Unit 8 Serious Incidents

Learning Outcomes

By the end of this unit the learner will be able to:

- ✓ React confidently, calmly and appropriately in a variety of emergency situations
- ✓ Know exactly what kind of first-aid to provide upon encountering a casualty
- ✓ Understand the most common signs and symptoms of serious injuries and illnesses

Unit 8

Serious Incidents

The UK's HSE recently published a series of shocking figures about the prevalence of serious accidents, injuries and illnesses in the workplace:

- **1.6 million** working people suffering from a work-related illness
- **2,369** mesothelioma deaths due to past asbestos exposures (2019)
- **142** workers killed at work (2020/21)
- **693,000** working people sustain an injury at work according to the Labour Force Survey
- **65,427** injuries to employees reported under RIDDOR
- **38.8 million** working days lost due to work-related illness and workplace injury
- **£16.2 billion** estimated cost of injuries and ill health from current working conditions (2018/19)

Source: HSE 2019/2020

Many injuries and events only necessitate basic first aid, but others necessitate additional assessment and treatment. A small cut is relatively simple to treat, but a serious life-threatening wound like a gunshot wound necessitates additional considerations. On any given day, you could be the first to witness a motor vehicle accident, witness an accident that resulted in a spinal injury, or witness a family member suffering from a stroke. To prevent further injury and save lives, it's critical to understand how to recognise the severity of all injuries and respond quickly, carefully, and efficiently.

Bleeding

Bleeding occurs when a blood vessel or vessels are damaged. External bleeding, such as from a cut or wound, or internal bleeding, such as when the skin isn't broken but the blood vessels inside the body are damaged. Depending on the type of vessel that has been damaged, there are three different types of bleeding. Arterial bleeding is bright red blood that gushes out of damaged arteries in a jet with each heartbeat. Venous bleeding is caused by damaged veins and results in a dark red blood loss that may or may not be severe but bleeds continuously. Capillary bleeding occurs when tiny blood vessels throughout the body bleed, resulting in only minor blood loss. The severity of any injury is determined in part by the depth of the cut, the amount of bleeding, the time it takes to stop the bleeding, and the type of blood vessels damaged. There is a risk of infection with any bleeding injury, especially if the injury results in a foreign object becoming lodged in the wound.

First Aid for Bleeding

Even if the blood loss isn't severe, some people have a hard time dealing with the sight of blood, which can cause them to act irrationally, faint, or even go into shock.

1. Even if it necessitates mundane conversation, try to keep the person as calm as possible.

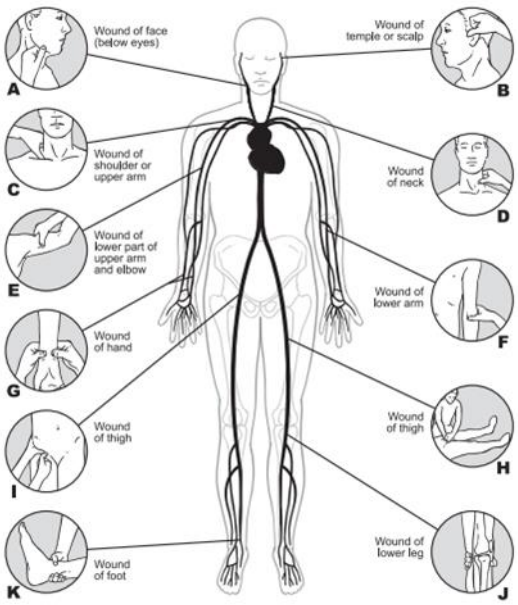
2. Remember to keep an eye on the person's ABCs and have him lie down if necessary.
3. Except for those caused by an object such as glass or those with protruding bone, apply direct pressure to most bleeding wounds. Press down firmly on either side of the object for those types of wounds, keeping the injured body part above the level of the heart.

Controlling Severe Bleeding

Arterial bleeding can be fatal and is notoriously difficult to control. Applying direct pressure is the first and most effective way to stop bleeding. To do so, you'll need to:

1. Cover the wound with a sterile dressing or a clean cloth and tape it down, or tie something around the wound just tight enough to stop the bleeding.
2. If the bleeding does not stop, cover the wound with another dressing or apply direct pressure as described below.
3. Once a dressing has been applied to a severe wound, it should never be removed.
4. To help control bleeding, elevate an injured arm, leg, or head above the level of the heart.
5. If you suspect a broken bone (fracture), do not elevate or move an area of the body until you have applied a splint as described in Chapter 9 and are certain that movement will not cause further injury.

When direct pressure and elevation are ineffective in controlling bleeding, indirect pressure can be used by applying pressure to the appropriate pressure point. Pressure points are places on the body where you can control blood flow by pressing an artery against an underlying bone with your fingers, thumb, or heel. Pressure points should be used with caution because they may cause injury to an extremity due to insufficient blood flow caused by nearby pressure. Never apply pressure to the pressure points on the neck (carotid) because it can reduce or stop blood flow to the brain, as well as cause cardiac arrest.



Pressure points on the body

The two main pressure points most commonly used are in the groin and upper arm. The femoral artery runs from the lower abdomen to the thigh, with the pressure point being the front, centre part of the groin crease, which supplies the majority of blood to each leg. Locate the pulse on the inner part of the thigh and press it up against the pelvic bone to find this artery. The brachial artery is located on the inside of the upper arm, just below the bicep, approximately halfway between the shoulder and elbow. Using your fingers or thumb, apply pressure to the inside of the arm over the bone. Place the injured person on her back, kneel on the side opposite the wounded leg, press the heel of your hand directly on the femoral-artery point, and lean forward to apply pressure if there is severe bleeding in the thigh and lower leg. If the bleeding persists, press directly over the artery with the flat surface of your fingertips, applying additional pressure on the fingertips with the heel of your other hand.

Tourniquets should only be used when bleeding is uncontrollable by other means. They can cause tissue damage and loss of extremities. You can use any piece of cloth folded to about three inches wide and six to seven layers thick, such as a strap, belt, necktie, towel, or any other piece of cloth folded to about three inches wide and six to seven layers thick. Never use anything that could sever your skin, like wire or cord.

To apply a tourniquet, follow these steps:

- Place the tourniquet between the heart and the wound, keeping the proper pressure point and allowing two or more inches of skin between the tourniquet and the wound.
- Cover the artery with a pad or a roll of gauze.
- Wrap the tourniquet twice around the extremity and tie a half-knot on the upper surface (the first step in tying a shoe lace).
- Finish the knot by placing an object, such as a small stick, on the half-knot (square knot).
- Gently twist the stick to tighten it until the bleeding stops, then secure it.
- Do not cover the tourniquet.
- Draw a “T” on the person's forehead with a marker (such as lipstick) to indicate that a tourniquet was applied.

Internal Bleeding/Blunt Trauma

Losing blood inside the body can cause insufficient blood flow to the tissues and organs, as well as dangerously low or no blood pressure due to a lack of blood or plasma, a condition known as hypovolemic shock, which can lead to death if left untreated. Internal bleeding can be caused by things like car accidents and domestic violence, which can result in internal trauma and fractures; bleeding duodenal or gastric ulcers; brain haemorrhage; and ectopic pregnancy, to name a few (pregnancy occurring outside the uterus that is life threatening and requires immediate medical attention).

Internal bleeding is most commonly caused by blunt trauma, a violent force such as in car accidents, or puncture wounds such as knife or gunshot wounds. If you notice signs of shock, you should suspect internal bleeding.

The following are some of the more common signs of internal bleeding:

- Bruises (contusions), which could indicate more serious injury
- Anxiety and agitation
- Uncontrollable thirst
- Vomiting and nausea
- Excessive breathing (tachypnea)
- Skin that is cold and clammy
- Skin that is pale, ashen, or bluish
- A fast, sluggish pulse (tachycardia)
- Any bruising or discoloration around the injury site
- Blood in the stool, or a black, tar-like stool
- Urine with blood
- An abdomen that is swollen and distended (bloated).
- Vomiting that is a dark red colour (resembling coffee grounds)
- Suffering from a loss of consciousness
- Extensive headache

First Aid for Internal Bleeding

To treat internal bleeding, follow these steps:

1. Reduce pain and swelling by applying a cold pack or ice pack wrapped in a cloth to bruises.
2. If there is no chest injury, dial 999 and place the injured person with their legs elevated.
3. In the event of a chest injury, keep the person warm by elevating the head and torso until help arrives.
4. As described in Chapter 2, deal with the shock.
5. Allow the person to eat, drink, or take medication only if a doctor has given you permission.

Penetrating Trauma

While gunshot wounds were once only seen on television, it's a sad but true fact that these potentially fatal wounds are becoming more common in everyday life. Although you don't want to be involved in or witness a gunshot incident, knowing what to do in the event of one is critical in order to save a limb or even a life. Penetrating trauma includes gunshot wounds and injuries caused by stabbing with knives, among other things.
Gunshot wounds and stab wounds, as well as other types of object impalements, cause penetrating trauma when an object pierces the skin or enters the body's tissue. Penetrating injuries can range from superficial punctures to penetration of major body systems, with the speed (velocity) of penetration indicating the severity of the injury.

First Aid for Penetrating Trauma

Gunshot wounds are treated similarly to other puncture wounds such as knife wounds. Remember to consider your own safety as well as the safety of anyone else who may be responding. It's important to remember that the type of object used, the location and depth of penetration, and the number of wounds all play a role in determining the severity of a penetrating injury. Knives and ice picks inflict low-energy injuries due to their close

proximity, but one stab wound to the centre of a person's chest, neck, or head with a large knife is clearly much more serious than many stab wounds to an arm or leg with a small knife.

Always suspect spinal injuries in any penetrating injuries to the head, chest, or neck, or any wound that causes a person to fall, and stabilise and protect the neck by keeping the head firmly in place in line with the body.

Any potentially ominous symptoms, such as shortness of breath and skin turning blue, as well as pain in the chest and or back, should be noted in the case of chest wounds.

Spinal Injury

Because spinal cord injuries are frequently linked to dangerous situations like traffic accidents, falls, rock slides, and avalanches, it's critical that you double-check the scene's safety before assisting. To determine the injured person's level of consciousness, dial 999 and, after assessing for ABCs, ask them their name, if they know where they are and what time it is, and if they remember what happened. A wrong answer to the first three questions indicates a possible head injury as well as a spinal-cord injury.

Any signs of drug or alcohol abuse, as well as any other injuries that cause the person enough pain to ignore spinal discomfort, must be considered. If you press lightly on a fingernail on each hand and a toenail on each foot and don't see pink colouring return after two seconds, you may have lost circulation due to a spinal injury. Inquire about the person's ability to move his fingers and toes, as lack of movement or difficulty moving indicates a spinal injury. When gently squeezing the fingers and toes, numbness or tingling can indicate a possible spinal injury.

If you have any doubts, assume you have a spinal-cord injury. Stabilize the neck by remaining at the injured person's head and gently but firmly holding the neck immobile with one hand on each side of the head. If you need to move the person for any reason, follow the steps in Chapter 2 to logroll the person. Until help arrives, keep the injured person's neck stabilised.

Poisoning

A poisonous substance can be injected, inhaled, come into contact with, or swallowed by a person. Exact figures are hard to come by, but according to the CDC, about 2.5 million poisonings are reported in the United States alone each year. A package that doesn't have a warning label isn't always safe. Although poisoning symptoms can take time to appear, if you suspect someone has been poisoned, don't wait for them to appear; get them medical help right away.
Many common household items, such as medicines (for example, an aspirin overdose), household detergents and cleaning products, carbon monoxide, some houseplants, paints, insecticides, chemicals, and even some foods, can poison a person if they are exposed inadvertently. Symptoms vary depending on the poison, but they may include:

- Pain in the abdomen
- Lips that are bluish
- Chest discomfort
- Confusion

- Cough
- Diarrhea
- Breathing problems
- Distorted vision
- Dizziness
- Drowsiness
- Fever
- Headache
- Palpitations in the heart
- twitching of muscles
- Vomiting and nausea
- Tingling and tingling
- Numbness
- Seizures
- Burns and rashes on the skin
- Stupor
- Consciousness loss
- Unusual breath odour
- Weakness

First Aid for Poisoning

If you suspect poisoning, take the following steps:

1. Check for ABCs, call 999, begin rescue breathing and CPR if necessary
2. Identify the poison and do not force the person to vomit unless the operator advises you to.
3. Take steps to clear the person's airway if they vomit on their own, but wrap a cloth around your fingers before sweeping out the mouth and throat.
4. If the person begins to have a seizure, lay them down gently on a soft surface to protect them from injury. Instead of restraining the person, turn his or her head to one side to keep the airway open.
5. Until help arrives, roll unconscious people onto their left side in the recovery position (see Chapter 2).
6. If poison has been spilled on the person's clothing, remove it and flush the skin with water.

In the case of inhalation poisoning, dial 999 and, if safe, remove the person from the gas, fumes, or smoke. To get rid of the fumes, open all the windows and doors and hold your breath or cover your nose and mouth with a wet cloth.

Drug Overdose

When more medication is taken in higher doses or at a higher frequency than the body can metabolise, it is called a drug overdose. Some overdoses are unintentional, while others are deliberate. Overdosing can also occur when prescription medications are mixed with street drugs and alcohol. Overdose symptoms vary depending on the drug used:

- Speech that is slurred

- Breathing problems (slow or fast)
- Coordination problems
- Extremely cold or extremely hot body temperature
- Pupils that are small (pinpoint) or enlarge
- Face flushed and red
- Sweating
- Drowsiness
- Delusions and hallucinations
- Consciousness loss
- Death

First Aid for Drug Overdose

If you suspect someone is suffering from a drug overdose, administer the following first aid:

1. Check for ABCs and, if necessary, begin CPR.
2. Manage for shock and seizures.
3. Place the person who is unconscious in the recovery position.
4. Any serious or life-threatening symptoms, concerns about the person's safety, or possible self-harming intent should be reported to 999.

Do not attempt to make the person vomit. Even if the person appears to be fine, contact the emergency services. Look for pill bottles or drug paraphanelia to see what the person has taken so you can give medical providers accurate information and the bottles or paraphanelia.

In the event of violent or irrational behaviour, dial 999 and ensure your own safety. Expect a drugged person to be irrational, and don't try to reason with her—call for help. Keep your emotions and opinions separate from your actions; you don't need to know why; all you need to do is provide first aid.

Near Drowning

Suffocation (severe oxygen deprivation) from being submerged in water that does not result in death is defined as near drowning. Drowning is the term for when someone drowns. Near-drowning symptoms include the following:

- Alert, but on the verge of falling asleep
- Person is unable to breathe, gasping for air, coughing, or wheezing
- Vomiting
- Lips and ears are bluish in colour (cyanosis)
- Pale complexion
- Skin that is cold

First Aid for Near Drowning

In the event of a near-drowning, take the following precautions:

1. If the person is unconscious, rescue breathing should be started as soon as possible, preferably while the person is still in the water.

2. If possible, have someone else dial 999 while you start rescue breathing.
3. Get the person to a safe place on land, lay him down on his back, and keep rescue breathing going, starting CPR if necessary.

Water gushing from their mouth comes from their stomach, not their lungs, and you'll need to turn them over with a log roll to allow the water to drain. Vomiting is also a possibility. Even if you believe the person has been under water for a long time, performing CPR and/or rescue breathing immediately increases the chances of survival and reduces the likelihood and severity of any brain damage.

To avoid aggravating any spinal injury, try to stabilise and immobilise the neck. Remove any wet clothing, wrap him in warm blankets, and get him to a hospital as soon as possible, regardless of how quickly you revive him or how well he feels.

The length of time a person is submerged in water, the temperature of the water (cold-water accidents may have a better outcome), the person's age (children have better outcomes than adults), and how quickly resuscitation begins are the most important factors in a person's survival without permanent brain and lung damage. Near drowning while under the influence of alcohol increases the risk of death or brain or lung damage.

Carbon-Monoxide Poisoning

Carbon monoxide is a colourless, tasteless, and odourless toxic gas that, when inhaled, can cause fatigue, headaches, and dizziness, as well as death in large doses. When carbon monoxide is present in the air, oxygen-carrying cells will carry the carbon monoxide instead of oxygen, causing the cells to become saturated with the gas and unable to deliver needed oxygen. That's why carbon-monoxide detectors, which can alert you to dangerous levels, are so important.

Because homes are often sealed up tight against the cold and may be poorly ventilated, the majority of carbon monoxide poisoning cases in homes occur at night during the winter months. Incomplete combustion of carbon-containing compounds in fireplaces, space heaters, forced-air gas furnaces, appliances, and motor vehicles that use charcoal or fuel produces carbon monoxide gas. If you have any nonelectric appliances in your home, such as a gas stove or water heater, or if you have an attached garage, you are also at risk.

Common symptoms of carbon-monoxide poisoning include:

- Weakness
- Headaches and dizziness
- Feeling light-headed
- An inability to focus
- Difficulty in getting around
- Chest discomfort
- Nausea
- Headache
- Breathing problems
- Seizure
- Coma

- Irritability and lethargy

First Aid for Carbon-Monoxide Poisoning

In the event of carbon monoxide poisoning, take the following steps:

1. If you happen to wake up with symptoms of carbon monoxide poisoning, immediately fall to the ground and crawl to an exit.
2. If you can't safely get them to fresh air, call 999, and don't try to rescue anyone without the proper oxygen delivering masks.
3. Get out into the fresh air as soon as possible, and make sure you're upwind of the house.
4. Relax any clothing that is too tight around your neck and waist.
5. Maintain an open airway and begin CPR or rescue breathing if a person loses consciousness after going outside.

Even if you feel fine, call 999 in any case of carbon monoxide poisoning to get a proper assessment and, if necessary, oxygen.

Further Reading:

- ✓ Incident Response & Computer Forensics, Third Edition 3rd Edition by Jason T. Luttgens (Author), Matthew Pepe (Author), Kevin Mandia (Author)
- ✓ Patient Safety: Investigating and Reporting Serious Clinical Incidents 1st Edition, Kindle Editionby Russell Kelsey
- ✓ Serious Incident Prevention: How to Sustain Accident-Free Operations in Your Plant or Company 2nd Edition, Kindle Editionby Thomas Burns