

**Module:** Public Health Disaster Planning for Districts

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**Resource Title:** Session 2.4d: Demonstration on First Aid Treatment

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After Conducting Triage, the next step is **First Aid Treatment**

We shall now have a 30 Minute demonstration on key considerations in First Aid Treatment from a Red Cross Volunteer if possible.

If there is no volunteer, then refer to the **Reader on Principles of First Aid** and read up the following as a take-home assignment:

- What is first aid?
- Principles of First AID Practice
- Summary of Procedures
  - Resuscitation
  - Wounds
  - Burns
  - Fractures and dislocations
  - Strains and sprains
  - Nosebleeds
  - Tooth knocked out
  - Convulsions, Epileptic Fits
  - External bleeding
  - Fainting
  - Chocking
- Other important procedures and issues in first aid

## Reader: Principles of First Aid

### What is first aid?

First aid is the immediate care of an injured or suddenly sick person before definitive medical treatment can be accessed. It is the care a person applies as soon as possible after an accident or sudden illness

First aid is an important part of everyday life, both at home, work or at play.

**Everyone should learn first aid and be willing to administer basic care until emergency assistance arrives.**

Not every incident requiring first aid is a life-and-death situation.

First aid knowledge is commonly used to manage minor injuries at home or work

This prompt care and attention prior to the arrival of the ambulance can sometimes mean the difference between life and death, or between a full or partial recovery

### The main aims of first aid are to:

1. Preserve life - This includes the life of the casualty, bystander and rescuer.
2. Protect the casualty from further harm - Ensure the scene is safe.
3. Provide pain relief - This could include the use of ice packs or simply applying a sling.
4. Prevent the injury or illness from becoming worse - Ensure that the treatment you provide does not make the condition worse.
5. Provide reassurance

It is important to understand that first aid has its limitations and does not take the place of professional medical treatment

### Principles of First AID Practice

It generally consists of series of simple, sometimes life saving, medical techniques, that an individual can be trained to perform with minimal equipment.

- The principle of first aid is immediate action, but it is essential that quick action does not cause panic.
- Any action taken needs to be careful and deliberate and the first-aider must remain calm at all times.
- It is equally important to assess the situation quickly, to appreciate the limitations of your own actions and to seek expert assistance (e.g. calling 999 when necessary for ambulance, fire brigade, or police) as soon as possible.
- The first priority is to yourself and others - protect the scene after assessing risk, and think before you act (there may be gas - risk of asphyxiation/explosion, electricity - the pool of water round the faulty washing machine may be live, fire - opening a hot door may be the last thing you do, assault - the assailant with knife or gun may be behind the

door awaiting his next victim or a hostage, blood - avoid unnecessary contact with body fluids by wearing gloves)

### **Importance of Immediate action**

Taking immediate action is the essential principle in first aid. Bystanders or relatives may not recognize the basic symptoms of an injury or illness and may wait hours before calling for help. Often people are worried about “doing the wrong thing”, so don’t attempt any first aid at all. If a person is sick or injured, then they need help, and they need it immediately.

It is important that prompt action does not lead to panic, and the first aider should form a plan of action. Careful and deliberate action undertaken without too much delay is most beneficial to the casualty. Try to remain calm and think your actions through. A calm and controlled first aider will give everyone confidence that the event is being handled efficiently and effectively.

Each emergency is different, so it is impossible to provide you with a precise list of things you need to do for every emergency. However, if you follow the ‘principles of first aid’ as outlined, you should deliver appropriate care, even if you are not sure of what the underlying problem is.

### **Getting help**

Call for immediate help

### **First aid hygiene**

It is important that first aid procedures have due regard for the danger of cross-infection. Simple rules of personal hygiene and wearing gloves are sufficient to guard both the first aid provider and the casualty from contamination when treating or caring for a casualty.

## **Summary of Procedures**

### **1. Resuscitation**

A casualty who is not breathing effectively, or is bleeding heavily, requires immediate aid. Prompt effective first aid gives the casualty a much better chance of a good recovery.

#### **Checking for danger**

Check for danger to others, casualty and self. If the person is unconscious and there is a possibility that the neck, head or back may be injured do not move the person except if the person is in impending danger.

- Ask for casualty’s name, squeeze shoulders gently and check for response.
- Make sure the airways are open and clear of any objects. Be sure to remove any foreign objects or teeth. Place casualty in recover position, open and clear airways.

### **Listen for breathing**

By putting one hand on the forehead and one on the chin, tilt the head back. Listen or feel for any breathing by placing your head near the casualty's mouth and see whether the chest is rising and falling.

### **Assisted Breathing for adults**

If the casualty is not breathing, cover the nostrils with your thumb and index finger. With the head still tilted back take a deep breath and seal your mouth over the casualty's mouth. Exhale two full breaths, each lasting 1.5 to 2 seconds. Remove your mouth between breaths to permit the casualty to exhale.

### **Assisted Breathing for small children**

If the casualty is not breathing, close both mouth and nose. Exhale two full breaths, each lasting 1 to 1.5 seconds for children ages 1 to 8. Remove your mouth between breaths to permit the casualty to exhale.

### **Check for a response**

Check to see whether the chest is rising with each breath. Check the pulse: place two fingers on the neck alongside the Adam's apple and one hand on the forehead and push down to feel for a pulse for approximately 5 to 10 seconds.

### **Continue assisted breathing**

Carry on with the breathing-if you do feel a pulse: 12 breaths per minute (two breaths every 5 seconds) for adults and children over 8 or 20 breaths per minute (two breaths every 3 seconds) for children ages 1 to 8. If you don't feel a pulse, start chest compressions

### **Chest compressions**

To locate the breastbone put your fingers in the center of the chest where the ribs join and measure two fingers' width above the bottom of the breastbone. Put the lower part of your hand there and place the other hand on top of the first one. To provide extra pressure interlock your fingers. Only use one hand for compressions if children are aged 1 to 8.

### **Carrying out technique**

Softly push downward using the lower part of your hand; keeping your shoulders above your hands and your elbows locked straight. In 15 quick, smooth thrusts, push the chest 4 to 5 cm down (for adults and children over 8). In 5 quick, smooth thrusts, push the chest 2.5 to 4 cm down (for children ages 1 to 8). Let the chest rise between thrusts however do not take your hand away from the chest. Count aloud as you go. Breathe two breaths into the casualty's mouth.

- For adults and children over 8:
  - 15 chest compressions; 2 breaths x 4
- For children ages 1 to 8:
  - 5 chest compressions; 1 breath x 20
  - Check for a pulse
  - If there isn't a pulse, continue alternating between compressions and breaths.
  - Every minute or so check the pulse
  - Carry on until the casualty has a pulse and starts breathing again or until medical help arrives.

## 2. Wounds

### Types of wounds

Name	Description
<b>avulsion</b>	In an avulsion, a portion of skin is torn. This can be partial, with a portion of skin remaining as a "flap." In a total avulsion, a body part is completely torn off.
<b>bruise</b>	Bleeding that occurs under the skin causes discoloration, swelling. The area begins as red but may turn into a "black and blue mark."
<b>cut</b>	A cut is a split in the skin caused by a sharp object, such as a knife, or even a dull object. A cut can have either a jagged or smooth edge.
<b>puncture</b>	A puncture wound is caused when the skin is pierced by a sharp object. Included in this category are gunshot wounds, impaled objects, and an object that passes totally through a part of the body.
<b>scrape</b>	A scrape is very common, and occurs when skin is rubbed or scraped away.

### Procedures

- Stop the bleeding by applying pressure with a clean, absorbent cloth, or if cloth is unavailable, your fingers.
- If the blood soaks through, apply a second bandage on top. Do not take off the first bandage because it will disturb the clotting that has already taken place.
- If bleeding still doesn't stop, raise the wound above heart level.
- Once bleeding stops clean the wound gently with soap and water, or just water. It is very important to get all debris or dirt out.
- Apply an antibiotic if available
- Wrap the wound firmly in a cloth or a bandage. Do not cut off circulation!

## 3. Burns

**Burns** are classified as:

- Superficial; only damage the outer layer of the skin; cause reddening of the skin
- Partial thickness; damage the epidermis layer of the skin; cause blistering.
- Full thickness: damage all the layers of the skin and underlying tissue.

### Treatment

- Extinguish flames by water, extinguisher, or smothering.
- Remove any continuing source of heat, removing non-adherent clothing/plastic.
- Immediately submerge the affected part in cold water for at least 10minutes (20 minutes for chemical burns).
- Remove jewellery or release tight clothing that may act as tourniquet.
- Cover with a clean, non-stick sterile dressing (Clingfilm or plastic bags may be used).
- DO NOT: break blisters or use any lotions or creams.
- If electrical burn or burn from a bullet or missile, actively seek other entry/exit wound
- Keep patient warm, do not let overzealous cooling of the burn exacerbate shock.

- The patient should be seen by the practice nurse and/or doctor and, depending on the severity of the burn, may need to be sent for treatment in hospital

#### 4. Fractures and dislocations

- Immobilize the affected area (especially the neck if there is any possibility of an injury to the cervical spine).
- Keep the patient still and support the injured area.
- For arm fractures a sling can be made to support and immobilize the affected area.
- Splints (any long firm object) can be used for support and immobilization but ideally splint the affected area to another part of the body when appropriate, e.g. using one leg to splint the other leg.
- For open fractures, control the bleeding with a sterile dressing and apply pressure if required

#### 5. Strains and sprains

RICE procedure:

- R - Rest and support affected limb
- I - Apply ice or a cold compress to reduce swelling
- C - Compress by applying gentle, even pressure on the limb; pad and bandage the affected limb
- E - Elevate limb to reduce blood flow to affected area

#### 6. Nosebleeds

- Only 10% of patients with epistaxis seek medical attention, and 80% of these have anterior nose bleeds (from Little's area). See separate article *Nosebleeds*
- Use sterile disposable gloves, and face shield if possible (nasal bleeding is one of the commonest emergencies to put medical staff at risk of blood contamination, and the conjunctivae are potential sites for the transmission of HIV).
- Get the casualty to sit down, lean slightly forward and pinch the fleshy part of the nose, and push against the bony parts of the face. They should breathe through their mouth, spitting out blood to avoid choking, and aid assessment of control of blood loss.
- The pressure and posture should be maintained for at least 10 minutes but a longer time may be required.
- Ice packs to adjacent cheeks/face may be applied but conflicting evidence of effectiveness.
- Uncontrollable epistaxis and posterior epistaxis should be referred to hospital.

#### 7. Tooth knocked out

If a second or permanent tooth is knocked out:

- Use sterile disposable gloves if possible.
- Hold the crown of the tooth and not the root. Do not scrape the root to remove dirt.
- Rinse the tooth immediately with milk or saline solution.

- If possible and safe (i.e. person is not a child or reduced consciousness) then replace the tooth gently into its socket, and bite down on a gauze pad or handkerchief to help keep it in place. Care must be taken not to swallow the tooth.
- If the tooth cannot be reinserted then put it in whole milk or saliva, and control bleeding with a gauze pad inserted in the tooth socket with the person biting gently on the pad.
- If the gums are bleeding, put cold water on a piece of gauze and push it between the lips and gums.
- The person should see a dentist as soon as possible, ideally within 20 minutes, as the tooth begins to die after 15 minutes.
- If a primary tooth (likely if the child is under the age of 7) is knocked out or the gum injured:
- Put on disposable gloves.
- Control bleeding by soaking a piece of gauze in cold water and applying pressure to the site.
- Treatment may not be necessary but the child should see a dentist to assess whether there is a need for realignment or the removal of a very loose tooth.

## **8. Convulsions, Epileptic Fits**

- A convulsion (violent, involuntary contraction or muscle spasm) can be caused by epilepsy or sudden illness.
- Most convulsions are often followed by a period of unconsciousness or sometimes another convulsion.

### **Treatment**

- Lay patient on ground in safe area.
- Clear all objects away from the victim and place something soft under his head.
- Do not place anything between his teeth or in his mouth.
- Loosen tight clothing, particularly round the neck.
- Do not give the victim any liquids.
- Stay calm and keep the victim comfortable until help arrives.

## **9. External bleeding**

- Use sterile disposable gloves, and face shield if possible.
- Calm and reassure patient.
- Lay patient down, to avoid fainting.
- Check the wound for any foreign material, but do not remove deeply penetrating objects but pad and try to immobilize them.
- Apply firm direct pressure using a clean, folded cloth over the injured area. If blood soaks through, do not remove it but cover that cloth with another one and continue to apply pressure to the wound for 7-10 minutes.
- Elevate the injury. Position the wounded part of the body above the level of the heart if possible while you apply direct pressure.
- If direct pressure and elevation do not sufficiently slow the blood flow, apply pressure to the closest pressure point. An essential part of first aid training is to learn how to locate the various pressure points of the body.

- On very rare occasions when everything listed above has failed, you should apply a tourniquet proximal to the wound. Once a tourniquet is applied, it should not be loosened or removed until the victim has reached medical help. If you use a tourniquet, write down somewhere on the victim the time it was applied, so medical personnel will know how long it has been in place.
- Further management will depend on the source and extent of the bleeding.

## 10. Fainting

Faints are a sudden brief loss of consciousness followed by full recovery within two minutes.

Treatment

- Lay the casualty flat with the legs raised.
- Loosen restrictive clothing around the neck, remembering over-zealousness in the absence of witnesses could leave you open to an assault charge.
- Check airway, breathing, and pulse.
- If patient has vomited, put in recovery position to prevent choking.
- There is usually a full recovery when laid flat. If this does not occur then further expert medical help is required.

## 11. Chocking

*Conscious*

- If a person is clutching his or her throat with both hands, he or she is making the universal sign for choking.
- If the person can cough or talk, encourage him or her to continue coughing.
- Once the victim can no longer talk or cough, you must clear the obstructed airway.
- To clear the obstructed airway that causes choking, you must perform the Heimlich maneuver, also known as abdominal thrusts.
- Stand behind the conscious choking adult, wrapping your arms around his or her waist. With one hand, make a fist.
- Place the thumb side of the fist against the victim's abdomen just above the bellybutton.
- Be sure your hand is far below the tip of the breastbone. Put your other hand over the fist and give quick upward thrusts into the victim's abdomen.
- Continue giving thrusts until the object blocking the airway is dislodged and the victim begins to breathe, or until the victim becomes unconscious.

*Unconscious*

- If, during the primary survey, your breaths will not go in an unconscious adult, and you re-tilted the head and tried again but the breaths still would not go in, you must assume the victim's airway is obstructed.
- If the victim is a conscious choking adult who became unconscious, you must lower him or her to the floor on his or her back.
- Perform a head tilt and chin lift to try to open the airway, and attempt to remove the obstruction by sweeping it out of the victim's mouth with your finger. This is called a finger sweep.
- Always use a hooking action, being careful not to lodge the object in further.



- Perform a head tilt and a chin lift and give **2** slow breaths. If the breaths still do not go in, go to abdominal thrusts.
- Straddle one or both of the victim's thighs.
- Place the heel of one hand on the victim's abdomen, just above the bellybutton yet far below the tip of the breastbone.
- Place your other hand on top of the first, interlacing your fingers, and give **5** quick upward thrusts.
- Then do a finger sweep and give **2** slow breaths.
- If air still will not go in, continue giving **5** abdominal thrusts, a finger sweep and **2** slow breaths.
- Continue giving thrusts until the object is dislodged, air goes into the victim, or trained medical personnel takes over.
- If the victim is not breathing but has a pulse, you must perform Rescue Breathing (See Resuscitation)
- If the victim is not breathing and does not have a pulse, go to CPR (See Resuscitation)

### **Other important procedures and issues in first aid**

- Poisoning
- Stings and Snakebites
- Severe Allergic reactions
- Diarrhoea
- Eye Injury
- Fever
- Splints and Bandages in first aid
- Contents of a First Aid Kit