



BASIC FIRE SAFETY

Self-Study Guide

OBJECTIVES OF THE BASIC FIRE SAFETY PROGRAM

Upon completion of this self-study guide, you should be able to identify classes of fires, types of fire extinguishers and your role in the Basic Fire Safety Program.

Successful completion of this program can be accomplished by completing the examination on the last page of this self-study guide with a score of 80% or better.

INTRODUCTION

Title 29 of the Code of Federal Regulations (CFR) 1910.38, Employee Emergency Plans and Fire Prevention Plans and 1910.157, Portable Fire Extinguishers, require that employees be familiar with fire emergency action plans and the general principals of fire extinguisher use and hazards involved with incipient (early stage) fire fighting.

The portable fire extinguisher is one of the most common fire protection appliances in use today. Portable fire extinguishers are the first line of defense against fire, but only if they are **used properly** and only **when used on the type of fire they are designed to extinguish**. Using them safely and to their fullest potential requires proper training.

Fire is a real threat in healthcare facilities. According to the National Fire Protection Association (NFPA), about 7,000 fires in healthcare facilities are reported every year. Many patients are vulnerable in fire emergencies due to illness and special needs—thus increasing the risk of casualties.

Your mission is to prevent the threat of fire by identifying and correcting any fire hazards in your workplace. Through training and practice drills, you will reduce the number of casualties due to fire by responding to fire threats more quickly and effectively.

Given the right ingredients, fire can happen anywhere:

FUEL -- any combustible material – solid, liquid or gas. Most solids and liquids must vaporize before they will burn.

OXYGEN – The air we breathe is about 21% oxygen. Fire only needs 14% oxygen to ignite.

HEAT – Heat is the energy needed for the fuel to generate sufficient vapors for ignition to occur.

CHEMICAL REACTION – When fuel, oxygen and heat come together under the right conditions, a chemical chain reaction happens and fire occurs.

CLASSES OF FIRE

Not all fires are the same. If you use the wrong type of fire extinguisher on the wrong class of fire, you can, in fact, make the fire worse. Therefore, it is very important to understand the different classes of fires. Fires are normally classified, according to the fuel involved and fire extinguishers will have a corresponding letter (A, B, C, D) or pictograph label to identify the type of fire they are designed to extinguish.

CLASS 'A' fires involve the burning of ordinary combustibles like wood, paper, cloth, rubber or certain plastics.

CLASS 'B' fires involve the burning of gases and liquids such as petrol, kerosene, alcohol, oil, grease, paint thinner.

CLASS 'C' fires involve the burning of energized electrical equipment including wiring, fuse boxes, circuit breakers, machinery, and appliances.

CLASS 'D' fires involve the burning of certain metals such as lithium or magnesium. **DO NOT ATTEMPT** to extinguish a combustible metal fire. Only the Fire Department is trained to extinguish a Class D fire.

As a healthcare worker, you are at most risk for Class 'A', Class 'B', and Class 'C' fires. You can identify and correct hazards related to these fires by following some simple rules.

FIRE PREVENTION

Class 'A' Fires: Ordinary Combustibles

Most Class 'A' fires can be prevented by simple housekeeping:

- Make sure storage and maintenance areas are free of trash.
- Keep oily rags and similar debris in metal containers away from heat.

Careless handling of smoking materials is the most common cause of fatal fires in healthcare facilities – even though most facilities prohibit smoking.

- Make sure smoking occurs only in designated areas.
- Never tolerate smoking in an area where oxygen is used or stored.
- Smoking materials should only be discarded in large, deep, non-tip ashtrays.
- Ash should be emptied frequently into specified metal containers.

Class ‘B’ Fires: Gases and Liquids

- Store combustible liquids and gases in designated areas away from heat sources and away from patients.
- Do not store cleaning fluids in an electrical closet or near any other heat source.
- Do not allow any spark producing objects, including toys or games, near oxygen or in patient areas.

Class ‘C’ Fires: Electrical

Electrical fires are the most common fires in healthcare facilities. To help prevent them, follow these guidelines:

- Make sure that only UL – rated electrical equipment is used.
- Make sure that all electrical equipment and motors are kept clean and properly maintained.
- Report old or worn wiring and broken or damaged fittings on equipment to the appropriate person.
- Never overburden electrical outlets by creating an “octopus.”
- Never run extension cords under carpeting or be tacked to walls.
- Immediately investigate any strange or unusual smell coming from a piece of electrical equipment. A strange odor is often the first warning of fire. Stop using that piece of equipment until it is checked out.

TYPES OF FIRE EXTINGUISHERS

Fire extinguishers are an important defense measure for putting out fires. They can save lives and property by putting out small fires before they get out of hand. Make sure you know where the fire extinguishers are kept. You may want to learn to find them in the dark, since electricity may be turned off during a fire.

In healthcare facilities, fire extinguishers are designed to put out Class ‘A’, Class ‘B’, and Class ‘C’ fires.

Stored Pressure Water Extinguishers also known as Air-Pressurized water Extinguishers (APW) – are large extinguishers, silver in color, filled about two-thirds with water and pressurized with air. This type of extinguisher removes the “heat” element from the fire. Stored Pressure Water extinguishers are designed for Class A (wood, paper, cloth) fire only.

REMINDER: Never use water to extinguish flammable liquid fires (class B) and never use water to extinguish electrical (Class C) fires.

Stored pressure water extinguishers have an initial range of 30-40 feet under normal conditions. The discharge time is 30 to 60 seconds depending on the size of the extinguisher. You may need to move closer as the pressure diminishes and use your fingertip to create a spray and avoid scattering the fuel. Break apart the fuel and thoroughly soak it after the fire is out to remove the heat.

Dry Chemical Extinguishers – are useful for Class A-B-C fires and are the **best all around choice**.

Dry Chemical Extinguishers leave a blanket of non-flammable material on the extinguished material which reduces the likelihood of re-ignition. They make a terrible mess, but if the choice is fire or a mess, take the mess! On a Class A fire you should break apart the fuel and coat the embers.

THE RACE FOR SAFETY

Fire is fast – it spreads quickly. a small spark can cause a room to fill with smoke or start a blaze in seconds to minutes. When fire breaks out, the air itself may soon be hot enough to ignite every combustible object in the room, a phenomenon known as flashover. To stay safe you need to act quickly.

Take time to investigate any suspicious smell or smoke at once – because fire can spread quickly. If you think you smell smoke behind a door, feel the door with the back of your hand first. If the door is too hot to touch, don’t open it. Otherwise, open the door slowly.

The first three minutes after a fire is detected are critical – you are in a **RACE** for safety:

- R:** Rescue
- A:** Alarm
- C:** Confine the blaze
- E:** Extinguish

RESCUE

The first priority is to remove all patients and visitors from immediate danger. Stay calm to reassure patients. Remember to stay low during the rescue. Smoke rises to the ceiling and forms a heavy dense cloud that slowly descends. This cloud is deadly, because it contains toxic gases that can kill within minutes. In fact, smoke-related carbon monoxide poisoning causes 75% of all fire deaths.

Heat also rises. In a fire, it is possible for temperatures to vary from 90°F near the floor to a lethal 600°F at eye level. Soaring temperatures can sear lungs and fuse clothing to skin.

Remember to crawl beneath the smoke and heat.

ALARM

- Pull the fire alarm handle nearest fire location. This action activates the audible and visual fire alarms in the hospital, closes all magnetically held-open fire doors, and alerts the Waverly Fire Department.
- Dial extension 360 (Medical-Surgical Nurses Station), and state **CODE RED** and location of fire.

CONFINE

- Close doors, windows and all vertical openings like laundry chutes.

EXTINGUISH

If a fire is small and confined, you may be able to extinguish it. If fire is in a trashcan or ashtray, smother the fire with a pillow, towel, rug or blanket. If a patient's clothes are on fire, wrap the patient tightly in a large blanket to extinguish the flames. If a piece of equipment catches fire, pull the plug if possible or have the electricity turned off at the source panel. If a fire can't be extinguished be prepared to evacuate patients.

Remember **YOU ARE NOT** required to fight a fire! If you have the slightest doubt about your control of the situation, **DO NOT FIGHT THE FIRE**. If you have no other choice, use the following as a mental checklist to make a **Fight or Flight Decision**.

If you do have to use the fire extinguisher use the PASS method. You simply pull, aim, squeeze and sweep.

- **PULL** the pin between the two handles.
- **AIM** the nozzle at the base of the fire – since the pressure of spraying directly into the fire may spread the burning material.

- **SQUEEZE** the handles together.
- **SWEEP** the extinguisher from side to side. Evenly coat the entire area of the fire. Keep applying the fire-extinguishing agent even after the flames are put out. Stay near the extinguished fire, if possible, until the fire department arrives.

Stand several feet from the fire and avoid walking on an area that you have extinguished in case the fire re-ignites or the extinguisher runs out.

Report any discharge of an extinguisher (even just a tiny amount) or any time the pin was pulled on a fire extinguisher to the maintenance department. **NEVER** put a discharged extinguisher back in its original storage position.

EMERGENCY CODES

Pike Community Hospital uses internal Emergency Codes to alert or warn employees of specific situations. The following is a list of those codes:

| | |
|-------------|---|
| CODE RED | Fire or Smoke |
| CODE ADAM | Infant/Child Abduction |
| CODE BLACK | Bomb/Bomb Threat |
| CODE GREY | Severe Weather |
| CODE ORANGE | Hazardous Material Spill |
| CODE BLUE | Medical Emergency Adult |
| CODE PINK | Medical Emergency Pediatric |
| CODE YELLOW | Disaster – Receiving medical patients in excess of normal |
| CODE VIOLET | Violent Patient |
| CODE SILVER | Person with a Weapon |
| CODE BROWN | Missing Adult Patient |
| CODE LIGHT | A Planned Electrical Outage |
| CODE ZEBRA | Bioterrorism Alert |
| CODE GREEN | Evacuate to Appropriate Exit |

Your supervisor will instruct you regarding your duties in the event an emergency code is paged.

For more information regarding the Emergency codes, reference the following:

- PCH Safety Manual
- PCH Safety Officer (Gary Damron, ext. 520)
- Department Supervisor/Manager

EVACUATE WHEN NECESSARY

If a fire cannot be extinguished and smoke, fumes or flames threaten patient safety, you may have to evacuate. Relocate patients only when directed and remember to assist visitors as well.

The Hospital Operator (or the House Supervisor if at night) is responsible for paging the *CODE GREEN* signal if necessary to evacuate the hospital.

- Become familiar with the evacuation route of your work area.
- Keep hallways and stairs clear, since they are major evacuation routes, never use halls or stairs for storage.

Non-Ambulatory Patients

Evacuate non-ambulatory patients only when directed to do so since you may have to disconnect traction or maintain portable life support.

- Use wheelchairs or stretchers if available.
- Use blankets as stretchers, or litters if available.
- Push the patient to safety while in bed only if necessary. Beds can cause a dangerous traffic jam in the hallway.

Patients with Special Needs

During an evacuation, patients may present special challenges.

- Children, psychiatric patients and very elderly patients may exhibit irrational behavior: They may ignore the fire, become transfixed by it, resist rescue efforts or even hide. Give patients directions firmly and calmly. Escort them individually to a safe area.
- Blind patients should be told to keep close physical contact with a leader.
- Deaf patients should be directed by gestures and also escorted to a safe area.