific inquiry.

As a result of our emphasis on health, the hospital has evolved into an establishment that combines medical research with first-rate patient care. Our research focuses on obtaining information on health, implementing evidence-based recommendations into clinical practice, designing accessible treatments for improving care, examining variables influencing disease development, and assessing medical literature to generate clinical guidelines.

The team in the institution work hard to provide care in accordance with internationally recognized, research-based best practices for medical care. This usually translates to a systematic strategy where teams of medical specialists collaborate to fully address the requirements of patients and their families. Continually assessing and enhancing the caliber of our service is another area where outcomes assessment is being used more and more.

Our patients frequently say that we offer care they can trust because of our commitment to upholding honesty in all of our activities. We anticipate working with you and hope that your experience with us will be comparable.

Management Team

Abhishek Bhartia– Director

The chief executive, Abhishek Bhartia, is responsible for providing direction, creating and implementing strategy, involving physicians, and fostering improvement capability within the company. Since 2003, he has served as Director, and he holds an MBA from Massachusetts Institute of Technology.

Saru Bhartia – Deputy Director

Clinical and non-clinical improvement initiatives are managed by Saru Bhartia, the head of the quality division. She has successfully completed more than 50 projects in

the following areas: medical, obstetrics, paediatrics, diabetes, laboratory work, nursing, operating room work, housekeeping, food and beverage work, telephone exchange work, patient services work, and others. She has worked on initiatives with more than 125 people, ranging from clinical directors to front-line employees. She manages specific programmes that aim to increase the use of existing services and introduce new ones, in addition to quality. In addition to receiving an advanced lean certification from Virginia Mason Hospital, Saru Bhartia has been qualified as an improvement advisor by the Institute of Healthcare Improvement.

Dr. Sneh Bhargava – Medical Director

The medical director and head of the radiology division is Professor Sneh Bhargava. She oversees daily medical leadership while also spearheading our drive to achieve accreditation from the National Accreditation Board of Hospitals and Healthcare Providers.

One of the most illustrious doctors in India, Professor Bhargava spent a significant amount of time at AIIMS where he held a number of positions, including director, chairman of the hospital management board, and head of the department of radiodiagnosis. She has won the Padma Shri as well as numerous other honours.

Dr. Jitender Nagpal – Deputy Medical Director

Dr. Jitender Nagpal supports Dr. Sneh Bhargava and is in charge of the hospital's overall management. In this capacity, he gives the Institute vision and direction for growth and development, enabling it to excel in healthcare delivery.

In addition, Dr. Jitender oversees and consults on paediatric cases at Sitaram Bhartia. In addition to his duties as a doctor and administrator, he also actively directs the hospital's research efforts. He has a number of projects that have received international funding, including a recently finished double-blind, randomised controlled trial that examined the effectiveness of maternal B12 supplementation in vegetarian women in partnership with UCL, London, and PNWH, Kathmandu.

He was recently appointed as an Honorary Visiting Faculty member at the Public Health Foundation of India in recognition of his outstanding efforts.

Dr. Shubra Vera, Ph.D. – General Manager – Operations

In her role as general manager, Dr. Shubhra manages operations and helps Sitaram Bhartia realise one of its fundamental principles, institution building. Having worked in the healthcare industry for more than 19 years, Dr. Verma has contributed to the design and development of electronic and medical equipment as well as the improvement of operational and service standards.

She spent eight years as the corporate head and general manager of service quality at the Max Institute of Health Education & Research in New Delhi before joining Sitaram Bhartia. She has also assisted the medical equipment design team at GE Healthcare, where she has filed three patents and one counter publication related to medical equipment.

Dr. Shubhra is a trained Six Sigma Black Belt and possesses a Ph.D. from the Institute of Technology at Banaras Hindu University.

Research at Sitaram Bhartia

The Sitaram Bhartia Institute of Science and Research was founded in 1979 with the intention of conducting research in the areas of basic and applied sciences as well as medicine. Under the leadership of its first director, Dr. N. Gopinath, the Sitaram Bhartia Institute of Science and Research conducted one of the largest community-based investigations of coronary artery disease in India. Then, a substantial study on the blood pressure of Indian schoolchildren was initiated. These studies gave us important knowledge on the risk factors for cardiovascular disease in our country. With their support, our community's standards for normal blood pressure and cholesterol levels were also set.

Prof. H.P.S. Sachdev is currently in charge of the Research Division. Only after receiving the necessary approval from regulatory agencies, a third-party ethical committee, and participants' informed written agreement is any research involving human subjects carried out.

Recent years have seen the institute focus its research efforts on non-communicable diseases, maternity and child health, nutrition, and contemporary issues of national concern. The main topics cover child survival, global nutrition policy, micronutrients, and the standard of care. They also cover the causes of adult diseases that start in childhood, the role of vitamin D in diabetes and significant morbidity in children, the rising epidemic of metabolic diseases linked to obesity, and the rising epidemic of metabolic illnesses. Numerous cohort investigations, randomised controlled trials, and secondary research, including systemic reviews, have been employed as study approaches.

Both internal and external funds have been used to support the study. The World Health Organisation, the Indian Council of Medical Research, and the Department of Biotechnology are just a few of the national and international organisations that have provided extramural funding. We have partnered with a number of reputable and respected national and international universities in the pursuit of nationally relevant and translational research. Please refer to the overview of our most current Research initiatives for further information.

The amount and calibre of recent research production are shown by the 158 articles that have been published since 2006, of which 81 have been published in journals with an international impact factor, 28 in journals with a national impact factor, and 35 in journals that are not indexed. Among them are articles from prestigious journals with a high international citation index, including the Lancet, British Medical Journal (cover article), Cardiology, Journal of the American Medical Association, Diabetes Care, Archives of Diseases in Childhood, European Journal of Clinical Nutrition, Public Health Nutrition, Nature Reviews, and Social Science and Medicine. Thirteen reports and one book have been submitted to the World Health Organisation in Geneva, the Indian Council of Medical Research, and other funding institutions.

The findings of the study have been incorporated into the development of both national and international policy. Based on thorough investigations carried out by the agency, the World Health agency in Geneva made a judgement at the worldwide level regarding neonatal Vitamin A supplementation, home-based care to prevent neonatal death, and short-term antibiotic therapy for otitis media. Additionally, speeches and national awards have been given in recognition of the scientific work.

The organisation has also co-hosted evidence-based symposia in order to create Indian Academy of Pediatrics guidelines for diarrhea and severe malnutrition. Due to their publishing, these can now be included into standard pediatric practice.

FACILITIES AVAILABLE

Operation Theatres

Three contemporary operating rooms with anesthesia machines are available at Sitaram Bhartia. An international standard, cold operating lighting, a state-of-the-art air filtration system, central gases and suction, image intensifier, electrosurgical units, and laparoscopic and endoscopic equipment. The anesthesiologists, technicians, and nurses working in the theatres are a skilled group, and they adhere to strict infection control procedures. These make sure that patients are safe both during and after operation to very high standards.

Intensive Care Unit (ICU)

For the ongoing, intensive monitoring of critically ill patients, the intensive care unit is equipped with modern technology.

Emergency

Emergency services are offered around-the-clock. All accident patients are promptly attended to by resident physicians from all main disciplines, and children who require immediate care are seen by a trained pediatrician.

Laboratory

The 24-hour, NABL-accredited laboratory performs tests in serology, microbiology, clinical pathology, immunology, biochemistry, and hematology. It adheres to internationally recognized best practices and takes part in an external quality proficiency programmed.

Radiology

X-rays, ultrasonography, mammography, and bone densitometry (DEXA Scan) are all included in the spectrum of radiology services. In order to produce high-quality photographs, investigations are conducted utilizing equipment with superior specifications. They have a computed tomography (CT) facility on-site. For the purpose of offering effective magnetic resonance imaging (MRI) services, there is a close relationship with partner organizations.

Cardiopulmonary Investigations

Electrocardiography (ECG), treadmill testing (MT), echocardiography, and pulmonary function testing (PFT) are the cardiopulmonary studies offered.

Infertility and IF Services

The whole spectrum of medical and surgical (minimally invasive) facilities are available at Sitaram Bhartia for the diagnosis and care of patients with infertility. However, 8% of these couples will not be able to conceive using standard infertility therapies and would need to use specialized artificial reproductive technologies. In August 2010, Sitaram Bhartia successfully launched an IF unit to satisfy this need.

Hospital offers an IF therapy that complies with the highest international standards and is honest and transparent.

Birthing Complex and Neonatal Intensive Care Unit (NICU)

The birth of a child is a monumental time in a family's life, and the Institute's birthing complex offers an aesthetically calming setting. The neonatal intensive care unit, which contains cutting-edge medical technology, completes it by providing treatment for infants who are premature or in other critical conditions.

Inpatient Rooms

For inpatients and their attendants, each room offers a pleasant setting. The patient experience is improved by competent nursing, ongoing resident doctor coverage, effective housekeeping services, and diet services.

Special Care Centers and Programs

For diabetes, pregnancy and delivery, weight management, and male sexual health, the Institute offers specialized programs. In each of these programs, a group of medical professionals adheres to a predetermined routine to thoroughly attend to each patient's needs.

Diabetes Center

The Institute houses a specialty diabetes center that has generated outcomes of the highest grade and earned a reputation for being unmatched in the country. The clinic provides treatment that places a high priority on thorough investigations, ongoing follow-up, distinct metabolic control targets, family involvement, and extensive teaching for controlling diabetes on one's own.

Birthing Program

The Birthing Programme was established on the principle that childbirth is not a medical or surgical procedure to be performed on a patient but rather a typical physiological and psychological milestone in the development of a woman and her family. The Birthing Programme encourages natural delivery in accordance with WHO principles in order to "achieve a healthy mother and child with the least possible level

of intervention that is compatible with safety." A unique aspect of the programme is a series of antenatal workshops that let women and their partners benefit from other pregnant couples' knowledge and experience.

Weight Management Program

A holistic strategy that places a strong emphasis on lifestyle modification has been used in the design of the weight management programme to promote general health, fitness, and wellbeing. Using a team that includes a doctor, dietitian, and personal exercise advisor, the Programme is medically monitored. The Program's support for overcoming the mental and social barriers as well as the harmful behaviors that frequently impede weight loss is one of its special features.

Preventive Health Checkups

The Institute provides a variety of adult, teen, and child-specific packages to address the demand for timely health checkups for people of all age groups. These checkups offer a full evaluation of one's health, address specific problems, and offer pro-active guidance on a range of health-related topics. The patient's or client's best interests are considered during every activity.

Patient feedback is considered a crucial contribution for the ongoing enhancement of organizational performance. The equipment is covered by an annual maintenance contract, either in-house or outsourced to the equipment supplier, as a sign of its dedication to accuracy and dependability. They undergo routine calibration to guarantee that the machinery is operating under ideal conditions and will produce results of a higher caliber.

QUALITY HEALTHCARE AT SITARAM BHARTIA INSTITUTE OF SCIENCE AND RESEARCH

QUALITY OBJECTIVES

- Meet the criteria set by international standards for the process and result indicators that are used to evaluate the quality of healthcare operations.
- Succeed in achieving high levels of physician and patient satisfaction.
- Support the organization's guiding principles of respect for individuals, institution-building, ongoing development, and sincerity and integrity.
- Adhere to established standards for the safety of the facility and the patients by performing recurring preventive maintenance and calibrating medical equipment in accordance with specified standardized procedures.
- A quality system familiarity level relevant to the individual's level of responsibility should be ensured for all newly hired staff.

QUALITY POLICY

- The Institute pledges to follow ethical standards, provide high-quality care, and adhere to all legal and regulatory requirements in addition to the quality management system.
- Resolves to uphold and continually seek to improve the standard of all Institute services as outlined by NABH.
- Will seek out persons with technical proficiency in a range of clinical fields and equip them with the resources needed to complete their work in a timely and accurate manner.
- Assess data for ongoing improvement and any other needs to ensure that the system is operating in accordance with the necessary standards.
- Provide cutting-edge equipment with yearly maintenance agreements and calibration services for all equipment. Respect all statutory and legal standards as specified by federal and state regulatory organizations.

ABSTRACT

Assess the Level of Fire Safety Awareness and Preparedness at a Multi-Specialty Hospital in New Delhi

Background - One of the greatest safety risks is fire, which affects not only industrial, residential and commercial structures but also hospital buildings. Locally and internationally, reports of fire outbreaks in healthcare facilities have been made in recent years. Fire continues to be the leading cause of fatalities despite technological advancements in fire safety. But knowledge, preparedness, and practices by hospitals about fire safety prevention can save many lives. The objective of this study is to assess the level of preparedness and awareness regarding fire safety in a multi-specialty hospital in New Delhi. **Method -** Data for the study was collected in the form of a survey questionnaire that was pre-designed in order to ascertain the level of fire safety awareness among healthcare personnel. In addition, a fake fire safety drill will be held in the hospital to evaluate staff training and emergency preparation. The data will be analyzed in Excel using compliance percentages. **Result-** A thorough understanding of the hospital's fire safety policies and plan was shown by the 136 participants who achieved scores of more than 80% on the fire safety evaluation (about 70%). While 59 (30% roughly) were rated below 80%, highlighting a need for improvement and recruiting more staff members. It was determined through the analysis of the fire safety drill that 86% of the areas met compliance, while 14% of the areas did not and therefore require additional improvement. **Conclusion -** It was reported that the majority of hospital employees had received impressive fire safety education and awareness training. However, given the potential severity of a fire disaster, which might result in the loss of life and property, it is essential to create a strong structure and empower workers to the

point where they are capable of managing the crisis and responding effectively without becoming flustered.

Key Words - Fire Safety, Healthcare worker, Knowledge, Preparedness, Awareness

SECTION 2:

DISSERTATION

CHAPTER 1

BACKGROUND

Human species rely on fire as a valuable resource, and they have done so for thousands of years. Many wonderful life improvements, including cooking, heating and the management of landscapes, have resulted from the ability to effectively control and manipulate fire. When fire isn't carefully controlled, it can be very dangerous. If the conditions are right, flames and smoke can spread quickly and cause significant damage to people, property, and the environment. Therefore, fire safety is relevant here. Fire safety is a group of practices whose goal is to limit the amount of harm that fire can cause. Fire safety measures deal with preventing the start of an uncontrolled fire as well as limiting its spread and effects.

Heat, fuel, and oxygen must interact in order for a fire to ignite. Similar to the epidemiological triad for diseases, one of the three components can be removed to put out a fire. In our ecosystem, fire is also a normal process, but it can also cause fatal mishaps and widespread destruction. India tragically reported 1.6 million fire accidents in 2021, with 27,027 unintentional fatalities. Fire, which affects not only industrial, residential, and commercial structures but also hospital buildings, is therefore the biggest safety risk.

In recent years, reports of fire outbreaks in medical facilities have been made in news both locally and internationally. These fire incidents have put human health in danger and led to horrifying losses in terms of both life and property. For instance, in 2011, a fire broke out at the AMRI Hospital in Kolkata, India, killing 93 people, including hospital patients and people in the intensive care unit (Indian express, October 19, 2016). It was believed that a short circuit in the basement was what ignited the fire, which claimed 89 lives. The hospital basement's unauthorized storage of flammable materials contributed to the fire's spread. According to reports, human error and negligence by the hospital staff led to the fire. Also, about 38 people perished in a fire accident at a psychiatric hospital outside of Moscow in 2013. (BBC News, October 11, 2013). The main brick building, which had wooden beams, was initially damaged by fire that originated in a wooden annex, according to the minister of emergencies. At least 29 people were burned alive while the patients were under sedatives, and the majority did not survive. Additionally, At New Life Multispecialty Hospital, a private hospital in the Madhya Pradesh region of India's Jabalpur district, a large fire broke out on August 1 2022, which killed eight people and three were critically injured. The hospital's intensive care unit (ICU) caught fire. It is thought that the fire started on the hospital's ground floor around 4.30 p.m. and spread to the entire three-story building due to a short circuit that may have occurred during the

switchover of electricity from the generator after a power outage. After the fire incident was investigated, it was discovered that the hospital's fire No Objection Certificate (NOC) had expired.

Hospitals are not exempt from fire incidents because they contain flammable materials like medical gases, chemical agents, and equipment used to treat patients. In a manner similar to this, improper handling of waste generated by hospitals could ignite a fire. A news publication's compilation of media reports stated that in just 20 months, 122 people died in 29 significant hospital fires across India. (From August 2020 to April 2022). Some of the primary causes of these fire outbreaks are human factors, such as negligence, lack of fire safety preparedness and safety awareness. For instance, during a random audit report claim and Government statistics show that Delhi (NCT) has 1,478 hospitals, nursing homes, maternity homes, and health sub-centers that are registered. In a letter to the director general of health services, the Delhi Fire Service stated that only 103 of these institutions have a fire department clearance certificate. (DGHS). These fire incidents and report demonstrate how unprepared many hospitals are for preventing and controlling fire outbreaks.

Regulations for fire safety and prevention are more stringent for hospitals. Undoubtedly, a fire emergency in a healthcare facility is extremely challenging and calls for special consideration and a specialized response. Patients are especially vulnerable in a fire outbreak due to specific difficulties they face. Children, the elderly, patients in post-operative or intensive care, people with chronic illnesses, and people under the influence of different drugs are all present in the hospital. The hospital's various departments and units also use expensive, sophisticated equipment and tools for diagnosis and treatment. In order to protect the lives of patients, staff, and visitors, as well as the properties, and to ensure a secure environment for the delivery of healthcare services, this emphasizes the significance of having adequate fire safety measures in hospitals.

Given the potentially catastrophic consequences, the hospital administration has a big responsibility for fire safety and setting up the necessary safeguards. Any healthcare facility that houses patients is required to have fire safety plan and amenities like fire hydrant systems, emergency exits, various types of fire extinguishers, and a secure gathering area. Most importantly, though, is that staff members must be trained in fire safety procedures. It has been noted that inadequate fire drill training and a lack of fire-related knowledge contribute to firefighting process delays. Regular drills and adequate

fire safety training could probably improve the emergency response. Additionally, factors like the equipment and their timely maintenance are essential to the efficient use of any type of fire apparatus. With the aforementioned factors in mind, the goal of this study is to determine the level of awareness and knowledge among healthcare professionals as well as the preparedness of a multispecialty hospital for fire safety so that improvement can be made where noncompliance is identified.

CHAPTER 2

LITERATURE REVIEW

1. A study was conducted by researchers of the Department of Public Health Dentistry at the Manipal College of Dental Sciences in Manipal to evaluate the knowledge and attitudes of fire safety among undergraduate and postgraduate dental students and staff there and to determine whether there is any correlation between educational attainment and fire safety knowledge. Data was collected using questionnaire. The results showed that while nearly half of the participants had a positive attitude towards fire safety, few participants knew how to apply fire control measures in the event of a fire accident.

2. A study was undertaken at the Federal Medical Centre in Umuahia, Nigeria, to assess worker awareness of fire safety (FS) and preparedness procedures. A suitable non-probability sample strategy was used to recruit 310 personnel from various units and departments across 27 buildings for the cross-sectional study. Analysis was done using data which was collected using a self-administered survey and a walk-through observational checklist. SPSS was used for data analysis. According to the results, administrative staff made up the biggest percentage of participants (93%), followed by physicians and nurses (80.2%) and 60.3%, respectively. 109 (35.2%) employees knew how to use a fire extinguisher, and 139 (41.9%) employees were aware of where the fire extinguishers were at their places of employment. Only 28 (9.0%) employees had attended FS training. The number(s) to call in the event of a fire were known by 26 people (8.4%). Only 107 (34.5%) of them have a solid understanding of fire safety.

3. In a tertiary care teaching hospital in the Marathwada region of Maharashtra, India, a study was to evaluate the knowledge and practises on fire safety among healthcare professionals. From January to April 2016, 202 medical professionals from a Marathwada region teaching hospital in Maharashtra participated in the study. Z-test, percentages, and proportional analyses were used to assess the data. Out of the sample , the results showed that 61.39% of them were female, 43.56% were between the ages of 18 and 27, 28.21% were GNMs, 34.16% were staff nurses, and 85.15% had no more than one year of work experience. 81.68% of respondents who were asked if DCP fire extinguishers could be used for A, B, or C classes of fire correctly answered the question, while 96.4% had the proper understanding of what to do in the event of a fire mishap.

CHAPTER 3

OBJECTIVE OF STUDY

The aim of the study is to:

1. Access the Fire Safety Awareness amongst healthcare workers of the hospital
2. Access the Fire Safety Preparedness of the hospital.

CHAPTER 4

METHOLOGY

A cross sectional study was conducted amongst 195 healthcare workers of Sitaram Bhartia Institute of Science and Research, Delhi, India, during the period of February 2023 to April 2023.

The hospital is a 70-bed facility that offers a wide range of medical specialties, diagnostic, conservative and comprehensive services along with training and research.

Convenience sampling was used to select the 195 health care professionals who made up the entire study population.

Primary quantitative and qualitative research methods were both used in this study.

To gauge participants' knowledge for fire safety, a pre designed questionnaire was used to gather quantitative data. A surprise mock drill and safety audit were conducted to evaluate the staff readiness and the safety precautions taken to mitigate the risk of a fire outbreak.

A. Knowledge

To assess the Fire Safety knowledge of the healthcare workers a survey questionnaire was devised, which consisted of 14 questions (Annexure 1). Prior to enrollment, all participants gave their informed consent and had the option of participating in the study or not (Annexure 2). Each participant also received a thorough explanation of the study's objective. The survey was scored according to the "All or null" concept, which awarded a score of 1 for correct responses and a score of zero for incorrect responses. Knowledge scores of 11 (below 80%) and >11 (above 80%) were regarded as "Below Average" and "Above Average," respectively. Data from each question was analyzed to find areas that may benefit from improvement. The five questions out of 14 that had the most wrong answers were identified.

In order to assess the hospital's preparedness for fire safety, this study examines two aspects, namely the infrastructure and the staff's skills.

B. Training

This study examines staff training and skills in emergency situations to gauge how well the hospital is prepared for fire safety. A simulated fire safety mock drill will be carried out in the hospital in front of two members of the Disaster committee (Code Red) to evaluate staff training and emergency preparedness. The primary goal of the mock fire drill is to assess how effectively the response team is set up in the event of a fire. Along with this, the building's various systems will all have their functionality tested. The exercise aids in finding new solutions to the system's shortcomings by highlighting them. In order to record the observations, a 23-step checklist with a response time and assessment record was used to assess compliance (Annexure 3).

It is primary data that has been gathered throughout this study. The data was managed and tracked using Excel, and the outcomes were statistically examined using percentage and proportion compliance.

The institution granted permission to conduct the study among hospital staff after carefully reviewing the application. Enrollment numbers were used to identify participants in the data collection system rather than names in order to maintain their anonymity. All participants provided informed consent prior to enrollment, and they chose whether or not to take part in the study. Additionally, the goals of the study were thoroughly explained to each participant. There were no known risks associated with the study, and participants were free to discontinue at any time without consequences.

CHAPTER 5

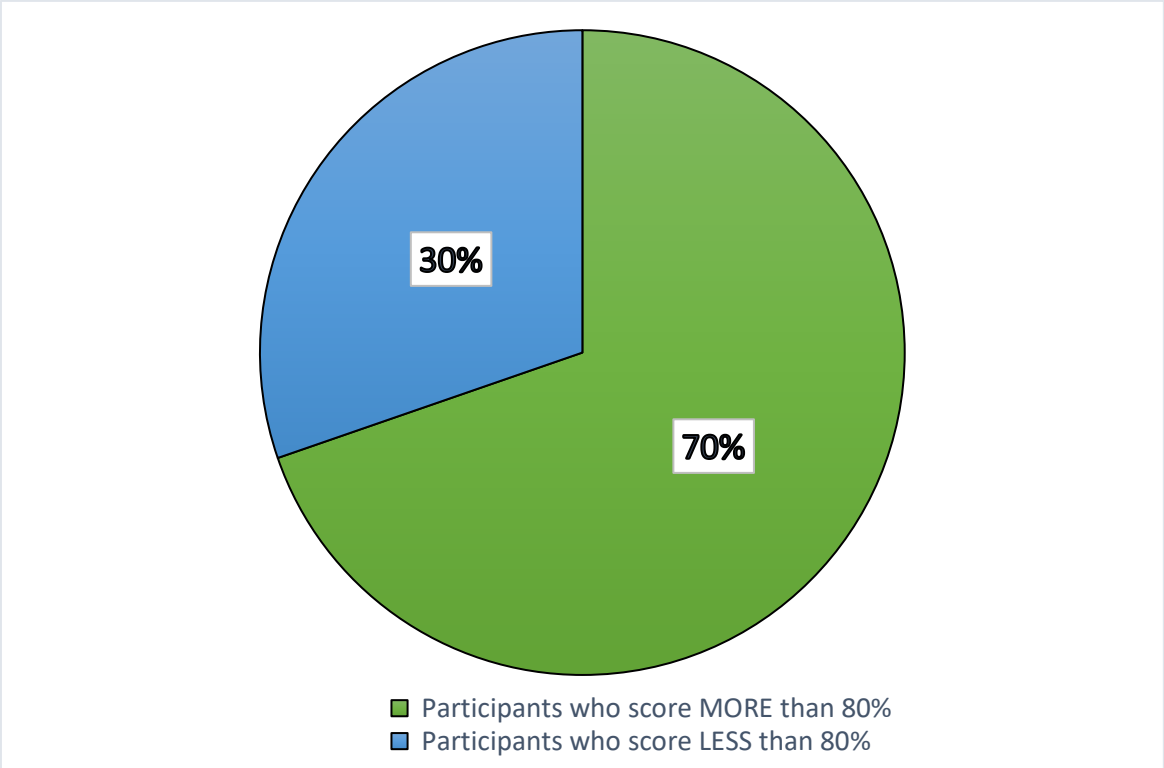
RESULTS

The fire awareness assessment involved 195 healthcare professionals, of which 79 (42%) were clinical staff (doctors, nurses and other clinical staff) and 116 (58%) were non-clinical staff (administrative, security, housekeeping and maintenance staff). Each participant who took the assessment had gone through fire safety induction training and had worked at the hospital for more than three months.

Table 1: Results of the Fire Awareness Assessment

Participants who score MORE than 80%	136
Participants who score LESS than 80%	59

Figure 1: Percentage of participants scoring



The respondents' knowledge score on fire safety is displayed in Table 1 and Figure 1. In the fire safety assessment, 136 people (approx. 70%) received scores of more than 80%, demonstrating a thorough comprehension of the hospital's fire safety policies and plan. While 59 (30% approximately) received ratings below 80%, demonstrating the area for further improvement and training reinforcements.

Table 2: Responses given by participants to each question in the fire awareness assessment

Question No.	Questions	Correct Answer	Incorrect Answer	% of Non-Compliance
Q1	What is the name of hospital assembly area?	78	107	40
Q2	Code Red is which disaster?	2	193	1
Q3	What number will you dial in case of code Red? If extension is not working for any reason what will you do?	37	158	19
Q4	What information should first observer give after dialling disaster number?	18	177	9
Q5	In case of mock drill, the staff mentions “Its’s a mock drill”, while making the announcement?	4	191	2
Q6	While passing through wards, you hear noises for “fire”, and see fumes coming from the area. As a first responder arrange the following steps sequentially from	54	141	28

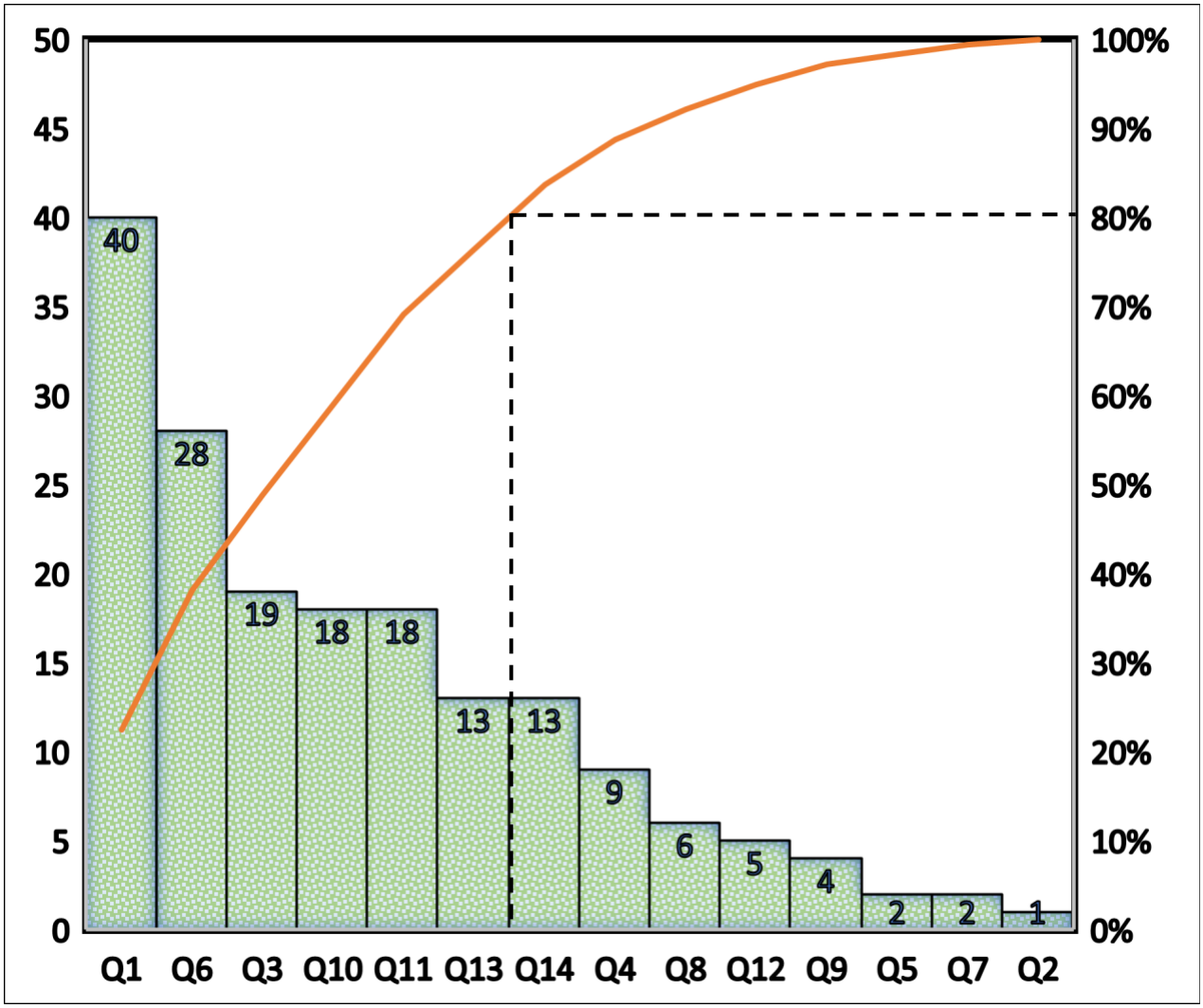
	immediate to last action.			
Q7	As a hospital staff, when you observe a fire at any location you should _____?	4	191	2
Q8	When an Alarm Sounds, What Should you not do?	12	183	6
Q9	Where is the hospital fire assembly area in our hospital, in case of Code Red?	7	188	4
Q10	The injured or rescued patients from fire site are shifted to _____ for medical treatment?	36	159	18
Q11	The staff (Security, Housekeeping, Maintenance, Nursing, First Responder) has Knowledge about their respective role? Pls specify the role in short.	36	159	18
Q12	To operate the fire extinguisher, the acronym P.A.S.S. is often used to help us remember to	9	143	5

Q13	For electric fire which type of fire extinguisher is used?	26	170	13
Q14	The most appropriate technique to exit a building when there is heavy smoke, where you can't see ahead is to :	26	169	13

Table 2 summarizes responses from healthcare professionals regarding their knowledge of fire safety and shows that:

- 99% of respondents were aware that code red indicates fire disaster.
- 98% were aware of their role as first responders.
- 98% of responders were aware to mention "it's a mock drill" during a fire mock drill session.
- 96% of the staff members were aware of the exact location of fire assembly area
- 95% of staff is aware of the PASS technique for operating fire extinguishers.
- 81% of staff was aware of the disaster number which is to be dialled on extension or from the phone.
- About 72% of people were aware of the events to be followed in case of fire emergency.
- 60% of participants were aware of the fire assembly area

Figure 2: Pareto Analysis of the Non-compliances in the fire awareness assessment



According to the Pareto Analysis, six questions—Q1, Q6, Q3, Q10, Q11, and Q13—were responsible for 80% of the non-compliance in the fire awareness assessment and are thus identified as a potential area for improvement.

The training and preparedness of the staff was meticulously assessed step-by-step conducting a mock drill and the results were captured using a check list as a tool.

The mock drill assessment record is shown in Table 3, and the percentages of compliance and non-compliance are shown in Figure 3.

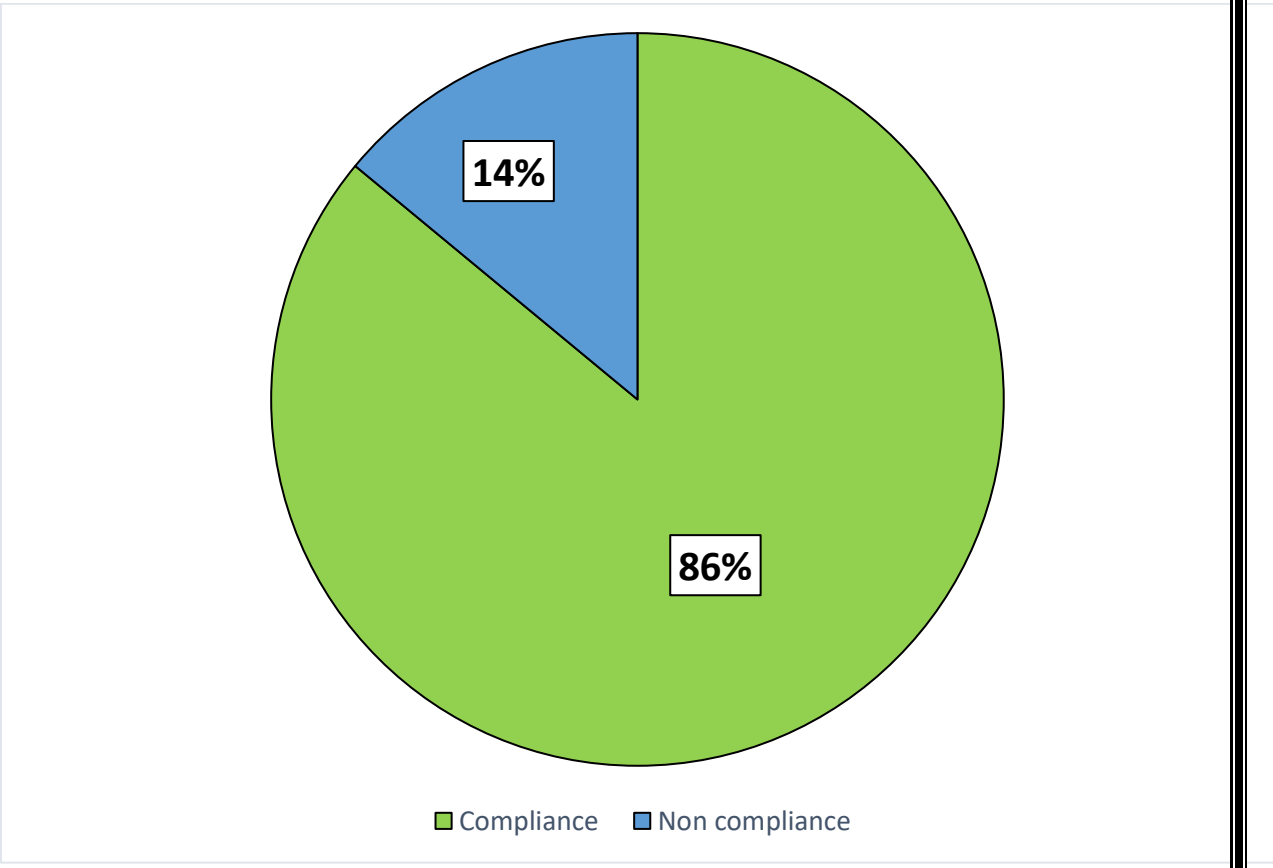
Table 3: Mock Drill Assessment Record

S.No.	Steps	Put tick □compliance or X for non-compliance
0	**Drill initiator' will identify the first responder at the site and will redirect him/her where the mock drill needs to be conducted**	
1	Fire on site (initiation of mock)	□
2	First observer informs Tel exchange '6006' about the fire at site **(time to be noted)**	X
3	Staff at site, knows about the location of nearest fire extinguisher	□
4	Staff at site knows how to operate fire extinguisher	□
5	Other staff in the vicinity, runs out towards ICC	□
6	Tel exchange declares code red on the PA system **(time to be noted)**	□
7	Informs DMC list next, on declaration of Code Red **(time to be noted)**	□
8	Commander reports to ICC (if designated commander not present, then someone else be handed over the responsibility) **(time to be noted)**	□
9	IPD staff provide admission list to ICC Commander (if applicable)	□
10	ICC Commander make rescue teams as per requirement	□

11	Hospital staff from major areas reports to ICC/Emergency assembly area (especially nurses, doctors, paramedics)	
12	Casualty/injured are (if any) transferred at emergency assembly area. Casualty attended by CMO/NS/Paramedical staff	
13	Security Supervisor arrives at fire site and looks for the damage **(time to be noted)**	
14	Maintenance Supervisor switch off the AC and Power **(time to be noted)**	
15	Lift movement stopped for a while and same have been informed to the people in vicinity (if applicable)	NA
16	Security team arrives at firefighting site (**time to be noted**)	
17	Head- Security arrives at firefighting site (**time to be noted**)	
18	HK team arrives at site, for clearing the area (**time to be noted**)	
19	First evacuation team arrives for medical rescue (**time to be noted**)	
20	All the teams have Knowledge about their respective role (security & HK team)	

21	Coordination of Commander with Head- Security, for status and rescue operation	□
22	Declaration of Code Green, after fire is under control and patients are rescued from the area	X
23	Code Green announced for clearance of mock drill **(time to be noted)**	□

Figure 3 - Percentage of Compliance and Non-Compliance in the Mock Drill Assessment



The responses of the healthcare personnel in the event of a fire emergency are summarized in Table 3 and Figure 3. From the analysis we infer that out of 23 steps observed during mock drill assessment, 21 areas(86%) were meeting compliance; whereas 2 areas (14%) were not meeting compliance, and hence needs further improvement.

CHAPTER 6

DISCUSSION

In this study, it was discovered that 136 individuals (approximately 70%) received scores of more than 80% on the fire awareness assessment, reflecting a thorough understanding of the hospital's fire safety policies and plan. 59 participants (about 30%) received evaluations below 80%, Suggesting scope of improvement in these areas where staff can be more sensitized on. Also, it was identified that 98% of respondents were versed in their role as first responders and were knowledgeable to mention "it's a mock drill", in case of mock drill while making the announcement, about 99% of respondents knew that "Code red" is known for fire disaster. 95% of staff is aware of the PASS technique for operating fire extinguishers. Therefore, the majority of staff members understood the significance of a code red and their responsibility as first responders. They also had training on how to use fire extinguishers and other firefighting tools in an emergency.

The Pareto analysis carved six areas of concern and were labeled as the potential areas for improvement, where the majority of respondents provided incorrect answers. The data disclosed that 40% of the respondents were unsure of full form of the acronym designated for the fire assembly area, 28% were unsure of the order of events they will follow in case of a fire emergency, 19% were not aware of the emergency number that must be called in case of a fire emergency, 18% were unaware of the location where injured or rescued patients from fire sites are transferred for medical treatment, 18% of respondents were unaware were unaware of the staff role in a fire emergency and 13% were unaware of the type of fire extinguisher to use in the event of an electric fire.

The training of the healthcare workers in this study was also evaluated through a mock drill. The assessment of the mock drill found few lacunae. It was noted that the first responder needed to be reminded to tell the phone exchange that it was a "mock drill" because they were not aware of the disaster number (6006) during the mock drill. After receiving the call from the first observer, the telephone exchange staff announced "code red." The security, housekeeping, and maintenance staff rushed to the fire site with a fire extinguisher and other necessary equipment after hearing the Code Red announcement over the PA system. Dummy patients were placed in the hospital to examine the effectiveness and efficiency of the fire safety rescue team. It was discovered

during this assessment that the status and rescue operation were poorly coordinated between the head of security and the chairperson of the ICC.

To evaluate the performance of the fire safety rescue team, dummy patients were placed at fire site to test the evacuation process. It was observed that the status and rescue operation were insufficiently coordinated between the head of security and the chairperson of the ICC during this assessment. Additionally, the security personnel dialed the incorrect disaster number just as it was time to declare code green (all clear).

This demonstrates the necessity of regular training for hospital staff, particularly in critical areas where they care for the most vulnerable and dependent patients in the most critical of conditions. Additionally, frequent mock- drills should be conducted to cover all aspects of the hospital's fire safety plan.

CHAPTER 7

RECOMMENDATION

1. The Head of the Department (HOD) may periodically hold trainings at the departmental level. To do this, department-based training (both critical and non-critical areas) should reinforce role-specific sessions in which specific roles are assigned to specific staff members. For instance, if a fire breaks out in the operation room (OT) during surgery, the staff should be aware of their respective roles. Also, the HOD should include code red trainings in their departmental training calendar and must provide the training division a record of the training calendar, attendance, and evaluations.
2. The fire safety training modules could be revised periodically and ought to adhere to the hospital's fire safety plan and fire safety SOP.
3. The hospital can regularly hold mock drills to evaluate the staff's level of training, and more staff members should be encouraged to take part, including doctors who are also a part of the front-line personnel.
4. To gauge the staff's knowledge of fire safety, fire safety assessments be performed every six months. In order to track development and comprehension. It is important to identify the gaps and include them in the training module's improvement scope.
5. At the time of induction new employee could be assessed for fire safety and according to that the training needs can be catered

CHAPTER 8

CONCLUSION

A commendable level of fire safety awareness and training was present among the majority of hospital staff. However, taking into account the severity of fire disaster which may lead to loss of life and property, it is imperative to build a robust system and empower staff to a level that they are able to handle the situation and respond efficiently without panicking.

CHAPTER 9

LIMITATION

1. The findings and recommendations of the study cannot be generalized because it was only conducted at one hospital in New Delhi.

2. The sample used in the fire assessment and mock fire drill was dependent on its accessibility. Therefore, it's possible that a 100% sample wasn't present when the observations were taken.

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Annexure 1

Department: Name: Max. Score:

Date: Tenure Period: Designation: Score achieved:

Fire Safety Awareness Survey

Q1. What is the full form of ICC?

Q2. Code Red is which disaster?

a. External disaster
b. Child abduction/Person missing
c. Fire Disaster
d. Cardio Pulmonary Resuscitation

Q3. What number will you dial in case of code Red? If extension is not working for any reason what will you do?

Q4. What informatio should first observer give after dialling disaster number?

e. Code Fire at location X
f. Code Red at location X
g. Code Fire
h. Code Red

Q5. In case of mock drill, the staff mentio s "Its's a mock drill", while making the announcement?

a. Yes
b. No

Q6. While passing through wards, you hear noises for "fire fire", and see fumes coming from the area. As a first responder arrange the following steps sequentially from immediate to last action.

a. Exit from the area.
b. Reach ICC area
c. Call exchange (6006) and declare Code Red with location
d. Take the nearest fire extinguisher and try to extinguish fire

Q7. As a hospital staff, when you observe a fire at any locatio you should _____?

a. Exit from the area, without doing anything
b. Immediately inform about Code Red, alert others, know about fire extinguisher in your department and important exits in your department
c. Call fire station

Q8. When an Alarm Sounds, What Should you not do?

a. Use stairs and reach assembly area (ICC area)
b. Use elevator and reach assembly area (ICC area)
c. Use ramp and reach the assemble area (ICC area)

Department: Name: Max. Score:

Date: Tenure Period: Designation: Score achieved:

Q9. Where is the ICC in our hospital, in case of Code Red?

a. Auditorium
b. Outside lawn area
c. In front of emergency
d. Front office

Q10. The injured or rescued patients from fire site are shifted to _____ for medical treatment?

a. Wards
b. Casualty
c. Emergency
d. Outside lawn area

Q11. The staff (Security, Housekeeping, Maintenance, Nursing, First Responder) has Knowledge about their respective role? Pls specifyyour role in short.

Q12. To operate the fire extin uisher, the acronym P.A.S.S. is often used to help us remember to _____.

a. Pass by the fire, activate the sprinkler system, seal fire area from oxygen, and stop unauthorized entry.
b. Pull the alarm, alert the response team, shut down the power sources, and secure the area.
c. Pass by the fire, activate the fire alarm, select the proper extinguisher, and shoot at the base of the fire.
d. Pull the pin, aim at the base of the fire, squeeze the trigger to release product and sweep the nozzle from side to side.

Q13. For electric fige which type of fire extin uisher is used?

a) Type A
b) Type B
c) Type C
d) Type D

Q 14. The most appropriate technique to exit a building when there is heavy smoke, where you can't see ahead is to :

a) Run towards the fire exist
b) Crawl on your hands and knees
c) Roll down on the floor
d) Be seated and wait for help

Annexure 2

SURVEY CONSENT FORM

My name is Dr Ridhima Kataria. I am a student at IIHMR Delhi, and currently interning in the Quality Department of Sitaram Bhartia Institute of Science and Research.

I am conducting a research study and requesting participate in my research survey. **The purpose of my study is to Assess the Fire Safety Awareness in the Hospital.** The study is carried out under the direct supervision of the hospital's Quality Team.

Participation in this survey is voluntary. There is no minimum age to participate in this survey.

All your responses will be kept confidential within reasonable limits. Only those directly involved with this project will have access to the data. I will take all reasonable steps to protect your identity.

If you have any questions about the study, please contact me or anyone from the Quality Team of the hospital.

Dr Ridhima Kataria
dr.ridhimakataria@gmail.com

Thank you for taking the time to assist me with this research.

Consent
I, _____ (participant's name), understand that I am being asked to participate in a survey questionnaire activity. I **choose/not choose** to participate in the study.

Signature

Annexure 3

Mock drill on: Code Red **Actual Start Time:** 3:30 pm	**Date:** 16.03.2023 **Location:** Medical Records

S. No.	Steps	Standard/ Timeline	Put tick □or X for compliance	Note time if applicable
0	**Drill initiator' will identify the first responder at the site and will redirect him/her where the mock drill needs to be conducted**			
1	Fire on site initiation of mock)		□	
2	First observer informs Tel exchange '6006' about the fire at site **(time to be noted)**		X	3:34 PM

3	Staff at site, knows about the location of nearest fire extinguisher		□	
4	Staff at site knows how to operate fire extinguisher		□	
5	Other staff in the vicinity, runs out towards ICC		□	
6	Tel exchange declares code red on the PA system **(time to be noted)**		□	3:35 PM
7	Informs DMC list next, on declaration of Code Red **(time to be noted)**		□	
8	Commander reports to ICC (if designated commander	within 3-5 mins of declarati	□	

	not present, then someone else be handed over the responsibility) **(time to be noted)**	on of Code Red		
9	IPD staff provide admission list to ICC Commander (if applicable)		□	
10	ICC Commander make rescue teams as per requirement		□	
11	Hospital staff from major areas reports to ICC/Emergency assembly area (especially nurses, doctors, paramedics)		□	
12	Casualty/injured are (if any) transferred at		□	

	emergency assembly area. Casualty attended by CMO/NS/Paramedical staff			
13	Security Supervisor arrives at fire site and looks for the damage **(time to be noted)**		□	
14	Maintenance Supervisor switch off the AC and Power **(time to be noted)**		□	
15	Lift movement stopped for a while and same have been informed to the people in vicinity (if applicable)		NA	
16	Security team arrives at firefighting site	within 3-5 mins of declarati	□	3:36 PM

	(**time to be noted**)	on of Code Red		
17	Head-Security arrives at firefighting site (**time to be noted**)		□	
18	HK team arrives at site, for clearing the area (**time to be noted**)	within 3-5mins of declaration of Code Red	□	
19	First evacuation team arrives for medical rescue (**time to be noted**)	within 10 mins of declaration of Code Red	□	
20	All the teams have Knowledge about their respective role (security & HK team)		□	

21	Coordination of Commander with Head-Security, for status and rescue operation		□	
22	Declaration of Code Green, after fire is under control and patients are rescued from the area **(time to be noted)**		X	3:48 PM
23	Code Green announced for clearance of mock drill **(time to be noted)**		□	3:50 PM

Ridhima Kataria report

ORIGINALITY REPORT

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