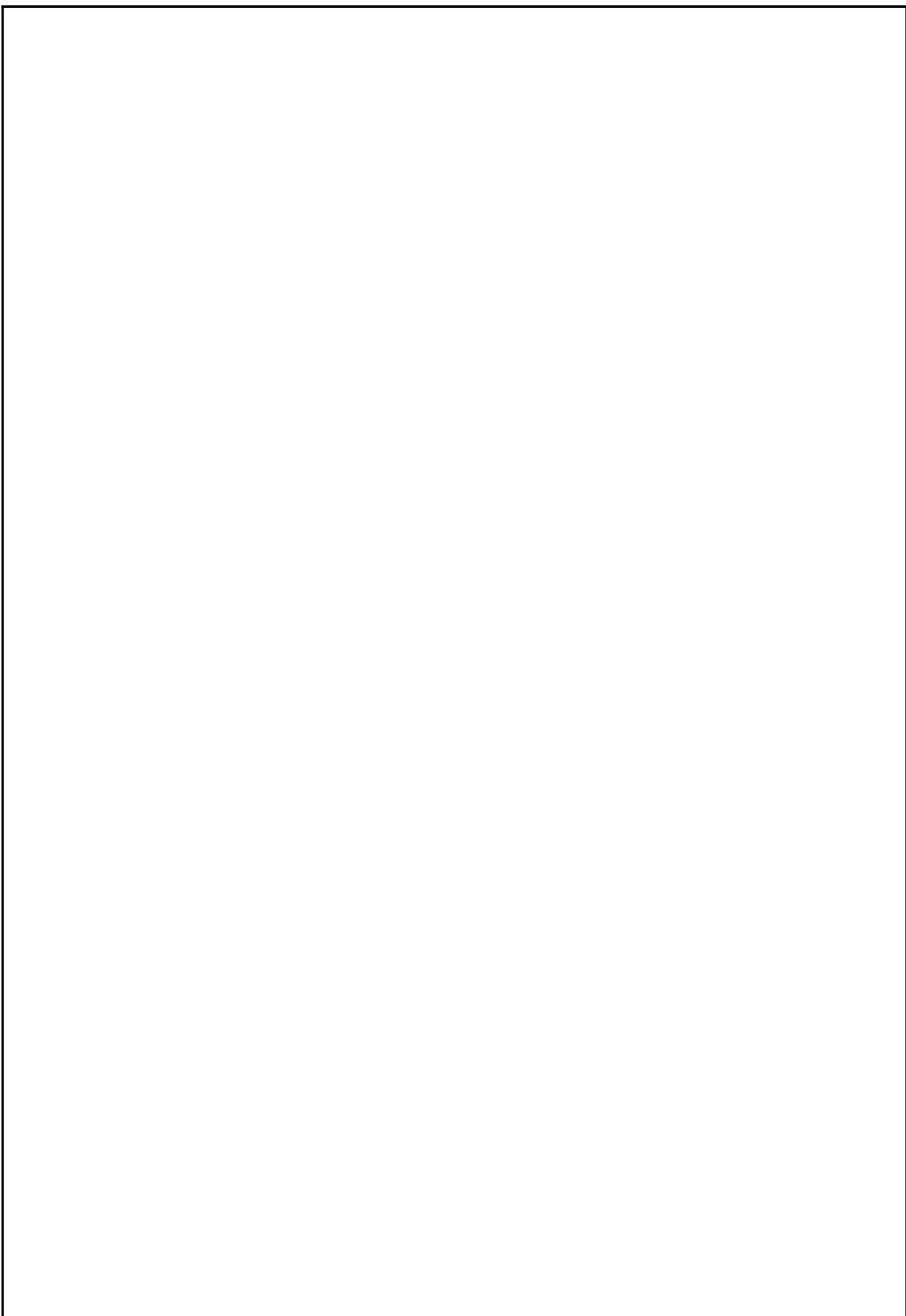


FIRE SAFETY IN HEALTHCARE FACILITIES



HIMSR AND HAHC HOSPITAL



INTRODUCTION

Why Fire Safety is Crucial in Hospitals?

Hospital fire safety is a critical component of overall workplace safety in healthcare settings. Hospitals are places of healing, but they can also be at risk of fire hazards due to electrical equipment, oxygen tanks, and other flammable materials. As a patient bystander or member of the general public, your awareness and actions can save lives during a fire emergency. This guide will help you understand your role, what to do, and what to avoid in a fire situation.

Why This Matters: A fire in a hospital can lead to chaos, injury, or worse if people are unprepared. For example, in 2019, a hospital fire in India caused by an electrical short circuit led to the evacuation of over 50 patients, many of whom relied on bystanders for assistance. Your awareness and calm actions can prevent such situations from becoming catastrophic.

Key Objective: **By the end of this guide, you'll understand how to stay safe, assist others, and follow proper protocols during a hospital fire emergency.**

Understanding Fire Risks in Hospitals

Hospitals have unique fire risks, including:

- **Oxygen Tanks:** Can accelerate fires.
- **Electrical Equipment:** Overloaded circuits or faulty devices can spark fires.
- **Flammable Materials:** Bedding, alcohol-based sanitizers, and chemicals.
- **Crowded Spaces:** Limited evacuation routes for patients, staff, and visitors.
- **Human Error:** Smoking in restricted areas, improper storage of flammable materials.

Your Role: Be vigilant. Report any unusual smells (like burning), sparks, or unsafe practices (e.g., smoking near oxygen tanks) to hospital staff immediately.

Common Causes of Hospital Fires

- Multitude of flammable materials
- Smoke spreading through chutes and vents
- Lack of natural ventilation and operable windows
- Electrical overload
- Lack of fire-proofing of electrical and electronic installations
- Basements used as storage areas
- Lack of full-time fire safety professionals
- Lack of firefighting equipment and extinguishers
- Lack of smoke alarms, emergency exits, fire hydrants, sprinklers
- Excessive use of false ceiling
- Closed exit doors for security reasons
- Lack of staff training on firefighting equipment

ROLE OF INFORMANT/STAFF WHO DISCOVERS FIRE/SPARKING

- For activating CODE RED, dial 1112 (A-Block)/1113 (B-block)/1114 (D-Block) from the nearest intercom device and say—“CODE RED & LOCATION” 3 times.
- Raise the alarm by activating the nearest fire alarm. “Break glass/ press at the manual call point.
- In case there is no staff, inform the fire control room
- Remove all inflammable liquids from the nearby.



What is the Fire Triangle?

The Fire Triangle illustrates the three essential components needed to start and sustain a fire: Heat, Fuel, and Oxygen. If any one of these elements is removed, the fire will be extinguished.

Heat

- Heat is the energy source required to raise the temperature of fuel to its ignition point (also called its *flashpoint*).
- Different materials ignite at different temperatures.
- Firefighting Tip: Water and other cooling agents can help remove heat from the triangle to put out the fire.

Fuel

- Fuel is the material that burns—examples include wood, paper, oil, and fabrics.
- Fuel sources vary in how easily they ignite and how intensely they burn.
- Proper storage and management of combustible materials is key to reducing fire risk.

Oxygen

- Oxygen supports combustion by reacting with fuel to produce heat and carbon dioxide (CO₂).
- Earth's atmosphere contains about 21% oxygen, which is usually enough to maintain a fire once it starts.
- Fire blankets and certain fire extinguishers work by cutting off the oxygen supply

Key Facts to Remember

- ◆ Air contains ~21% oxygen, which supports combustion.
- ◆ Some fuels already contain oxygen, aiding combustion.
- ◆ Common heat sources: friction, sparks, electrical energy, hot surfaces, and sunlight.
- ◆ Fuel can exist in solid, liquid, or gaseous forms.



THE R.A.C.E. PROTOCOL FOR FIRE EMERGENCIES

In a hospital fire emergency, following a structured protocol can save lives. The RACE protocol is a standard guideline used in healthcare settings to manage fire situations effectively. As a bystander, you can play a key role in supporting this process.

What is RACE?

- **R – Rescue and relocate anyone in immediate danger**
- **A – Alert others by activating the building fire alarm**
- **C – Confine the emergency by closing the doors**
- **E – Extinguish/Evacuate immediately using the nearest safe exit**

How to Apply RACE as a bystander?

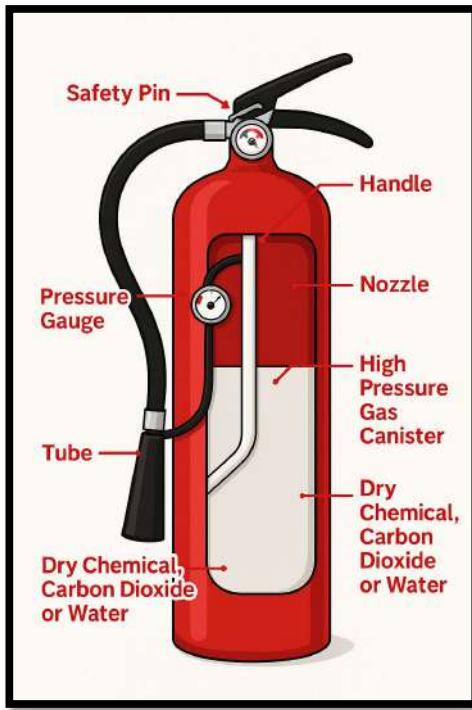
- **Step 1:** If you see a fire, don't panic. Assess the situation—if there's a patient nearby who can't move, gently guide them away from the fire if it's safe.
- **Step 2:** Locate the nearest fire alarm (usually red boxes on walls) and pull the lever. Shout "Fire!" to alert others while heading to a safe area.
- **Step 3:** As you leave, close doors behind you to slow the fire's spread. For example, if the fire is in a patient room, shutting the door can prevent smoke from entering the hallway.
- **Step 4:** Follow evacuation signs to the nearest exit. If the fire is small and you're trained, you might use a fire extinguisher.



Your Role: Stay calm, follow the RACE steps, and assist hospital staff by ensuring patients are safely evacuated without putting yourself in danger.

USING A FIRE EXTINGUISHER

Fire extinguishers can be a valuable tool to stop small fires, but only if you're trained and the situation is safe. Here's how to use one effectively, along with tips on identifying the right extinguisher for the fire.



Identifying the type of extinguisher required

Type Extinguisher Type	Class A Fire Type Organic Materials (e.g Paper & Coal)	Class B Flammable Liquids (e.g Petrol & Paint)	Class C Flammable Gases (e.g Butane & Methane)	Class D Combustible Metals (e.g Lithium & Magnesium)	Electrical Equipment (e.g Computers & Servers)	Class F Cooking Oils (e.g Olive Oil & Fat)
Water	✓	✗	✗	✗	✗	✗
Foam	✓	✓	✗	✗	✗	✗
Dry Powder	✓	✓	✓	✓	✓	✗
CO2	✗	✓	✗	✗	✓	✗
Wet Chemical	✓	✗	✗	✗	✗	✓

THE P.A.S.S. TECHNIQUE



If you're trained and the fire is small (e.g., a small trash can fire), follow these steps:

1. **Pull the Pin:** This unlocks the extinguisher. Hold the extinguisher firmly and pull the safety pin (usually at the top near the handle).
2. **Aim the Nozzle:** Point the nozzle at the *base* of the fire, not the flames. Targeting the base cuts off the fire's fuel source.
3. **Squeeze the Handle:** Press the handle to release the extinguishing agent. Keep a firm grip to control the flow.
4. **Sweep Side to Side:** Move the nozzle from side to side to cover the entire base of the fire until it's fully extinguished.

Safety Tips

- **Stand Back:** Position yourself 6–8 feet away from the fire to avoid heat and flames.
- **Ensure an Exit:** Always have a clear escape route behind you in case the fire grows.
- **Know When to Stop:** If the fire doesn't go out within 10–15 seconds or starts to spread, evacuate immediately and leave it to professionals.

Your Role

- **Only use a fire extinguisher if you've been trained and the fire is small.**
- **If you're unsure or the fire is growing, evacuate and alert hospital staff or firefighters.**

STOP, DROP, AND ROLL

Stop.



Drop.



Roll.



WHAT TO DO: STAY SAFE AND ACT SMART IN A FIRE

Dos	DON'Ts
<ul style="list-style-type: none">Stay calm and avoid panicFollow Hospital Staff InstructionsUse the nearest exitHelp ambulatory patientsSwitch off the electrical supply in your area, if possibleClose the doors behind youUse a Fire extinguisher if safeGather at the assembly point	<ul style="list-style-type: none">Do not use elevatorsDo not run or push othersDo not jump through windowsIgnore fire alarmsDo not tamper with fire equipmentDo not use water on electrical or chemical firesRe-enter the buildingBlock exits

SUPPORTING PATIENTS DURING EVACUATION

Patients in a hospital are often vulnerable during a fire due to mobility issues, medical conditions, or dependency on equipment. As a bystander, you can assist in their evacuation, but only under the guidance of hospital staff.

Types of Patients and How to Help

1. Immobile Patients (e.g., bedridden or ICU patients):

- What to Do: Don't attempt to move them unless they're in immediate danger and you're trained. Alert hospital staff to their location so professionals can handle the evacuation.
- Why: Moving these patients improperly can cause injury or disrupt critical medical equipment.

2. Ambulatory Patients (e.g., those who can walk with assistance):

- What to Do: If directed by staff, guide them to the nearest exit. Hold their arm if needed and ensure they don't trip over obstacles like IV lines or furniture.



- Why: These patients may be disoriented or weak, so your support can help them evacuate safely.

3. Oxygen-Dependent Patients:

- What to Do: Avoid moving them near open flames or sparks, as oxygen can cause explosions. Inform staff of their location and let professionals handle their evacuation.
- Why: Oxygen-rich environments are highly flammable, posing a significant risk.

4. Children or Elderly Patients:

- What to Do: Hold their hand and guide them calmly to the nearest exit. Speak reassuringly to keep them calm and watch for obstacles they might not see.
- Why: These patients may panic or have difficulty moving quickly, so your calm presence can make a difference.

AFTER THE FIRE – WHAT TO DO?

Once the fire is under control and you're safely outside, there are important steps to take to ensure everyone's well-being and to prevent future incidents.

Post-Fire Actions

1. **Stay Out of the Building:**
 - Don't re-enter the hospital, even if you left belongings behind. The structure may be unstable, with lingering smoke or toxic fumes.
2. **Seek Medical Attention:**
 - If you or others have inhaled smoke, experienced burns, or feel unwell, get checked by a healthcare provider immediately. Don't ignore minor discomfort.
3. **Follow Instructions from Authorities:**
 - Listen to hospital staff, firefighters, or other emergency personnel for next steps. They may direct you to a temporary shelter or provide updates on patient transfers.
4. **Support Emotional Recovery**
 - A fire can be traumatic for patients, visitors, and staff. Offer emotional support by listening to others and encouraging them to seek counselling if needed.
5. **Raise Awareness**



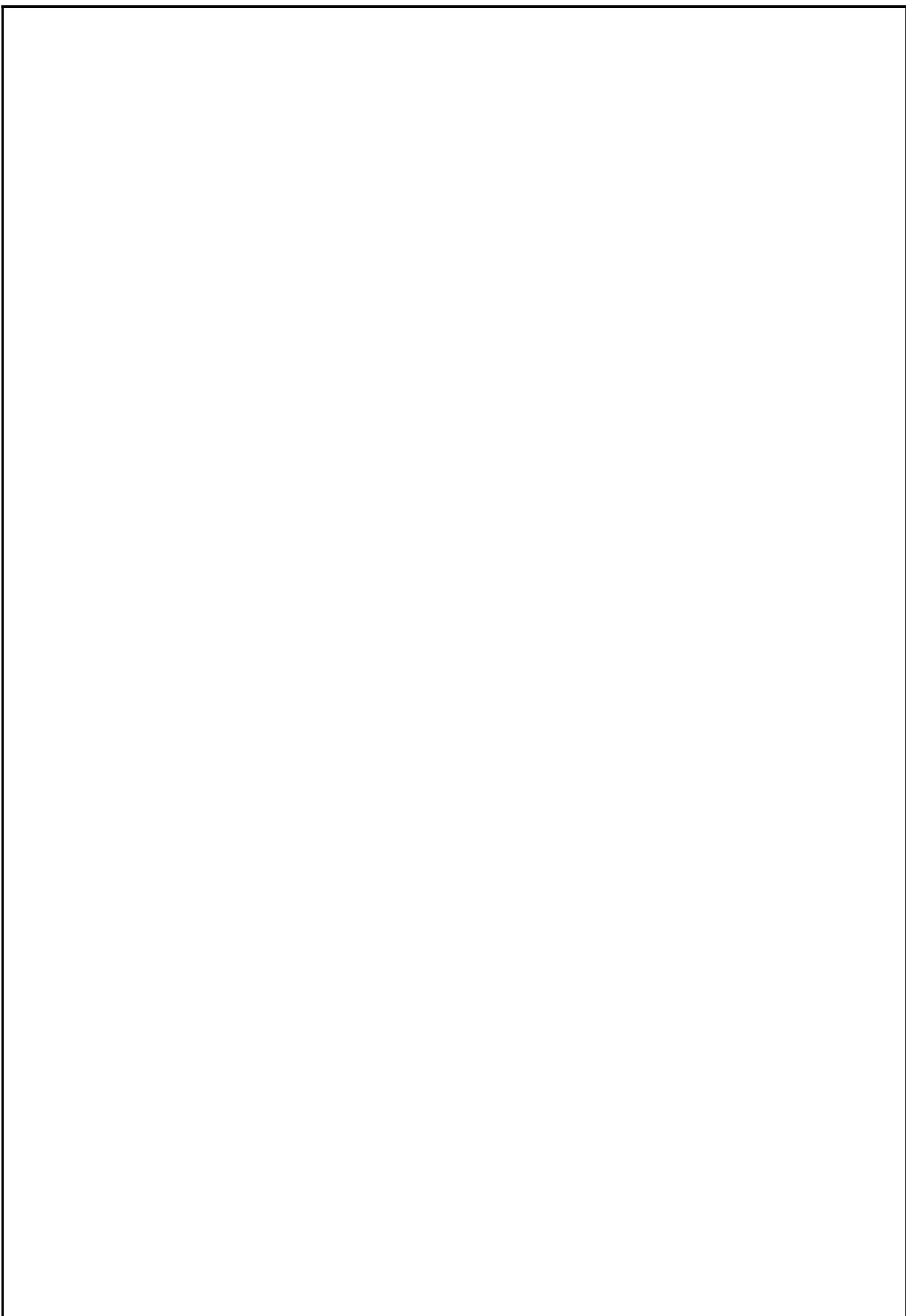
LESSONS LEARNED

- **Prevention is Key:** Regularly check for fire hazards in your environment and encourage hospitals to conduct fire safety audits.
- **Preparedness Saves Lives:** Familiarize yourself with the hospital's evacuation routes and fire safety equipment during your visits.
- **Community Effort:** Fire safety is a shared responsibility—your actions can inspire others to be more aware and proactive.

FINAL NOTE

A hospital fire is a challenging situation, but your knowledge and calm actions can make a significant difference. By following this guide, you're not only protecting yourself but also helping vulnerable patients and supporting hospital staff during a crisis. Stay prepared, stay safe, and help protect lives in a hospital fire emergency.

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EVERY SECOND
COUNTS – FIRE
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**HAMDARD INSTITUTE OF MEDICAL SCIENCES & RESEARCH
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