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UNIT 9

Mass casualty incidents

- 9.1 Mass casualty incidents
- 9.2 Mass casualty incident management
- 9.3 Triage
- 9.4 Actions to take during a disaster
- 9.5 Actions to take after a disaster

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Introduction

Mass casualty incidents are emergencies in which the number of casualties is greater than the emergency medical resources available. During a disaster or emergency, knowing what to do or where to go could save your own, or other peoples' lives. In mass casualty situations, triage is a method that is used to decide who is most urgently in need of medical care and transportation to hospital.

In this unit you will learn about the causes of mass casualty incidents and some of the emergency situations that affect the United Arab Emirates. You will explore the actions to take if you are ever in this kind of situation.



Learning outcomes

Standard HSC.3.8.01 : Identify the correct actions to take during and after a mass casualty incident.

Learning outcomes:

HSC.3.8.01.001	Describe what a mass casualty incident is.
HSC.3.8.01.002	Identify mass casualty management techniques.
HSC.3.8.01.003	Summarise the components of basic triage.
HSC.3.8.01.004	Identify the correct actions to take during a disaster.
HSC.3.8.01.005	Describe the actions to take after a disaster.



Keywords

Word	Form	Definition
assess	verb	to make a judgement about something, for example how serious a situation is
avoid	verb	to stay away from something, or prevent something happening
cardiopulmonary resuscitation (CPR)	noun	a way of trying to save the life of someone who has stopped breathing and whose heart has stopped beating
casualties	noun	people hurt by an event or incident
challenging	adjective	something that tests a person's ability
collapse	verb	to break apart and fall down suddenly
damage	verb	to spoil or harm a person or thing
dangerous	adjective	likely to cause harm; unsafe
disaster	noun	an unexpected event that hurts or kills people and causes a lot of damage
hazard	noun	a source of danger
identify	verb	to know who or what someone or something is
incident	verb	an unexpected and usually unpleasant thing that happens
injured	adjective	harmed or damaged
management	noun	the skill of controlling and making decisions about a situation
paramedic	noun	a person whose job is to provide emergency medical care
prioritise	verb	to put in order of importance
scene	noun	the place of an event or action
severe	adjective	a very bad, serious or unpleasant
situation	noun	something that is happening at a particular time in a particular place
structure	noun	a building or object made from several parts
survival	noun	continuing to live or exist
technique	noun	a way of doing something
triage	noun	the process of deciding which patients should be treated first based on how sick or injured they are
unstable	adjective	not secure, something that is not fixed firmly
volunteer	noun	a person who offers to help with something

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9.1 Mass casualty incidents



What is a mass casualty incident?



Discussion: Mass casualty incidents

What do you think a mass casualty incident is? Can you think of any examples? Discuss as a class.



Keyword

mass casualty incident

mass: a large number or amount of something

casualty: a person hurt by an event or incident

incident: an unexpected and usually unpleasant thing that happens



Mass casualty incidents (MCI) are any incident where the number of casualties is greater than the emergency medical resources available.

Whether an incident is classed as a MCI is based on:

- ” how many medical professionals such as paramedics or first aiders are available.
- ” the type and amount of medical equipment available.
- ” the number of injured people.
- ” how serious the people’s injuries are.



Example

An accident that causes 20 people to have minor injuries such as small cuts or bruises may not be classed as a mass casualty incident. But 5 people with life-threatening injuries may be classed as one.



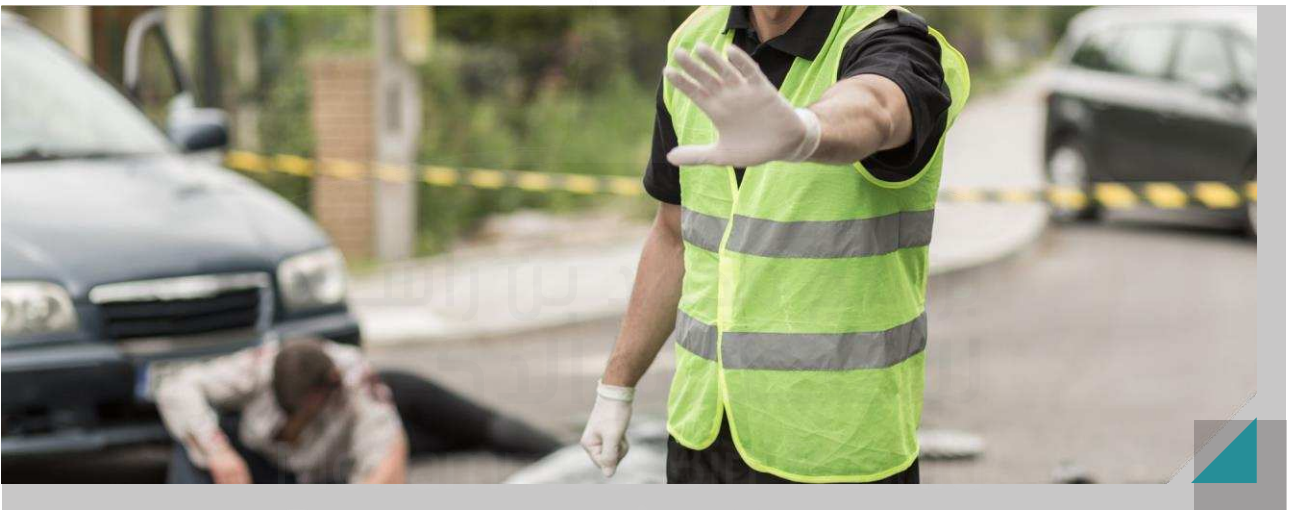
Keyword

injured

when a person is harmed or damaged, usually in an accident

Mass casualty situations are very stressful and can easily get out of control. After a serious accident, there could be large numbers of injured people.

It is important to know how to manage and control a MCI to prevent people from becoming more seriously injured or dying. It is also important to know what to do to protect your own safety.



Think

What do you think are the main causes of mass casualty incidents?

9.1 Mass casualty incidents

Causes of mass casualty incidents

There are different kinds of incidents that can injure or hurt many people. These incidents can be natural or man-made disasters.

Natural disasters

A natural disaster is a major event caused by the natural processes of the earth. Over the last 10 years, more than 2.6 billion people have been injured or killed by natural disasters.



Examples of natural disasters include:

- ” Earthquakes
- ” Landslides
- ” Floods
- ” Storms
- ” Wildfires

Man-made disasters

Man-made disasters are serious events that are caused in some way by human activity. One of the biggest causes of man-made incidents are road accidents, many of which involve more than one casualty.

Examples of man-made incidents include:

- ” Traffic incidents
- ” Other transport incidents
- ” Conflict (wars)
- ” Explosions
- ” Industrial accidents



Whether a MCI is natural or man-made, there will be hazards or dangers present at the scene that could cause you, or other people harm.



Keyword

scene

the place of an event or action

Dangers at the scene of an incident

At a mass casualty incident, it is important to check for hazards or dangers. If you are the first person to arrive at the scene, you should look around for threats to your own and other people's safety.

Possible dangers could include:

- ▣▣ traffic.
- ▣▣ fire.
- ▣▣ smoke.
- ▣▣ dangerous fumes.
- ▣▣ falling rocks.
- ▣▣ unstable buildings.
- ▣▣ fallen electric lines.



If any of these threats are present, you should not approach the area. Stay in a safe place and call 999/998. Leave dangerous situations to the emergency services. They have had the training to deal with these kinds of incidents.



Remember

In an emergency, your own safety is the most important thing. Do not approach the scene if it puts you at risk. You need to be able to help people, not become a casualty yourself.



Further information

There are many natural disasters that occur throughout the world at any time. In December 2019 alone there were 12 life-threatening and fatal disasters including floods, earthquakes, tropical cyclones and typhoons.

Information about these and other disasters, and the efforts being made to support those affected, can be found on the ReliefWeb website.



9.2 Mass casualty incident management



Managing a mass casualty incident



Keyword

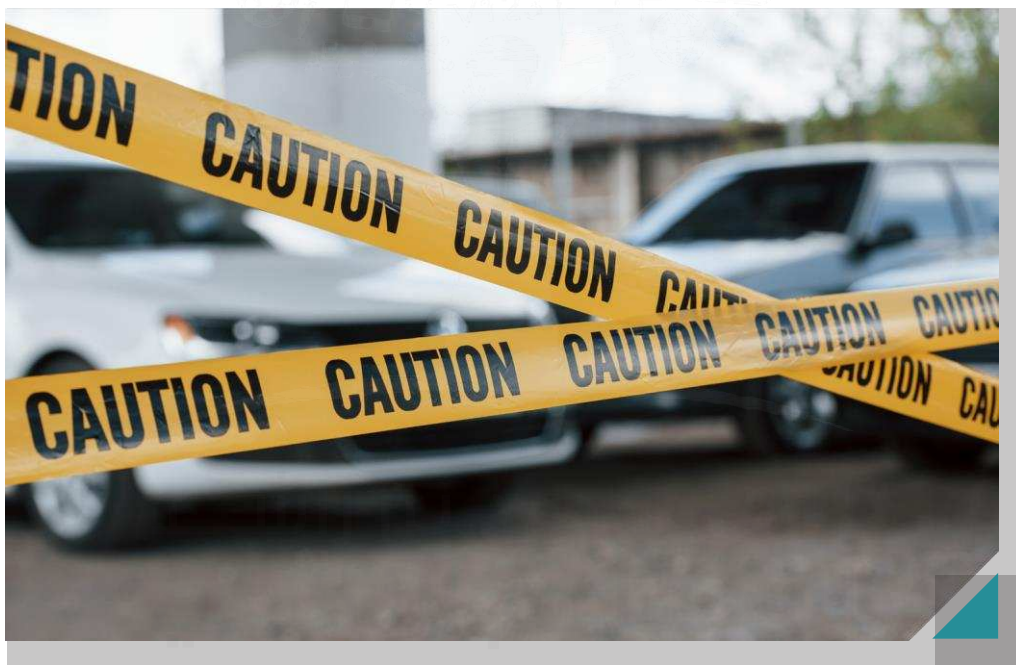
management

the act or process of controlling or dealing with something



Discussion: What should you do?

What do you think you should do if you are the first person at the scene of a mass casualty incident? Discuss with your class.



If you are the first person at the scene of an accident, there are some things that you can do to gain control of the situation and help those who are injured.

There are two priorities in a mass casualty situation:

- ▮▮ Manage the situation.
- ▮▮ Provide first aid.

Manage the situation



Keyword

priority

something that is more important than other things and that needs to be done or dealt with first

The scene of a mass casualty situation could have many hazards that are dangerous for everyone who is there. The priority is to manage these hazards before you start to help other people.



Remember

In your last lesson, you learned about hazards at the scene of an accident or disaster. Can you remember what any of them are?



Check for hazards

The first thing to do in a MCI is to check for any hazards or dangers. Look for things such as fires, smoke and moving traffic which could cause harm to you or someone else.

Call the emergency services

Call 999 as soon as possible. Tell the emergency services:

- ”” the location of the incident.
- ”” what has happened.
- ”” the number of people who are injured.

9.2 Mass casualty incident management

ABCDEF mass casualty management

A way to remember what to do to manage and avoid hazards in a mass casualty incident is to follow the ABCDEF steps.

A: Assess This means to think about what equipment and resources will be needed to manage the incident. For example, you may need first aid equipment. You may also need a number of police officers or ambulances for the injured people.



B: Breathing Is there anything in the area such as smoke or fumes that will cause you or other people to have breathing problems? If there is, then it is not safe. You should move away and wait for help.

C: Cars If the incident has happened on a road, one of the biggest dangers is from other cars which may be still moving around you. If it is safe, try to signal for the cars to stop.



D: Other dangers D is for other dangers that could be present. You should look for things such as falling or unsafe buildings, damaged roads, fallen trees or road signs.

E: Electricity One of the most dangerous things in a MCI are damaged electricity lines. These can kill people if they touch them. Stay away from electricity lines and ask other people to move away too.



F: Fires Fires are very common in mass casualty incidents. If you have a fire extinguisher, and it is safe to do so, you can try to put out small fires. If the fire is too big for you to manage, wait for the Civil Defence to arrive.



Providing first aid

The next priority after managing the scene of a mass casualty incident is to provide first aid for the injured people.

You might be the only person there who can help, and the emergency services could take a long time to arrive. Therefore, your actions could save injured people's lives.



Types of injuries

Assess what types of injuries people have. For example, are there people bleeding heavily or unconscious people?

The first thing you should do is sort the injured people into those who are most seriously injured. These people will need treatment first. This is called triage and you will learn about this in the next lesson.

First aid

In grades 11 and 12, you have learned about different first aid procedures. All of the first aid skills you have learned over the last two years could be very useful in a MCI because there will be a lot of different injuries.

First aid that may be needed in a MCI includes:



- ▮ providing first aid for burns.
- ▮ providing emergency care for electrical injuries.
- ▮ giving cardiopulmonary resuscitation (CPR).
- ▮ stopping severe bleeding.
- ▮ providing first aid for broken bones.



Remember

Only provide first aid if you are qualified and instructed to do so by the emergency services.

9.2 Mass casualty incident management



Further information

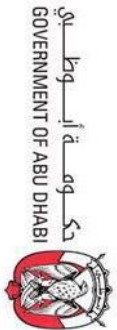
Disaster management in the UAE

In the United Arab Emirates, the management of disasters falls under the National Emergency Crisis and Disasters Management Authority (NCEMA).

NCEMA's mission is "to manage and coordinate emergency, crisis and disaster management through the use of national capacity and capabilities to preserve lives and properties".

One of NCEMA's projects aimed at protecting the public is the National Early Warning System. When an event, emergency or crisis occurs, the alerting authority will issue a warning message with the necessary instructions and actions to be taken by the public. The message is sent to mobile phones and a warning alert is displayed on the mobile phone screen. The public can then follow the instructions given to them, which will help to protect lives during emergencies.





9.3 Triage



Triage



Keyword

triage

the process of deciding which patients should be treated first based on how sick or injured they are



Discussion: Triage

Have you ever heard of the term triage before? What do you think it means? Discuss with your class.

Triage means to sort people who are injured after an accident into the order that they should be treated. For example, people with life-threatening injuries should be treated first and people with minor injuries last.

If you arrive at the scene of an accident you should:

- ” decide how seriously injured the people are.
- ” treat the most seriously injured people first.



The SALT triage method



Keyword

method

a way of doing something

Knowing how to use triage in a mass casualty situation, such as a traffic accident or natural disaster, could save many lives.

SALT is a four-step method that is designed to help people who are first to arrive at the scene of an accident to manage the casualties. The SALT triage method aims to move the casualties away from the scene of the accident to safer areas where they can receive treatment.

SALT stands for:

Step 1: **S**ort

Step 2: **A**ssess

Step 3: **L**ifesaving interventions

Step 4: **T**reatment and transport

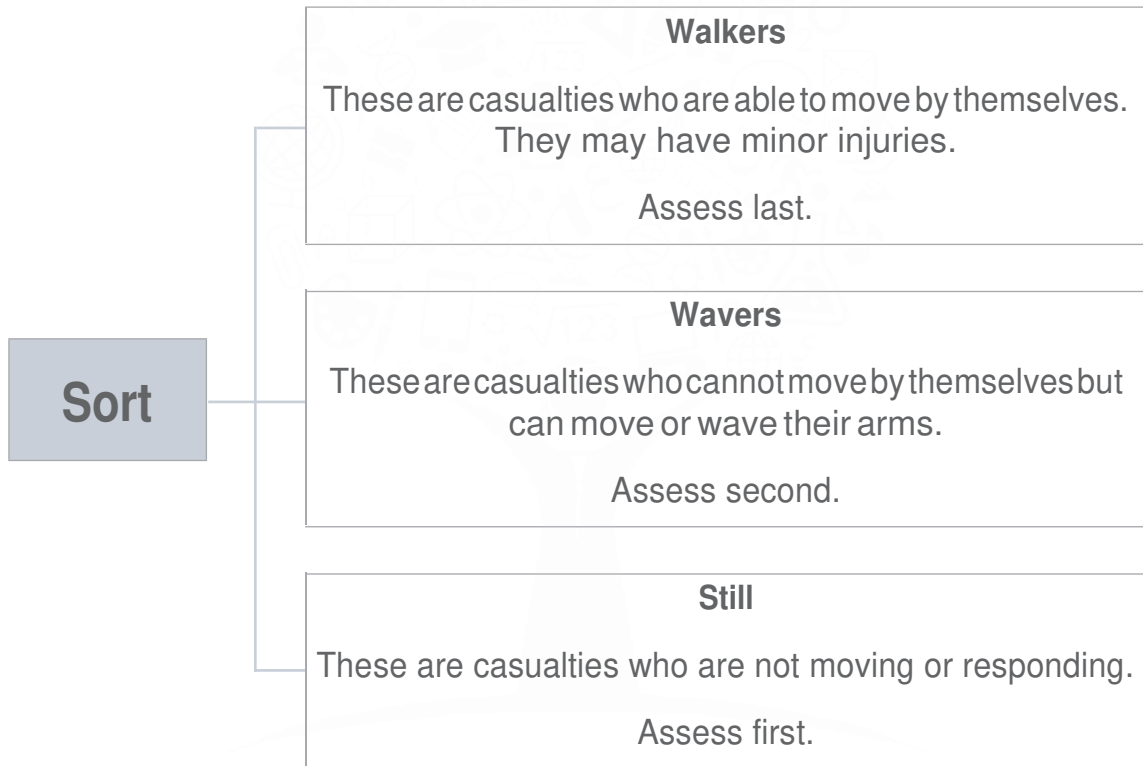


9.3 Triage

Step 1: Sort

Step 1 of SALT is to sort the casualties into those who are most in need of treatment.

The casualties should be sorted into three groups, the walkers, the wavers and the still.



Example

Using the SALT triage method, somebody who is seriously injured and not moving should be assessed first. They are likely to die without immediate medical treatment.

A person who cannot move because of an injury such as a broken leg should be assessed second. Their injury is serious, but they are not likely to die.

Somebody with a minor injury such as a small cut on their arm who is walking around should be treated last.

Step 2: Assessment and Step 3: Lifesaving interventions



Keyword

assess

to make a judgement about something, for example, how serious an injury is

Step 2 of SALT Is to assess the casualties, and Step 3 is to make lifesaving interventions. These two steps are done together because when a casualty is being assessed, they may need a lifesaving intervention.



Keyword

lifesaving intervention

treatment given to an injured person that could save their life



Follow these steps of casualty assessment and interventions:

- ☛ Quickly check each injured person. Check their airway and breathing.
- ☛ If they have injuries that could cause them to die, give immediate first aid. This could be giving CPR or stopping severe bleeding.
- ☛ After you have given first aid, move onto the next person.
- ☛ Try to spend less than a minute with each casualty so that you have time to deal with all the injured people.

9.3 Triage

Categorising casualties based on their injuries



Keyword

categorise

to put someone or something into a group of similar people or things

When assessing casualties, they should be given a category based on their injuries. The categories are red, yellow, green or black.

Below is how to categorise casualties with different injuries.

RED: Immediate

The most serious casualties who have severe life-threatening injuries should be classed as 'red'. These people will die if they are not treated first.



Life-threatening conditions include:

- ” cardiac arrest.
- ” major burns.
- ” major trauma injuries.
- ” uncontrollable bleeding.

YELLOW: Delayed

Yellow is for people who have serious, but not life-threatening injuries. These people cannot usually move by themselves.



Examples of these casualties include those with:

- ” broken bones.
- ” minor amputations such as missing fingers/toes.
- ” flesh wounds.
- ” possible head injury (confusion/don't know who they are).

GREEN: Minor

Green is for people who have minor injuries. They can move by themselves and do not show any signs of head injuries or confusion.

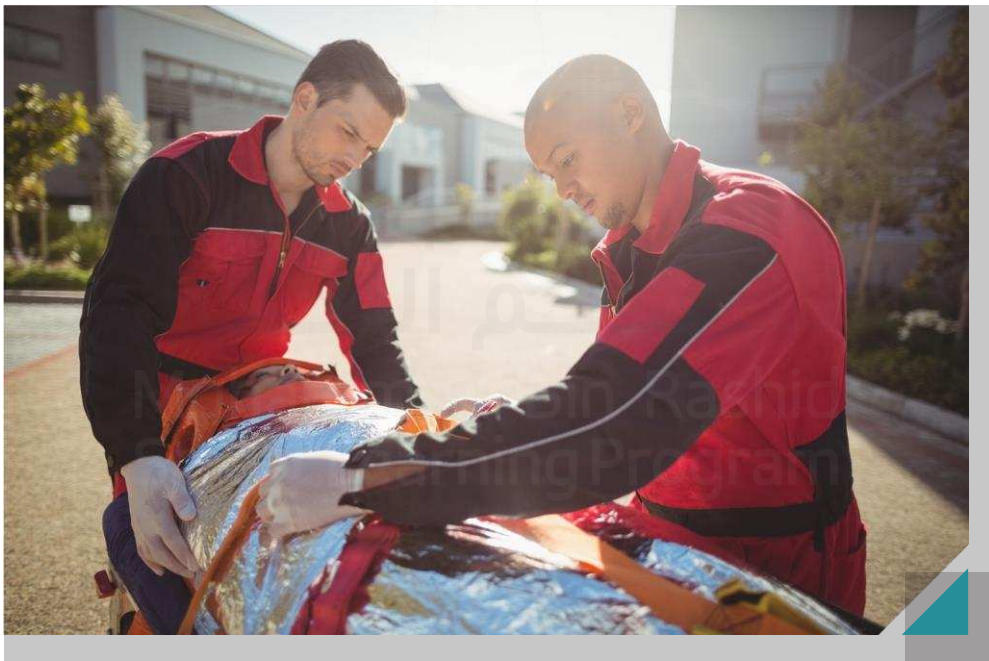


Examples of minor injuries include:

- » minor cuts.
- » minor fractures, for example, broken fingers.
- » minor burns.
- » sprains.

BLACK: Dead or expected to die

This category is for people who have already died or will die soon. They will have injuries that are too serious to survive, even with medical attention. These people will not receive any treatment.



9.3 Triage

Step 4: Treatment and transport

Once the casualties have been assessed during step 3 and put into one of the four categories, the next step of SALT is to treat them and transport them to hospital.

Treatment areas

Areas can be set up to treat three categories of casualties: red, yellow and green. Remember the 'black' category of casualties will not receive any treatment.

The casualties will be moved into one of the four areas after their condition has been assessed during stages 2 and 3.

Instruct any available first aiders to go to the treatment areas. They must be ready to treat any casualties who are sent to them.

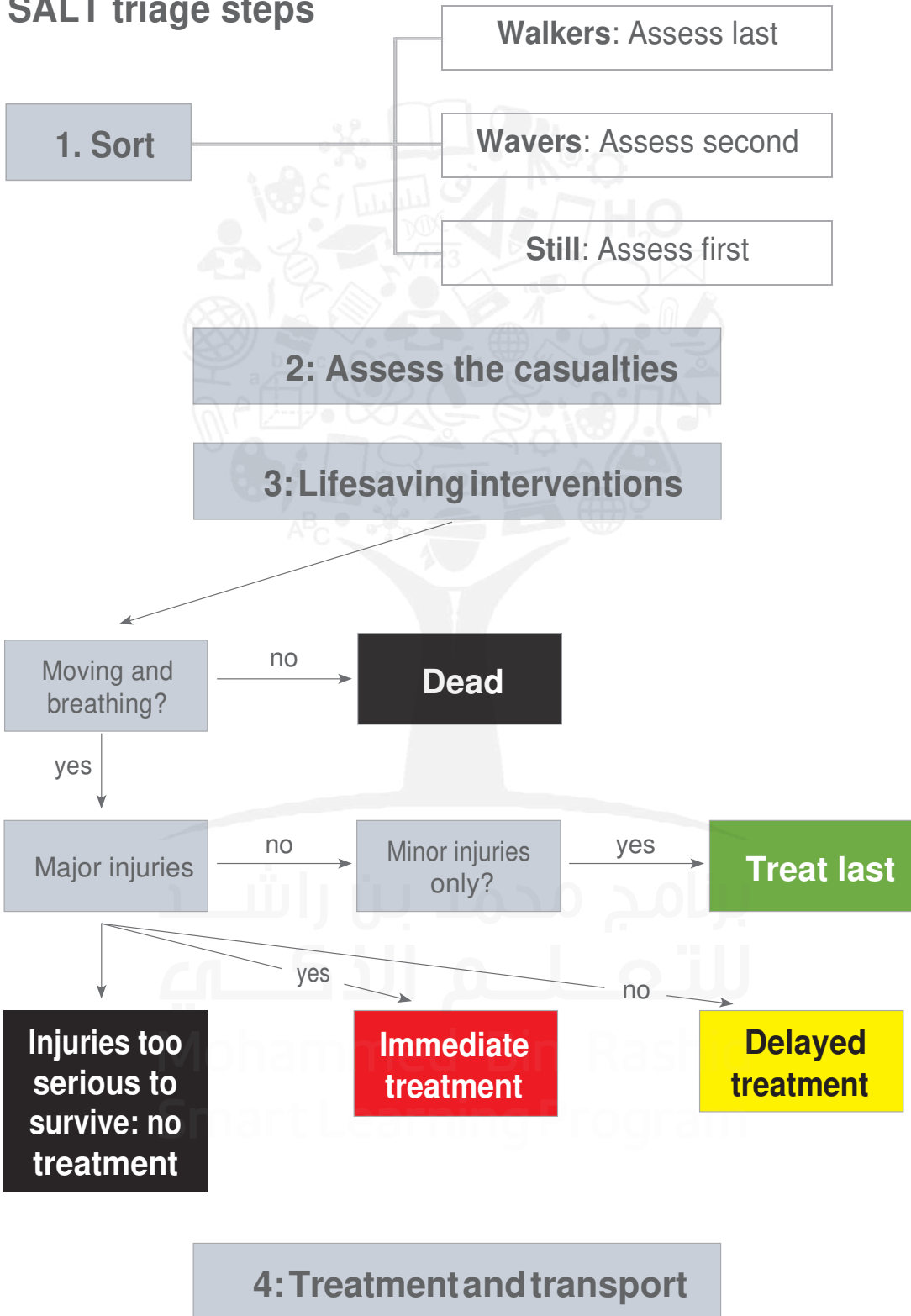


Transport

When the emergency services arrive, let them take over. Show them the areas that you have created. Let them know what treatment the casualties have been given.

The emergency services will decide if the casualties need to be transported to hospital by ambulance.

SALT triage steps



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9.4 Actions to take during a disaster



What is a disaster?



Keyword

disaster

an unexpected event that hurts or kills people and causes a lot of damage



Discussion: Identify different disasters

Discuss different types of disasters. Remember that they can be natural or man-made.

Disasters can happen at any time, often without any warning. Being prepared for emergency situations can help to prevent injuries or loss of life. Knowing what to do if a disaster happens makes you a valuable member of your family, community and country.



Research: Natural disasters in the region

Research some of the natural disasters that can occur in the United Arab Emirates and the surrounding areas.



Earthquakes



Keyword

earthquake

a shaking of a part of the Earth's surface that often causes a lot of damage

An earthquake is a sudden violent shaking of the ground, because of movements within the earth's crust.

It is not the shaking that is dangerous. It is the effect that the shaking has on everything around it. Earthquakes can cause:

- ▄▄ buildings and other structures such as bridges to shake and fall.
- ▄▄ roads to split or crack.
- ▄▄ landslides and rockfalls in mountain areas.
- ▄▄ massive waves called tsunamis if an earthquake happens under the sea.



Did you know?

UAE earthquakes

In 2019, the UAE experienced 21 earthquakes. Most of these were too small to feel, but some areas reported feeling tremors and experienced buildings shaking.

9.4 Actions to take during a disaster

Actions to take during an earthquake

During an earthquake, you can follow these steps to remain safe.

Stay calm

Try to stay calm and remember any disaster training you have had. Staying calm will help you to think clearly and make quick decisions.

Stay where you are

Trying to move in an earthquake is dangerous. The ground is moving and you can easily fall or be injured by falling objects. It is much safer to stay inside and get under a table.

Use the 'Drop, Cover and Hold' technique

1. Drop

Drop down to the floor before you are knocked down. If the earthquake is strong, it might cause you to fall over. It is better to get down straight away rather than risk being injured if you fall down.



2. Cover

You must try to protect your body from falling objects. It is most important to protect your head. Immediately cover your head with your arms and then look for cover. Look around for anything that is strong enough to protect you such as a strong desk or table.



3. Hold

Once you are in a safer area, hold on. The shaking could go on for a long time. It could also move you from under the desk or table, putting you in danger again.



Think

The actions to take during an earthquake can be used if you are in a building during an explosion.

Floods

The United Arab Emirates sometimes experiences storms and heavy rain. This can lead to flash floods.



Keyword

flash flood

a sudden flood, often caused by heavy rainfall

Flash floods can be very dangerous because they can happen so quickly that people are caught off-guard. They can be life-threatening if people encounter high, fast-moving water while travelling in a car.



Driving during a flood

Travelling on roads can be very dangerous during heavy rainfall and flooding. Extreme weather like this is the cause of many accidents and even deaths on UAE roads.

Follow these tips if you are travelling in a car during a storm or flood.

1. If possible, do not drive into an area where heavy rain or flooding is predicted. Find another road to reach where you are going.
2. If you can't see the road in front of you because of heavy rain, pull over to the side of the road and stop somewhere safe.

9.4 Actions to take during a disaster

3. Do not drive through water that is more than 10cm deep. If water reaches the engine of your car it can damage it and make your car stop.
4. If you must drive through shallow (not deep) water, drive through it slowly. Remember, do not let the water reach the height of the car's engine.
5. Once you are through the water, check your car brakes to see if they are still working as the water could have damaged them.

Wadi floods

A wadi is a valley in the mountains. During heavy rainfall, wadis can flood and this can be very dangerous. The flood can happen very quickly and can be strong enough to wash cars away and kill people.



Did you know?

In 2020, four people were killed when a flash flood swept away three cars that were travelling near Wadi Al Helo in Sharjah.

Wadi flood safety

The United Arab Emirates government has published advice for people to take if they are near a wadi and heavy rain is expected.

- » Watch for weather changes, listen to weather forecasts and check official media and social media websites for warnings.
- » Stay away from the area of wadis if it is raining.
- » Do not walk by, or try to cross, fast-flowing or high water.
- » Do not park your car in valleys or near wadis if it is raining.
- » Call 999 if there is an emergency.



Sandstorms



Keyword

visibility

how far you are able to see because of weather conditions

A sandstorm happens when very strong winds blow sand around in desert countries. The sand and dust can be harmful to health. However, the most dangerous effect of sandstorms is that they cause reduced visibility on roads which can lead to accidents.



Discussion: What to do during a sandstorm

What do you think you should do to protect yourself during a sandstorm?
Discuss in small groups.



Actions to take during a sandstorm

The UAE has this advice about sandstorms.

- ”” If possible, stay indoors. Close your windows and turn off the air conditioning. Stay away from windows and doors.
- ”” If you are outside, cover your nose and mouth to protect you from the sand and dust.
- ”” If you are driving, turn on your lights, close the windows and turn off the air conditioning.
- ”” Drive slowly. If the visibility is so low that you can no longer see, stop your car somewhere safe.

9.5 Actions to take after a disaster



After a disaster



Discussion: What should you do?

What things should you do or not do after a disaster? Discuss with your class.

Following a disaster, there will still be many dangers and hazards present. In the next few minutes and hours, you must remain safe so that you can begin to help other people.

If you are inside a building

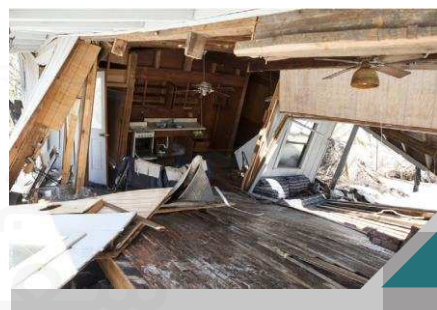
If you are inside a building which has collapsed during a disaster such as an earthquake or an explosion, you should make your way outside as soon it is safe.

Falling hazards

The biggest danger of injury or death when you are inside a building, during or after a disaster, comes from falling hazards. Try to stay away from things that could fall and injure you.

Examples of falling hazards inside buildings include:

- ” building walls
- ” air conditioning units
- ” furniture
- ” light fittings
- ” TVs and smartboards
- ” glass windows



Avoid the kitchen

In the kitchen, there are many hazards such as knives and other sharp objects that could injure you. Gas is dangerous as it could ignite and cause a fire.

Do not go into the kitchen if possible.

If you are outside



Think

Can you think of anything outside that could be dangerous after a disaster?

Outside, many things could fall and cause injury. These can be man-made or natural.

Examples of outdoor falling hazards include:

- ” streetlights
- ” power lines
- ” bridges
- ” road signs
- ” trees
- ” falling rocks/landslides



Go to a safe area

Once the disaster is over, move carefully to a safe, clear area. Make sure it is away from dangers such as fires, collapsed buildings or falling hazards. Instruct other people to move to the safe area. Once there, wait for help from the emergency services.



9.5 Actions to take after a disaster



Stay away from busy roads

After a disaster, try to not run into the road. People who are driving may be panicking or unable to stop their cars or vehicles. Also, if cars are damaged or have crashed, they may be on fire.

Aftershocks

Aftershocks are smaller earthquakes that normally happen after an earthquake. They might make already unstable buildings collapse. Be ready to 'Drop, Cover and Hold' at any time.

Get help

Call 999. The emergency services should already be aware that there has been a disaster. Listen to a radio or check the internet to see what they advise you to do.



Help other people

If injured people are around you, use triage to decide who to treat first. If you are qualified, you could give first aid. Use the skills you have learned in this unit to provide help to others.

Moving casualties

In most situations, you should not move casualties. If the person has a head, neck, back or spine injury, moving them could cause further injuries. You should wait for the emergency services to arrive.

You should only move a casualty if their life is in danger or if they need life-saving treatment.





Further information

Driving during and after a disaster

If you are driving during a disaster take these actions.

”” Stop as soon as you can.

Pullover as soon as it is safe. Try to stop in a clear and open space. Do not stop in the middle of the road as you may block the emergency services when they are trying to reach the scene.

”” Stay in the vehicle.

Your car will provide some protection from falling power lines or other hazards. If it becomes too unsafe to stay in your car, try to find an open space to move to.

”” Avoid all structures.

Do not stop next to any buildings, under bridges, flyovers or powerlines. They could collapse on your car.



Once it is safe to move your car:

”” If you see any cracks or bumps in the road, do not drive over them as they could collapse.

”” Buildings can collapse hours or even days after an earthquake. Try to park away from any buildings.

”” The emergency services will need to use the roads to get to the scene of the disaster. Try not to add to the traffic that could block the roads.