Fire Safety

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INTRODUCTION

Within the healthcare environment are risks and hazards that could lead to the possibility of a fire. According to the United States Federal Emergency Management Agency (FEMA), between 2004 and 2006, an average of 6,400 fires occurred in medical facilities each year, resulting in over $34 million in losses.

It is imperative for everyone in a medical facility to understand what to do in the event of a fire, in order to protect themselves and others from harm. This may include removing patients from their room and relocating them to a different unit or floor, or how to react if you are the first and only available person to help extinguish a fire.

PURPOSE/OVERALL GOAL

This module outlines what healthcare workers need to know about fire safety, preparation, and response, including how to react quickly, how to use fire extinguishers, and how to evacuate patients.

The goal of this module is to ensure you are prepared to deal with a fire, large or small, at your facility, and that you know the steps to take to keep yourself, coworkers, and patients safe.

COURSE OBJECTIVES

After completing this module, the learner should be able to:

1. Define the R.A.C.E. acronym for how to respond to a fire
2. Explain what should and should not be done in the event of a fire
3. Demonstrate the proper use of a fire extinguisher
4. Understand the importance of fire drills and fire preparedness
5. Describe what to do if a person is on fire or facility evacuation is necessary
CONTROLLING A FIRE

All fires, no matter how minor, should result in immediate action. The most popular acronym associated with fire safety education is “R.A.C.E.” because it provides a convenient way for you to remember what to do in case of a fire.

- **R** = **Rescue Patients and Employees in Immediate Danger**
The first step in the R.A.C.E. procedure is to rescue patients and employees in immediate danger. ‘R’ can also stand for remove all patients and employees in immediate danger. All healthcare professionals should know the evacuation route in their area, as well as their facility’s policies and procedures for evacuating patients. Follow these procedures quickly and calmly.

- **A** = **Activate the Fire Alarm**
The second step of the R.A.C.E. procedure is to activate the fire alarm. ‘A’ can also stand for alarm. If you are the first to discover the fire and the fire alarm has not been activated, immediately activate the alarm. Follow your facility’s policies and procedures for notifying appropriate personnel about the fire.

- **C** = **Confine/Contain the Fire**
The third step of the R.A.C.E. procedure is to confine/contain the fire. The purpose of closing doors and containing the fire is to limit the fire’s access to oxygen. Close all doors to patient and storage rooms and make sure that the fire doors have automatically closed. Closing all doors helps prevent the spread of the fire to other areas.

- **E** = **Extinguish the Fire**
The final step in the R.A.C.E. procedure is to extinguish the fire. If the fire is small and contained, you can extinguish it by covering it with nonflammable materials or by using the correct type of fire extinguisher. Use the fire hoses available in your facility only if you have been properly trained to do so. Otherwise, evacuate everyone and wait for the fire department to extinguish the fire.
FIRE EMERGENCY DO’S AND DON’TS

In the event of a fire, here is what you should and should not do as a healthcare worker.

WHAT YOU SHOULD DO:
• If you are trained to do so, attempt to control the fire with a fire extinguisher. Ensure that backup fire extinguishers are available.
• Evacuate patients only if absolutely necessary.
• Reassure patients and visitors that the facility is responding to the emergency.
• To limit the amount of smoke released from a fire, close all doors in the immediate area of the fire. If possible, place a blanket under the entrance door to prevent smoke from escaping to other areas.
• If combustible materials such as oxygen, gas, or flammable liquids are near the fire area, immediately remove them if possible – but not if the fire is out of control.
• Shut off or unplug all unnecessary electrical equipment.
• Relinquish all firefighting procedures to members of the fire department upon their arrival.
• Provide fire department personnel with information concerning the contents of the room on fire, and any other information requested.

DO NOT:
• Do not pick up and run with burning articles. This will only fan the fire and could cause it to burn more rapidly.
• Do not attempt to put out an overhead fire. This procedure is extremely dangerous. Firefighters will perform this task.
• Do not endanger your own safety if you find the fire is no longer controllable.
FIRE EXTINGUISHERS

Per law, all areas of a healthcare facility are equipped with portable fire extinguishers. Fire extinguishers are located so that employees responding to a fire do not have to travel more than 75 feet, in any direction, to obtain one.

The type of extinguisher is based on hazards present in each location; however, the ABC extinguisher is most commonly found in the healthcare setting.

Types of fire extinguishers are as follows:
- Type A is for ordinary flammable materials such as paper, wood, fabric, and most plastics
- Type B is for flammable liquids such as gasoline, grease, paint, and compressed anesthetic gases
- Type C is for electrical equipment fires
- Type ABC – the most common in healthcare facilities – is for all types of fire

To use a fire extinguisher, remember the acronym “P.A.S.S.”:
1. **P** = PULL the pin
2. **A** = AIM low, at the base of the fire
3. **S** = SQUEEZE the handle while standing about 10 feet from the fire
4. **S** = SWEEP the hose from side to side

You should know the following about fire extinguishers:
- Access to fire extinguishers or extinguisher cabinets should remain unobstructed at all times.
- Should a fire extinguisher be discovered missing or discharged, contact the department responsible for fire extinguishers at your facility.
- Never put a discharged extinguisher back after use. It will not function properly, no matter how little substance was used, until it has been recharged or refilled.

The Oklahoma City Fire Department has made available a short video about the P.A.S.S. method, which you can view here: [https://www.youtube.com/watch?v=w_ZYoizwMX4](https://www.youtube.com/watch?v=w_ZYoizwMX4)
**FIRE DRILLS**

Fire drills are conducted to practice how to respond to a fire, and to assess how well this response is performed.

Fire drills are required:
- At least once a year, on all shifts, in non-patient areas
- Quarterly, on all shifts, in buildings that house patients overnight

Fire drills are conducted on an unannounced basis. Participation in fire drills is mandatory for all employees and must be taken very seriously.
FIRE PREPAREDNESS

Exits:
- Exits are to be kept clear at all times. Exit doors and stairwells are a means of escape and should be clear and unobstructed.
- Corridors and hallways should be maintained clear. “Movable carts in attendance and use” may be located in corridors, as long as they are off to one side and do not obstruct exit doors, fire pull stations, fire extinguisher cabinets, or medical gas zone valves.

Fire Alarm Systems:
- Healthcare facilities are equipped with smoke detectors and an automatic fire alarm system that will sound when heat or smoke is detected within the facility or when a manual pull station is activated.
- Manual pull stations are red in color and are located throughout the facility. All employees should know where the alarm pull stations are located in their work areas.
- The fire alarm system will emit a continuous loud alarm until the alarm has been silenced.
- If the automatic fire alarm system is activated, the alarm will sound not only at the location of the fire, but on the floors above and below the emergency.
- Visual alarms are provided for the hearing impaired. The visual alarm is a blinking white light next to the fire alarm bell. This system is activated at the same time the loud alarm is sounded.
- Sprinklers are activated only by heat. Each sprinkler has to heat up to a specific temperature before water will come out.
- Not all sprinklers in a room will automatically discharge. Each sprinkler head would have to reach the designated temperature before discharging. Three or fewer sprinkler heads extinguish most major fires.

Fire/Smoke Barrier Doors:
- Healthcare facilities are equipped with automatic fire/smoke barrier doors.
- These doors MUST remain closed at all times, unless held open with an electric device that enables the doors to close automatically when the fire alarm system is activated or in the event of a power failure.
- If a fire alarm is sounded, the fire/smoke zone doors close automatically.
- Do not block access ways to the fire/smoke barrier doors or cause them to be held open for any period of time or for any reason.
- If you should discover a fire/smoke barrier door that is partially open or that will not close properly, report it immediately.

Emergency Generator System
- Should the normal supply of power be disrupted, the facility’s emergency generator will automatically supply power to the emergency lighting system, life support systems, and exit signs.
- The emergency generator will also supply power to all red electrical outlets in the facility. In an emergency, use the red electrical outlets for emergency purposes only.
- The emergency generator will automatically activate within 10 seconds after the loss of power. It will automatically shut off when the normal power supply is restored.
PERSON ON FIRE

If you discover a person on fire:

1. Do not let the person panic and run.
2. Wrap the person with a blanket and pat the fire area. Do not fan it; this will only cause the fire to spread and cause additional injuries.
3. If a blanket is not available, get the person on the ground and then roll him or her over, from side to side, until the fire is out.
4. Once the fire is out, remove all clothing to stop the burning process and cover the person with a clean sheet and towels. Do not cover the face. Make sure the person is breathing and transport immediately to the Emergency Department.
5. Keep the injured person as calm as possible.
6. Inspect the area to ensure that sparks have not created another fire, or that fire is not present in the area where the patient was discovered.
EVACUATION

Evacuation in the event of a fire will be ordered only if:
1. It is determined that a fire cannot be controlled by the immediate use of available fire extinguishing devices.
2. Patients, visitors, and employees are determined to be in immediate danger of injury or death if they remain in an area threatened by fire or smoke.

There are two types of evacuation:
1. Lateral evacuation – This is an evacuation of all occupants in an area threatened by fire, through the fire/smoke barrier doors, to a safe area on the same floor.
2. Vertical evacuation – This is an evacuation of all occupants on a floor threatened by fire to a safe floor.

The most likely route for evacuation of patients is laterally. Evacuate all patients nearest the danger area first.

If a complete evacuation of the area is ordered, move patients in the following order:
1. Ambulatory patients – Provide a guide to lead patients out and someone to follow to assure that no one becomes confused and tries to return to the area.
2. Wheelchair patients – Provide one person per chair to safely push the patient out of danger.
3. Bedfast patients – Many of these patients have equipment attached that will have to be disconnected prior to being moved.

Preparing patients for evacuation:
1. If possible, have ambulatory patients get dressed.
2. If possible, place bedfast patients in wheelchairs. Beds are difficult to move through patient room doorways.
3. Make sure all patients are accounted for. When the order for evacuation has been given, one person should be assigned the duty of making sure that medical charts are moved with the patient.
4. Check exits in advance of the evacuation to ensure they are safe and usable if evacuation from the building is ordered.
5. Once evacuation has occurred, do not let anyone return to the danger area. Stay with evacuated patients.
6. Fire/smoke barrier doors will close automatically when the fire alarm system is activated. When patients, visitors and employees are evacuated to an area on the same floor, move them beyond the fire/smoke barrier doors.
7. If you have laterally evacuated to a safe area, on the smoke-free side of the fire/smoke barrier doors, you may evacuate by elevator ONLY under the direction of the fire department.
Safety precautions during evacuation:

1. When traveling through smoke, keep low. Smoke and heat rise. Crawl along the floor if you must, but keep low.
2. Do not run, or allow anyone to run, in smoke-filled areas.
3. Ensure that all patients are wrapped in a blanket. When going through smoke, make sure that patients’ and employees’ faces are covered. If evacuating through fire or extremely hot areas, ensure that evacuees are covered with wet blankets, if possible.
4. Close all doors after everyone has passed through.
5. All non-clinical and ambulatory care areas should have a designated meeting area so that when evacuation is completed, the supervisor of the department can take an accurate head count.

Never open a door into an area where a suspected fire might be unless you do the following. If a fire is on the other side, these steps will help you close the door instead of allowing the fire to blast through.

1. Place the back of your hand against the door and feel across the door for any signs of heat from the other side.
2. If the door is cool to the touch, brace your shoulder against the door.
3. Brace your foot against the base of the door.
4. With your face turned toward the hinged side of the door, begin opening the door slowly.
5. If smoke seeps through, close the door immediately. If the door is opened wider and fire is present, the air from the room could cause the room to explode.
6. Place a wet blanket or towel under the door to prevent smoke from entering the room.
CONCLUSION

Fires are rare, but they do happen. Fires in medical facilities can be particularly dangerous due to the presence of oxygen and other flammable substances, as well as the challenge of evacuating patients who may not be ambulatory.

Knowing how to prepare for and respond to a fire is critical for all healthcare workers. Your appropriate response during a fire emergency can save your life, and the lives of your coworkers and patients as well.

REFERENCES: