

# Preparing for Emergency Response

## Lecture 10



# Emergency

It is defined as:

"An emergency is an urgent, unexpected, and usually dangerous situation that poses an immediate risk to health, life, property, or environment and requires immediate action."

As per the German Red Cross, the emergency is defined as:

"Life threatening condition which requires the administration of life saving measures"





# Types of Emergencies



## Chemical Accidents

A chemical accident is the unintentional release of one or more hazardous substances that could harm human health and the environment. Such events include fires, explosions, leakages, or the release of toxic or hazardous materials that can cause people illness, injury, or disability.



## Civil Disorder

Civil disorder, also known as civil disturbance, civil unrest, or social unrest, is a situation arising from a mass act of civil disobedience in which law enforcement has difficulty maintaining their authority.



## Power Outage

A power outage is the loss of the electrical power network supply to an end user. There are many causes of power failures in an electricity network.



## Blizzard

A blizzard is a severe snowstorm characterized by strong sustained winds and low visibility, lasting for a prolonged period—typically at least three or four hours.

# Types of Emergencies At Workplace

A workplace emergency is an unforeseen situation that threatens your employees, customers, or the public; disrupts or shuts down your operations; or causes physical or environmental damage.

- Fires or Explosions
- Medical Emergencies
- Severe Weather
- Earthquakes
- Major Power Failures
- Hazardous Material Spills

# Steps of Emergency Management







## *Prevention:*


Actions were taken to avoid an incident. Stopping an incident from occurring. Deterrence operations and surveillance.

## *Mitigation:*

Refers to measures that prevent an emergency, reduce the chance of an emergency, or reduce the damaging effects of unavoidable emergencies. Typical mitigation measures include establishing building codes and zoning requirements, installing shutters, and constructing barriers such as levees.

## *Preparedness:*

Activities increase a community's ability to respond when a disaster occurs. Typical preparedness measures include developing mutual aid agreements and memorandums of understanding, training for response personnel and concerned citizens, conducting disaster exercises to reinforce training and test capabilities, and presenting all-hazards education campaigns.





## ***Response:***

Actions carried out immediately before, during, and immediately after a hazard impact aim to save lives, reduce economic losses, and alleviate suffering. Response actions may include activating the emergency operations center, evacuating threatened populations, opening shelters and providing mass care, emergency and medical care, firefighting, and urban search and rescue.



## ***Recovery:***

Actions taken to return a community to normal or near-normal conditions, including restoring basic services and repairing physical, social and economic damages. Typical recovery actions include debris cleanup, financial assistance to individuals and governments, rebuilding of roads and bridges and key facilities, and sustained mass care for displaced human and animal populations.



# Fires





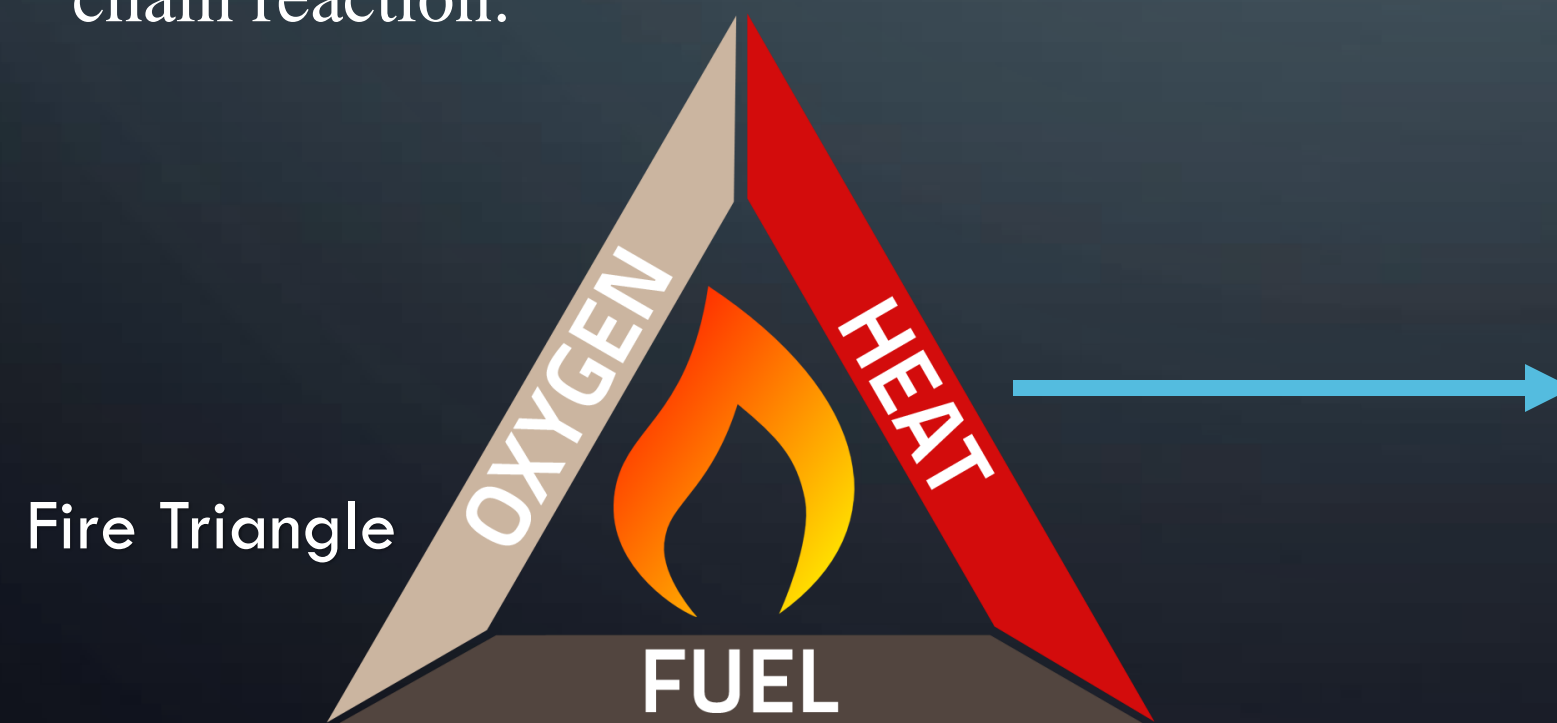
# Fire

Fire is defined as:

“Any instance of open flame or other burning in a place not intended to contain the burning or in an uncontrolled manner.”

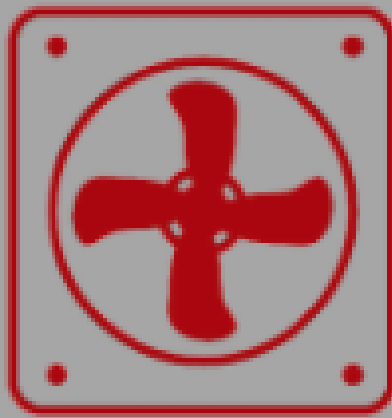
## Fire Tetrahedron

- The fire triangle was changed to a fire tetrahedron to reflect this fourth element.
- A tetrahedron can be described as a pyramid which is a solid having four plane faces.
- Essentially all four elements must be present for fire to occur, fuel, heat, oxygen, and a chemical chain reaction.

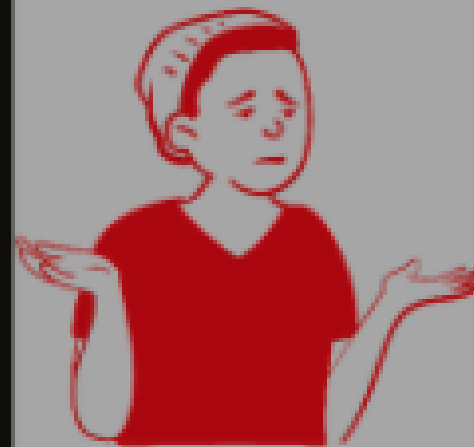


# Common Causes of Fire

## Common Causes of Workplace Fires



Faulty  
Electrical  
Equipment  
and Circuits



Negligence  
and  
Human  
Error



Accumulation  
of  
Combustible  
Substances









Deliberate  
Vengeful  
Acts



Uncollected  
Refuse  
and Waste



# Types of Fires

CLASSIFICATION		RISK
	CLASS A	These are fires that involve solid materials like paper, wood or textiles.
	CLASS B	These are fires that involve liquids, like oils, petrol or diesel.
	CLASS C	These are fires that involve flammable gases, such as propane, butane or methane.
	CLASS D	These are fires that involve metals, like aluminium, magnesium, titanium or swarf.
	CLASS E	These are fires that involve live electrical equipment, like computers or phone chargers.
	CLASS F	These are fires that involve cooking oils and fats, such as in deep-fat fryers.



# Fire Extinguisher Types and Uses





## 1st Class Fire Protection

01603 742741

enquiries@1stclassfireprotectionnorfolk.co.uk



## Fire Extinguisher Type



**Powder**



**Foam**



**CO<sup>2</sup>**



**Water**



**Wet Chemical**

### Fire Type

Fire Type	Extinguisher Type	Powder	Foam	CO <sup>2</sup>	Water	Wet Chemical
<b>CLASS A</b> Solids (e.g. wood, plastic, paper)		✓	✓	✗	✓	✗
<b>CLASS B</b> Flammable Liquids (e.g. solvents, paint, fuels)		✓	✓	✓	✗	✗
<b>CLASS C</b> Gases (e.g. butane, propane, LPG)		✓	✗	✗	✗	✗
<b>CLASS D</b> Metals (e.g. lithium, magnesium)		✓	✗	✗	✗	✗
<b>ELECTRICAL</b> Equipment (e.g. computers, servers, TVs)		✓	✗	✓	✗	✗
<b>CLASS F</b> Cooking Oils (e.g. cooking fat, olive oil)		✗	✗	✗	✗	✓
<b>Some examples of businesses that may need this extinguisher</b>		Outdoor locations, garages, welding workshops, forecourts.	Schools, offices, hotels, shops, hospitals, apartments.	Offices, server rooms.	Schools, hospitals, shops, apartment blocks.	Kitchens, canteens, restaurants.

# Workplace Fire Safety Tips



Identify the fire hazards

Identify the people at risk

Evaluate and reduce hazards

Set up an emergency plan  
and conduct training

Review risk assessments





A background image showing a fire hose reel on the left and a fire extinguisher on the right, both in a red cabinet. The image is partially obscured by a dark blue overlay on the right side.

# Important Safety Elements

- Alarms
  - Smoke
  - Carbon Monoxide
- Fire extinguishers
- Residential Fire Sprinkler Systems



# How To Use A Fire Extinguisher

Remember the acronym,  
"P.A.S.S."

P = Pull the Pin

A = Aim the extinguisher nozzle at the base of the flames.

S = Squeeze trigger while holding the extinguisher upright

S = Sweep the extinguisher from side to side, covering the area of the fire with the extinguishing agent

