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Care of patients in life-threatening emergencies

When the patient's life is in immediate danger, that is an emergency and you need to take urgent action. Emergencies may have many different causes. For example, a person may be badly injured, or suffering a heart attack or stroke, or having a severe allergic reaction. The person may have been poisoned or severely burned, or may be drowning. This chapter focuses on danger signs to look for and immediate measures to take in emergency situations.



Being prepared for emergencies

You should have immediate access to a resuscitation kit or trolley that includes the following:

- syringes, needles (different sizes), butterfly needles (if possible), swabs, strapping (plaster), and an ampoule file (if possible)
- Intravenous (IV) drip sets and intravenous cannulas
- 4-5 litres of IV fluids: Hartmann's or Ringer's lactate, normal saline, 5% dextrose, plasma
- oxygen, if possible
- suction equipment and catheters

- airway tubes and, if possible, a laryngoscope
- tourniquet
- ambu bag (paediatric and adult) and several different sizes of masks
- drugs: The following drugs should be on the trolley or readily available in the emergency room or casualty area of the hospital - 50% dextrose solution, adrenaline, frusemide (Lasix), diazepam (Valium), hydrocortisone/dexamethasone, phenergen, ergometrine, naloxone (Narcan), insulin, lignocaine, snake bite anti-venom (if available), atropine, aminophylline, anti-malarial drugs, aspirin and antibiotics.

The trolley or kit should be checked daily to make sure that all equipment and supplies are ready for use.



The A, B, C and D of resuscitation

In a life-threatening situation, the first task is to resuscitate the patient. Always begin resuscitation at once; do not wait until you have assessed the patient. Follow the A, B, C, and D of resuscitation.

A Ensure a clear airway

First check to see whether the person's airway is open. If the patient can speak, the airway is clear. If the person cannot speak, see whether the chest wall is expanding. Listen for airway exchange (breathing) and try to feel any breath against your hand. If there is too little or no air movement in a conscious person, the person may be choking.

Airway obstruction: conscious person

If a conscious person is choking, perform the Heimlich manoeuvre. Stand behind the patient, put your arms around the abdomen, between the waist and ribcage, and grasp your hands together. Then give a quick, sudden pull on your hands in an upward thrust. Repeat this squeezing action three or four times if necessary. This will help to dislodge anything caught in the person's airway.



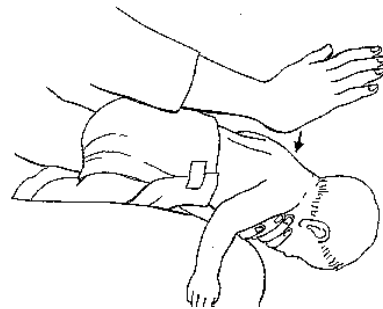
Heimlich manoeuvre

Airway obstruction: unconscious person

If the patient who has choked is unconscious, straddle the patient, (who should be lying on his or her back), and place the heel of your hand in the patient's midline, above the umbilicus and well below the lower sternum. Put your other hand on top of this hand and press inward and upward towards the patient's diaphragm with five quick thrusts. This should dislodge any foreign body in the airway.

If the patient is a child, use the same procedures as for an adult. Repeat the upward thrusts five times.

If the patient is an infant, lay the infant face down on your forearm, with the head lower than the body. Support the infant's head and chest and give five firm slaps between the shoulder blades.



Removing an obstruction from an infant's airway

If this does not dislodge the blockage, place the infant on his or her back with the head lower than the body. Using the first two fingers of one hand, press

between the umbilicus and the breast bone with a firm quick movement, five times.

If the patient is not obviously choking, you can probably open the airway by extending the patient's neck. To do so, tilt the head back with one hand and lift the jaw with the other.



Open the airway by tilting head back and lifting chin

If the patient is unconscious and breathing, put him or her in the coma position, lying on one side with one knee flexed and the head turned sideways. This will prevent either the tongue or vomit from blocking the airway.

Clinical alert: If it is possible that the spine is broken, do not move the patient at all. Do not extend the neck. Place yourself at the patient's head and open the airway by pushing the angles of the patient's lower jaw forward, while you stabilize the head between your forearms. You may need to use suction to clear the patient's airway.

B Ensure that the person is breathing

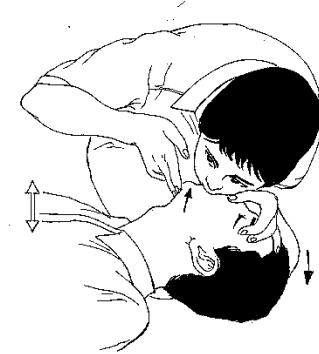
If the person has stopped breathing, you need to help him or her to breathe after you have cleared the airway. Without breathing, the patient will be dead in four minutes.



Clearing the airway

Use mouth-to-mouth resuscitation or an ambu bag and mask. Lay the person face up, gently tilt the head back and pull the jaw forward. If the person might have a broken spine, lift the jaw forward at the chin and do not extend the neck.

For mouth-to-mouth resuscitation, pinch the nostrils closed with one hand, open your mouth wide and take a deep breath. Cover the person's mouth with yours and blow strongly into the person's lungs for about two seconds so that the chest rises. Let the air come back out by breaking contact with the patient's mouth, and then blow again. Repeat every five seconds. For babies or small children, blow gently and repeat every three seconds.



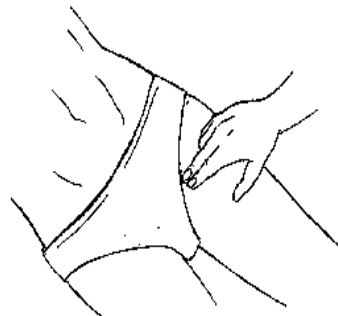
Mouth-to-mouth resuscitation

Continue until the person can breathe on his or her own or is clearly dead.

C Ensure that the person's heart is beating



Feeling carotid pulse



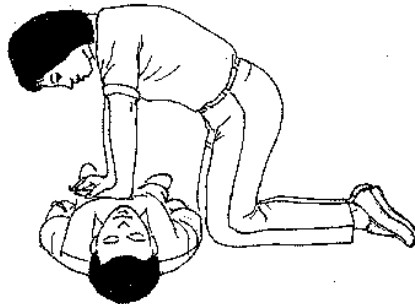
Feeling femoral pulse

If the person is breathing, the heart is beating. If the patient is not breathing, check the carotid pulse (in the neck) or the femoral pulse (inside the upper thigh next to the groin). These are the easiest pulses to feel. In infants, feel for the brachial pulse in the upper, inner arm, between the elbow and shoulder. If there is no pulse and the person is not breathing, begin cardiopulmonary resuscitation (CPR).

The patient should be lying flat on a hard surface. If you suspect spinal injury, keep the head and body in a straight line.

Always ventilate the person first, before doing chest compression.

If you are alone, ventilate the adult patient with two slow, deep breaths lasting about two seconds each, as described above. Then compress the person's chest in the middle of the sternum 15 times. To find the correct position, first locate the notch



Chest compression

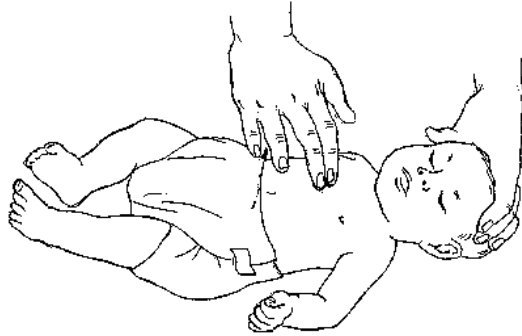
or indentation below the sternum, place two fingers above the notch and place your compressing hand above the two fingers. After you have done 15 compressions, ventilate the person with 2 more breaths. Then provide 15 more compressions. Repeat this four times.

If the person is breathing now, monitor closely. If the person is not breathing, continue to ventilate with one breath every 5 to 6 seconds. If there is no pulse or breathing, continue with cardiopulmonary resuscitation.

If there are two people, one can pump the heart 80-100 times a minute while the other ventilates the lungs 12-15 times a minute, or once after every five chest compressions.

For cardiopulmonary resuscitation with children, compress the sternum using only one hand at a rate of 80-100 times a minute and ventilate the child once every five compressions.

For infants, use two fingers to compress the chest 100 times a minute and ventilate once every 5 compressions. Compress the chest over the sternum, one finger breadth (width) below an imaginary line drawn between the infant's nipples.



Chest compression of infant

If the heart is beating but the patient's pulse is very weak, raise the patient's legs and begin intravenous fluids. Check the blood pressure. Prepare to begin chest compressions if needed.

D Use a drip to ensure that the person is hydrated and prepare to administer ordered drugs.

The patient may go into shock if there has been too little blood to the vital organs in the body. The signs of shock are:

- anxiety, restlessness or fear
- inability to concentrate
- fast breathing
- thirst, nausea
- dilated pupils
- pale and cool or cold skin

- delayed capillary refilling
- increased pulse and decreased blood pressure.

If shock progresses, the patient may go into a coma or die from fluid and blood loss.

Shock is common in patients experiencing severe injury, severe burns, a severe allergic reaction, drug overdose, poisoning, severe dehydration, sepsis (severe infection in the bloodstream), or a massive heart attack. It is standard practice to give fluids to patients in emergency situations.



How to manage shock

- Run an intravenous drip rapidly using normal saline, Hartmann's or plasma; use 5% dextrose solution if nothing else is available.
- Lay the person flat and elevate the legs to help venous blood return to the heart and increase blood pressure. Do not move the patient if spinal cord injury is suspected.

Clinical alert: Do not raise the legs if the person has congestive heart failure, fluid in the lungs (pulmonary oedema) or severe difficulty breathing (respiratory distress).

- Continue the intravenous drip until the patient's blood pressure is normal.

Clinical alert: Do not give fluid to a head injury patient unless he or she is in shock, because the fluid may increase swelling in the brain (cerebral oedema). Be careful not to give too much fluid to cardiac failure patients or children. Some people suggest delaying fluids for persons with trauma.

- Keep the patient warm.
- Give oxygen if it is available.
- Monitor the patient's airway, breathing and vital signs.



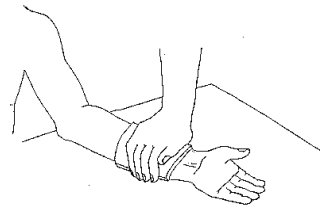
How to manage bleeding

If the patient is bleeding, stop the bleeding using a pressure bandage or manual pressure directly over the wound. **Pressure will almost always stop the bleeding.**

Raise the wound above the level of the heart, if possible.

If necessary, apply direct pressure over pressure points such as over the main arteries (brachial in the inner arm or femoral in the upper thigh/groin).

Sometimes a bleeding artery or vein is clearly visible in the wound. If pressure does not stop the bleeding, you can clamp the blood vessel with an artery forceps. Be extremely careful that you do not clamp a vital structure by mistake.



Stop bleeding with pressure dressing

***Clinical alert:* Tourniquets are dangerous and should not be used to stop bleeding. The only time you ever use a tourniquet is for a wound of the lower limb where the profuse bleeding is life threatening. In this case, release the tourniquet for a few minutes every half hour.**



Establish the diagnosis of the patient

Once you have resuscitated the patient and stopped the bleeding, check for the underlying cause of the emergency and begin treatment. Take a brief, focused history and check vital signs.

Head and neck

Check the head for wounds or lacerations, drainage from the nose or ears, mouth and jaw injuries.

Look for swelling or injury to the neck.

Smell the patient's breath for any unusual odour.

Continue to monitor vital signs and assess the patient's level of consciousness. Keep an unconscious patient lying on his or her side.

If there is injury to the eye, cover the eye with a patch.

Check the pupils in both eyes. Normally they are equally round and react when a light is shined in them.

If the nose is bleeding, have the patient sit up if possible and pinch the nose for ten minutes to stop the bleeding.

Shoulders and arms

Check the patient's shoulders, arms and hands. Have the person grip your hands and release, if he or she is able to. Check the range of motion of the elbow. If there are fractures, splint them.

Chest

Check the patient's chest. The chest should expand equally on both sides when the patient breathes.

Look for a sucking chest wound.

Listen to breath sounds from both lungs with the stethoscope, and listen to heart sounds. The lung sounds should be equal on both sides.

Feel the clavicles, sternum and ribs and ask if this causes pain.

If the chest is open, cover the wound with a clean airtight dressing and bandage. If the patient has trouble breathing, untape one edge of the dressing so it acts as a valve.

Abdomen

Assess the abdomen for distension and injury. If you suspect damage to internal organs, or if the abdomen is very tender or rigid, continue intravenous fluids. Do not give anything by mouth because surgery may be necessary.

Spine

If there is a spine injury, do not move the patient until you have at least three people to assist. The patient's neck and spine and trunk must not bend when he or she is moved. While waiting for help, place your hand gently under the lower curve of the back and feel for any tenderness or deformity.

Lower extremities

Examine and feel (palpate) the pelvic area and bones. Look for any obvious injuries.

Examine the legs and feet for deformities, bleeding, bony protrusions, swelling or discoloration.

Check pulses in feet.



Emergency treatment

After confirmation of diagnosis, give emergency treatment. If no doctor is available, it may be necessary to arrange for transport of the patient to another health facility.

Immediate drug treatment is essential for certain conditions:

The following drugs should be used according to the treatment schedule (or protocols) established for your health facility.

- For convulsions: Diazepam (Valium)
- For postpartum haemorrhage: Ergometrine
- For asthma: Aminophylline
- For narcotic drug overdose: Narcan

- For patients in severe shock or having an allergic reaction: Intravenous or intramuscular hydrocortisone (plus adrenaline if shock is caused by an allergic reaction)
- For acute allergic reaction: Adrenaline and phenergen
- For pulmonary oedema and cardiac failure: Frusemide (Lasix)
- For insecticide poisoning: Atropine
- For low blood sugar: 50% dextrose solution
- For diabetic hyperglycaemia: Insulin
- For snake bite: Snake bite anti-venom
- For heart attack: Aspirin and thrombolytics, if available. Intravenous morphine may be given for severe pain.
- For infections such as typhoid, meningitis, septicaemia, pelvic inflammatory disease, pneumonia and peritonitis: antibiotics.
- For malaria: Antimalarial drugs such as quinine and chloroquine.

Patients with most of these conditions will need early insertion of an intravenous line

For immediate treatment of a burn, immerse the body part in cold water for the first 30 minutes and give pain medication.



Communicate with the family

When the patient is in a life-threatening condition, family members need to be informed as soon as possible. Tell the family what happened, in the order in which the events occurred. Finish by telling the family what the patient's condition is now. If the patient is in a critical condition, it is useful to add something like, "He is not

awake and is in no pain." If the patient is dying, try to give the family some advance warning of what to expect.

If the patient is in the emergency room or the operating theatre, or if the family should not come into the patient's room, make them comfortable in a waiting area when they arrive and give them information about the patient as often and as quickly as possible. As soon as possible, allow one family member to see the patient if he or she would like that, but explain what will be seen.

If the patient dies, allow the family to see the patient after death. Before they come in the room, make the body look as natural as possible. Place the body flat, with arms at the sides. Close the eyelids and mouth. Wash soiled areas of the body and cover with a sheet. Remove equipment and supplies from the bedside.

Allow the family to stay as long as they would like to say goodbye to the patient. Provide comfort and care to the family.