Vancouver Firefighters
CPR + First Aid

CPR
Student Guide

Basic Life Support Skills

for managing Medical Emergencies

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CPR - Student Guide

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And,

Professional first-aid experience

How to use this Manual

This manual is only meant to be used as a supplement to hands-on training delivered by a certified CPR instructor in a classroom setting.

This manual is your reference to the skills you will be learning on this course. It contains a description of the skills you will be learning as well as additional information about first aid.

Before your course starts, take a few minutes to look over the material and become familiar with the course content. Don't worry about memorizing the skill sequences because you will learn these through practice. There are also information sidebars that present extra information on first aid matters, some of which are on the quiz.

During the course we will not be using the books in class because the focus is on skills, which you will learn by hands on practice. After each session, read over the part of the guide covering the skills you have learned to confirm that you have learned them correctly. If you have any questions from reading the guide or you need clarification on something, you can ask your instructor at any time.

Make sure that sometime before the end of the course you take time to read through all the parts of the manual for your course. Otherwise, you may have trouble answering some of the questions on the quiz.

Vancouver Firefighters
CPR + First Aid

Table of Contents

Vancouver Firefighters
CPR + First Aid

Section 1

Course Introduction and Safety

Navigation Links

Vancouver Firefighters
CPR + First Aid

Section 1 - Course Introduction ar__ Safety

Introduction to CPR Certification:

The course you will be taking is taught by professional Firefighters who are also certified CPR Instructors. They use the skills you will be learning in real emergencies every day. This course will focus mainly on practicing the hands-on skills which you will use in an emergency. You will be evaluated throughout the course on your ability to perform these skills. There is also a short quiz which you will write at the end of the course.

Aim (What)

First aid techniques for saving somebody's life until the Fire Department / Ambulance takes over.
In most cases that will be in less than 5 minutes.

Motivation (Why)

Sometimes even the fastest response by the Fire Department and Ambulance may not be fast enough to save somebody's life. People like you trained in first aid, give patients the best chance for a recovery and are the most important part of pre-hospital care, which is why you are taking this course.

Outline (How)

- **Disease**
- **Dangers**
- **Law**

Link (When)

Most medical emergencies happen at home.
The life you save will probably be someone in your own family.

Course Outline:

In this course you will be learning:

CPR HCP

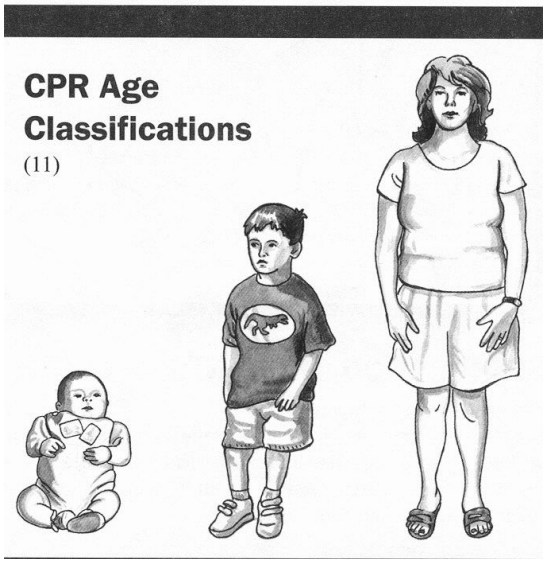
- Safety - to ensure that no further harm comes to you or to anyone else,
- SAVE System - Sequence of steps to manage any situation,
- CPR - for patients with no breathing,
- How to Recognize Heart attacks and Strokes - to get someone to the hospital before CPR is necessary,
- Treatment for Choking - to clear the airway of a person who can't breathe.
- Children - CPR & Choking,
- Infants - CPR & Choking,
- Health Care Provider - Higher Level of Response,

When to use this:

CPR Level HCP Course (All ages):

You will be learning skills for adults, children, and infants.
In first aid,

- Adults are over the onset of puberty,
- Children are aged 1 to onset of puberty,
- Infants are under 1 year old.



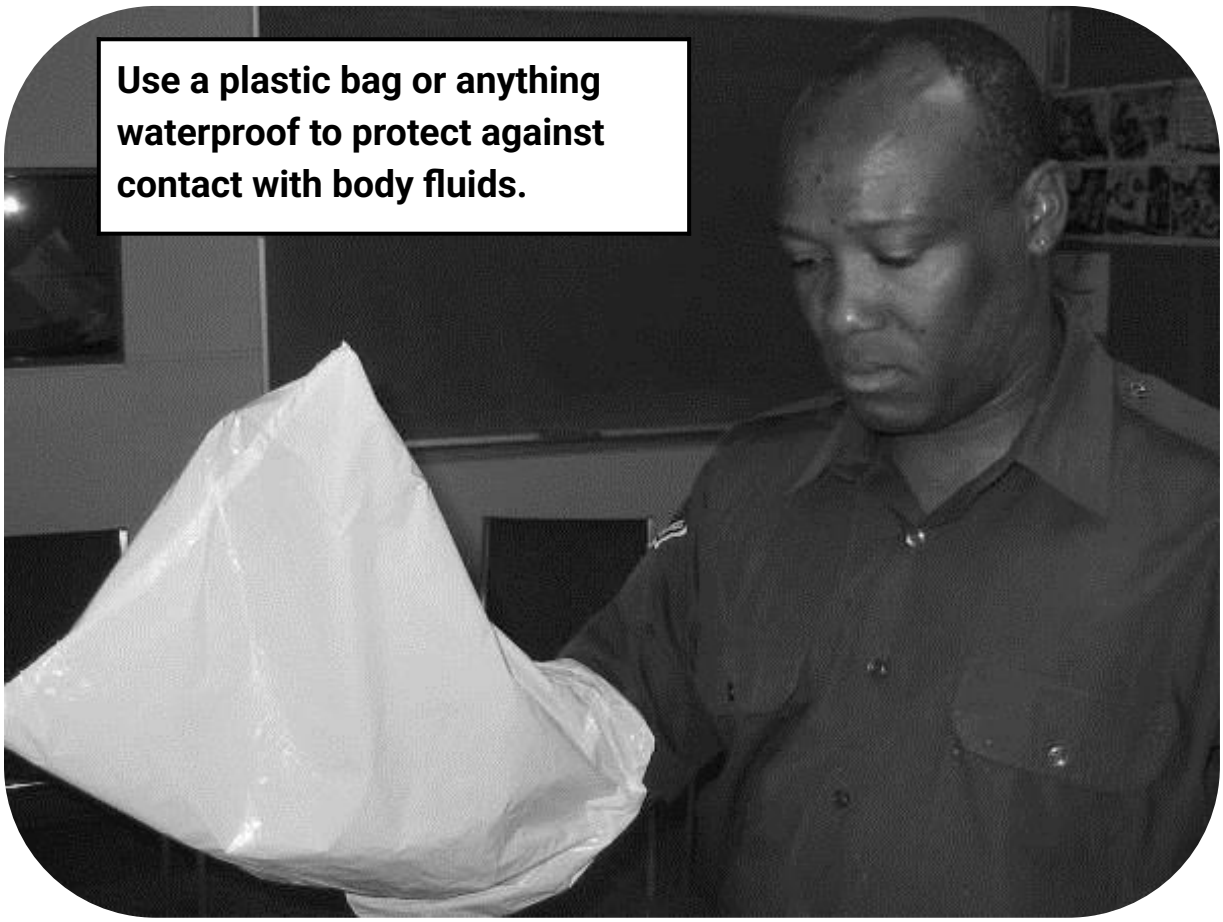
These skills follow the same principles used by professional emergency medical services at all medical emergencies. Any further first-aid training you take will deal with what to do after you have carried out these skills.

An important rule for first aid is never put yourself at risk.
The first thing you should do in an emergency is think about your own safety, and the safety of those around you.

Disease Protection

If you are giving first-aid to your family members, even if they are bleeding, you shouldn't have to worry about protecting yourself, unless they have a communicable disease.

If you don't know the person that you are treating, there is no way to know if they have a communicable disease. With people you don't know, you should ALWAYS protect yourself from contact with other people's body fluids like blood or vomit.



You do not necessarily need hand protection to give first-aid to a person who is not bleeding.

Hand Protection:

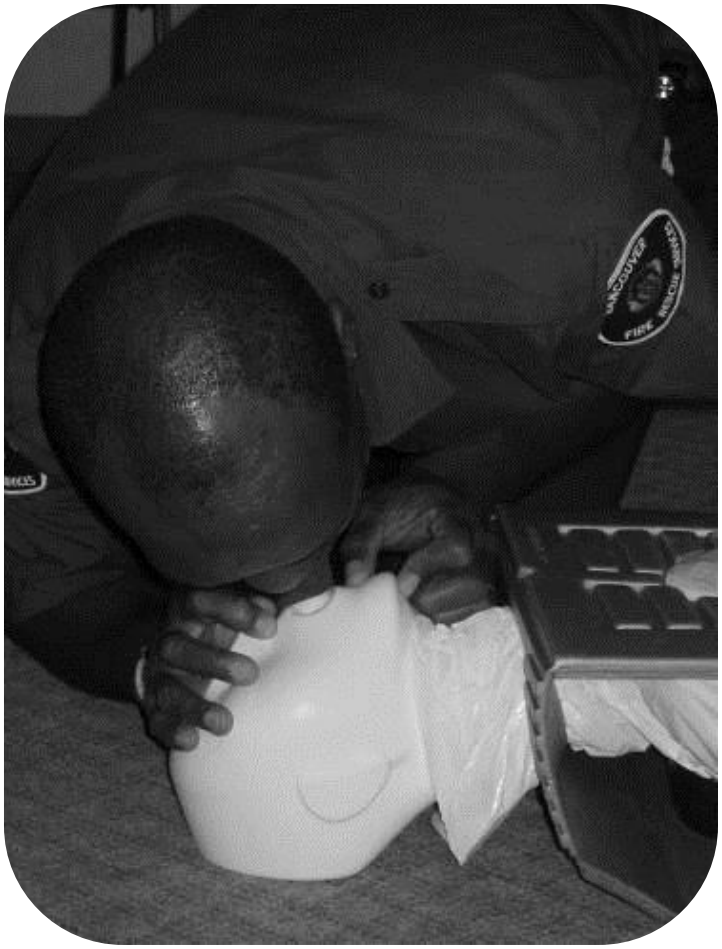
- ***Clothing like T-shirts or towels are no good, as they will soak through.***
- If there is a lot of blood around the patient, be careful not to kneel in it or allow any part of your body to come in contact with it.
- After treatment wash your hands with soap and water, whether your skin came in contact with body fluids or not.

Disease Protection (continued)

Mouth-to-mouth Protection:
The risk of blood-borne disease transmission from saliva, vomit, or mouth-to-mouth contact is extremely small. If the patient is not a member of your family or someone you would kiss, you may choose not to give mouth-to-mouth breathing.

- A plastic bag with a hole in it, or breathing through a shirt provides **no protection** from disease transmission.

- If you are unwilling to give mouth to mouth breathing, do chest compressions anyway (if required).



If you are treating a family member or someone you would kiss, you shouldn't need protection.

Only you can decide whether you are willing to give mouth to mouth breathing if it is someone that you don't know.

If you take the appropriate precautions whenever you treat any patient you should be able to help them without putting yourself at risk from disease transmission.

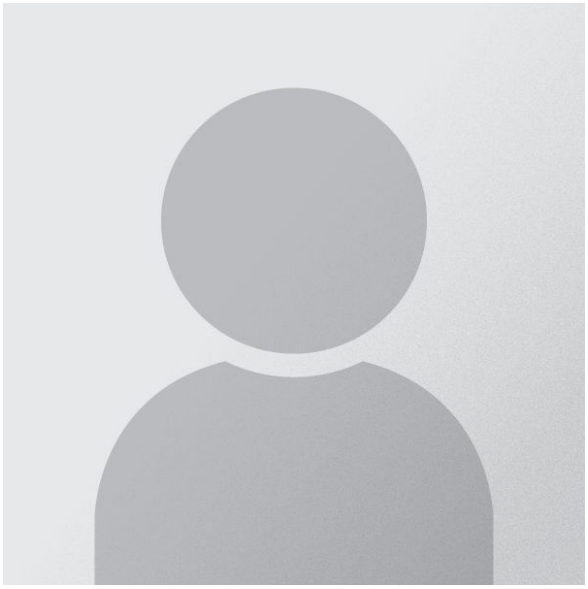
Physical Dangers

When you see an emergency your first impulse may be to rush in and help. You must overcome this impulse and make sure you will come to no harm before you approach the scene.

Guaranteeing your own safety is the first and most important step in any emergency!

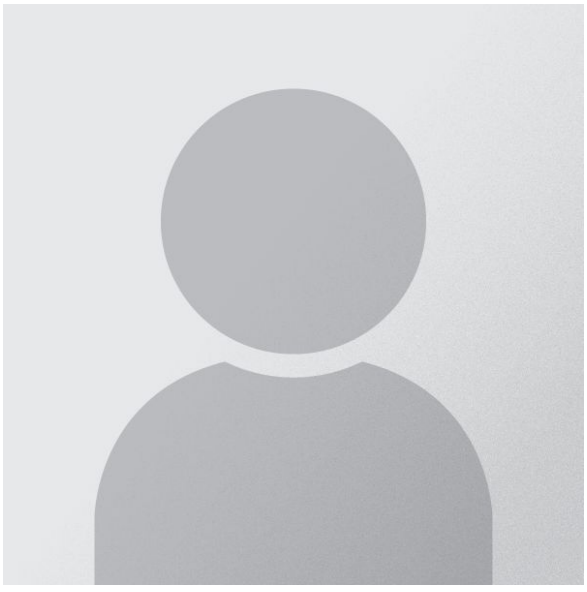
Some examples of dangers are:

- Electrical appliances that are still running
- Broken glass on the ground
- At a car accident, traffic may not stop. Also, cars can be unstable and extremely hazardous after an accident.
- At an assault, the violent person may still be present.



Never risk your own safety to give first-aid. Before you do anything, make sure it's safe for you to help.

If you are unable to make a scene safe, you should call 911 and try to keep others from danger.



If it is possible, you should make the scene safe for you and the patient.

- Turn off motors and unplug appliances
- Take time to move obstructions out of your way, away from the patient.
- Park a car so that it shields the patient area from traffic. Approach cars with extreme caution following an accident.

The Good Samaritan Act

In British Columbia and most provinces in Canada, you are protected from legal liability in an emergency situation by the *Good Samaritan Act* as long as you are volunteering your help in good faith and:

- Tell the person you are a first aider and get permission to help them. If it is a child or infant, get permission from the parent or guardian if they are there.
- Use only the skills that you have been trained to do, and use reasonable care in carrying them out.
- Once you offer to help you must stay with the person until the Fire Department/Ambulance takes over, another first aider takes over, or the person no longer wants your help.

As long as you follow the principles of the Good Samaritan Act you should be able to help someone without putting yourself at risk from legal action.

NOTE:
When you are *employed* to give first aid (*i.e. lifeguards*) you are not covered by the Good Samaritan Act. Your employer will give you information on liability protection.

Implied Consent
With unconscious people and unattended minors, you have *implied* consent and are allowed to help.

If any person refuses your help, call 911

Session Summary:

As long as you protect yourself from danger, you should never be afraid of helping someone in an emergency.

Sometimes just giving the basic life support skills you will be learning could make the difference between a full recovery and return to normal life, or a long sickness or even death.

The patient, and the patient's family will appreciate whatever you do, even if all they need is someone to "hold their hand" until help arrives.

Vancouver Firefighters
CPR + First Aid

Section 2

SAVE System

Navigation Links

Section 2 - SAVE System

Introduction:

Aim (What)

The SAVE System is the sequence of actions to ensure all necessary treatments are given in the order of their importance. Skipping steps or treating them out of order may affect a patient's chances of survival.

Motivation (Why)

This is the same sequence used by professional first-aiders including firefighters, ambulance personnel, and emergency physicians because it works.

Outline (How)

- **SAVE System**
- **The ABC's**
- **Patient Positioning**
- **Spinal Injuries**

Link (When)

This is the framework for giving first aid. You should use this sequence for EVERY patient you treat, regardless of their apparent condition, or visible injuries.

SAVE System

Whenever we do First Aid we are going to use the SAVE System.

The SAVE System is a sequence of steps to treat every patient regardless of their apparent injuries or condition. Sometimes the most serious injury is not the most obvious.

Use the SAVE System to handle a complex situation one step at a time.

- **S**AFETY - *Safety comes First!*
- **A**BC's - *Airway, Breathing & Circulation*
- **V**ITALS - *Maintain Vitals*
- **E**ND - *Arrival of Advanced Care*

SAFETY -
Safety comes First!

Take a deep breath and try to calm yourself down while you look around for dangers and talk to witnesses to find out what happened

Recognize there may be an emergency.

Determine

- Is it Safe?
- What happened?
- Who is Hurt or Sick?

Call out to attract attention and to take charge. Call 911 immediately.

Is it Safe?

- Look around for any possible dangers and make sure the scene is safe for you and the patient.
- If there is any danger, do not start treatment until you have made it safe.
- If you are unable to make the situation safe, do not attempt to give first-aid. Call 911 and explain the situation.

What Happened? Who is Hurt or Sick?

- Look for possible clues about what happened and the number of patients. Ask any witnesses if they saw what happened.

Get an AED.

Many public buildings are equipped with life-saving AED's. Ask a security guard or staff member if one is available. If you are alone and you know where an AED is, go and get it first, then return to start treatment.

Universal Sign for AED

Phone 911 immediately.

- If you have a cell phone call from the patient's side.
- If you don't have a cell phone, find the nearest phone and call 911.
- If another person is nearby you can tell them to call 911 for you.

When to Call 911:

If you think a person is having a medical emergency, you should not hesitate to call 911.

NEVER DRIVE SOMEONE TO THE HOSPITAL IN AN EMERGENCY.

The 911 system is always the fastest and safest way to get emergency hospital treatment

You should call 911 if any person:

- Is or becomes unconscious (can't wake up, even in response to pain)
- Is unable to form words (even in response to pain)
- Has chest pain or pressure
- Has difficulty breathing
- Starts slurring for no reason
- Develops a sudden severe headache
- Has seizures
- Is bleeding severely
- Has abdominal pain or pressure
- Has a head, neck, or back injury
- Has possible broken bones
- Has been poisoned
- Has overdosed on drugs
- Has been electrocuted
- Has any suspected injury or illness

If you are unsure whether you should phone 911, you should phone anyway and the ambulance operator will advise you on the appropriate actions to take.

You will never get in trouble for calling 911 by mistake.

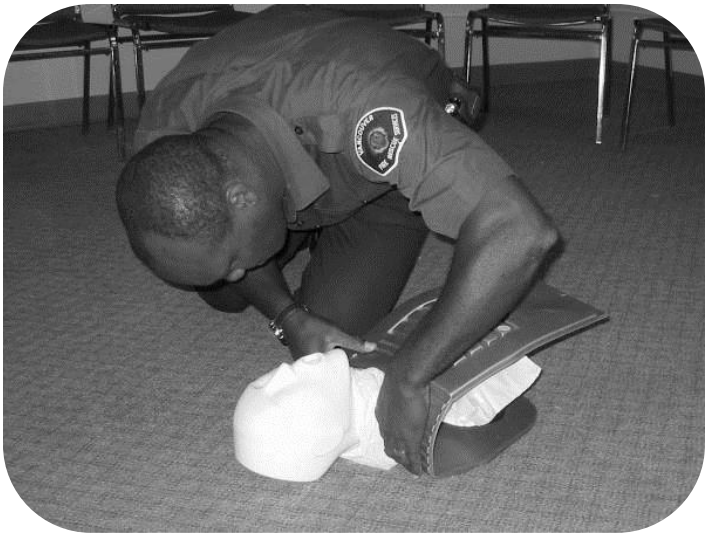
ABC's
Airways, Breathing & Circulation

As long as the patient has an Airway, Breathing, and Circulation, they are alive, so these are what we look after!

The ABC's are the 3 key elements of basic life support.

They are the 3 things a person needs to support life.

- **AIRWAY** – There must be an open passage from the mouth and nose to the lungs. A person who is choking has a blocked airway.
- **BREATHING** – Air must go in and out of the lungs through the airway, carrying oxygen in, and waste products out. A person who isn't breathing isn't getting any oxygen into their body.
- **CIRCULATION** – Blood must circulate through the lungs to pick up the oxygen, and carry it to all the tissues of the body. A person who's heart is stopped has no circulation.



AWAKE:

Try to wake them:

- Shout in the patient's ears and pinch their shoulder.

Sometimes people who are seriously ill, or impaired by drugs or alcohol, are very hard to wake up.

If the person is intoxicated and you get no response right away, really try hard to wake them up.

- Anybody who can't wake up or can't speak properly is in danger, even if it's just because they are really drunk. They could choke to death on their own tongue or vomit, even if nothing else is wrong with them.

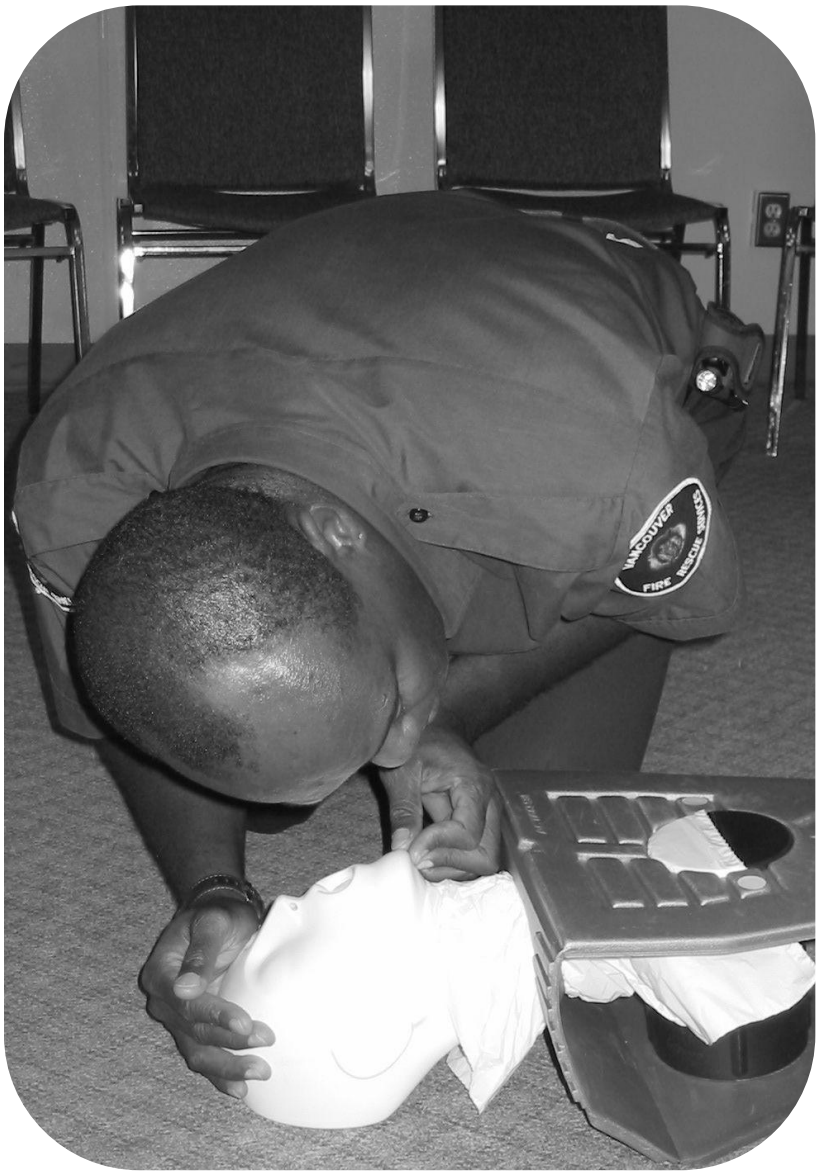
If the patient <u>is</u> awake and can talk to you, you know that they have an Airway, Normal Breathing, and Circulation!

If there is no obvious breathing,
or if the patient is making 'snoring' sounds:

AIRWAY: *Open the Airway*

When people are unconscious all their muscles relax. The tongue is a muscle and when patients lie on their back it may block their airway, causing them to make 'snoring' sounds or not breathe at all.

If the patient is awake, or if there is obvious breathing without snoring sounds, you do not need to hold their airway open.



If the patient <u>isn't</u> awake, check their ABC's:

Open the airway:

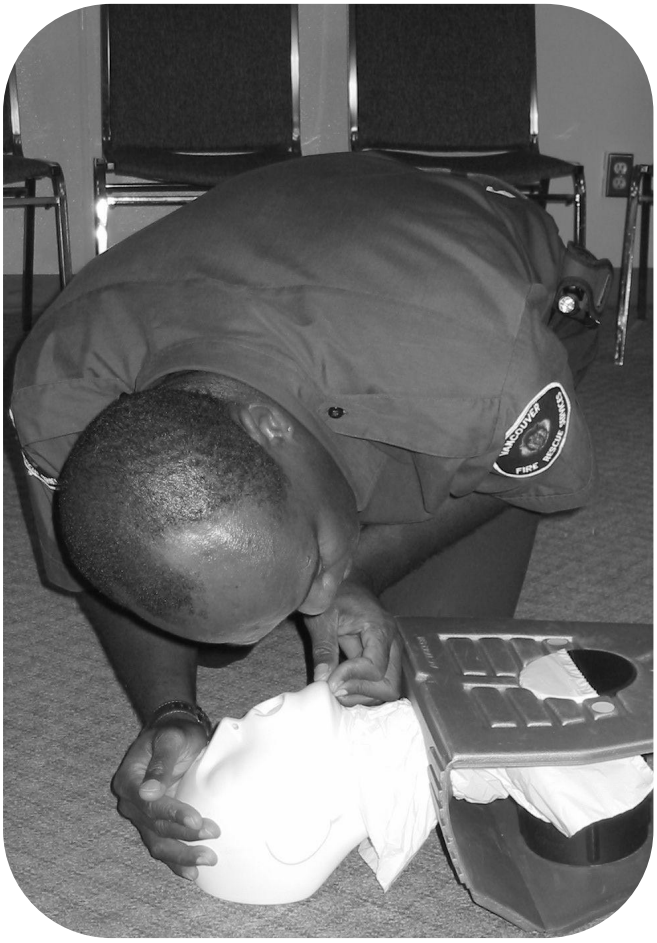
- Put one hand is on the patient's forehead
- Put 2 or 3 fingers of the other hand on the edge of the patient's jaw
- Push down on the forehead and up on the jaw to tilt the patient's head back as far as it will go.

If you need to open the airway, you will need to hold it open continuously

BREATHING: *Look, Listen & Feel*

Sometimes people whose hearts have stopped take occasional 'gasping' breaths. It may seem like they are breathing, but it is actually a sign that they are very near death.

A person needs "normal" breathing to maintain life. Normal breathing should be fairly regular, and there should be no more than about 5 seconds between each breath.



Check for 'normal' breathing:

- Make sure you are holding the patient's airway open.
- Put you ear and cheek close to the patient's mouth with your head turned towards the chest. Look for movement of the chest, listen for breathing sounds, and feel for air on your cheek.
- Start counting out loud **(1 thousand, 2 thousand, etc...)** while you look, listen, and feel for breaths.
- As soon as you feel a breath, count the number of seconds until the second breath, then count the number of seconds until the third breath.
- Count the number of seconds between breaths at least twice.

'Normal' breathing is a sign that there is circulation.

For normal breathing, you should feel 3 fairly regular breaths, no more than about 5 seconds apart.

If you count to 10 and there are no normal breaths, the patient is not breathing.

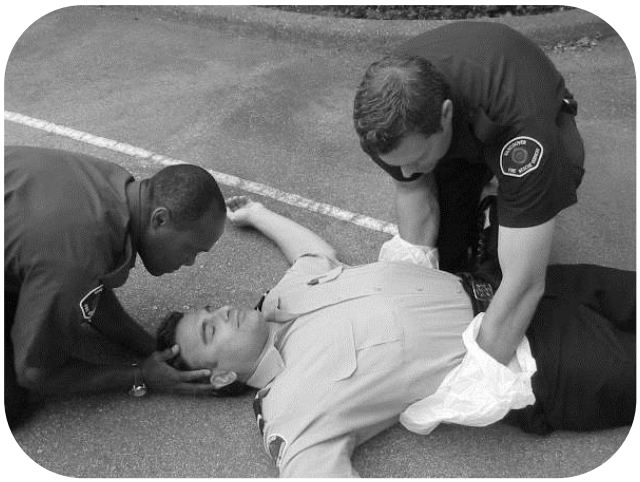
If there is no breathing, or if there is only an occasional 'gasping' breath, immediately start CPR/AED.

CIRCULATION:

If there <u>is</u> normal breathing, check for bleeding or life-threatening injuries:

A person with a severe injury could bleed to death in just a few minutes. You need to check the patient from head to toe for life-threatening injuries. We call this a Rapid Body Survey.

Start at the person's head and work towards the feet, checking carefully for severe bleeding or any other life-threatening injuries. Gently pat the patient with your hands looking for pain or lumps.



If there is any sign of bleeding make sure you protect yourself from contact with body fluids

If you find severe bleeding, control it with Direct Pressure.

- Put the patient at rest to slow their heart rate. Anyone who is bleeding should be lying down.
- Make sure your hand is in a plastic bag or you are wearing rubber gloves.
- Try to get any clothes out of the way.
- Put your hand directly over the wound and press against it. This makes a seal against the surrounding skin and stops the bleeding.
- If the person is awake they may be able to press on their own wound.

Direct pressure usually controls bleeding better than bandages.

If you find a non-life threatening injury (like a broken arm or leg), make a note of it, but do not stop your examination to treat it. Usually these types of injuries just need to be kept still to minimize further injury and pain to the patient.

You do not need to bandage any wound unless the Fire Department/ Ambulance will be a long time before they arrive.

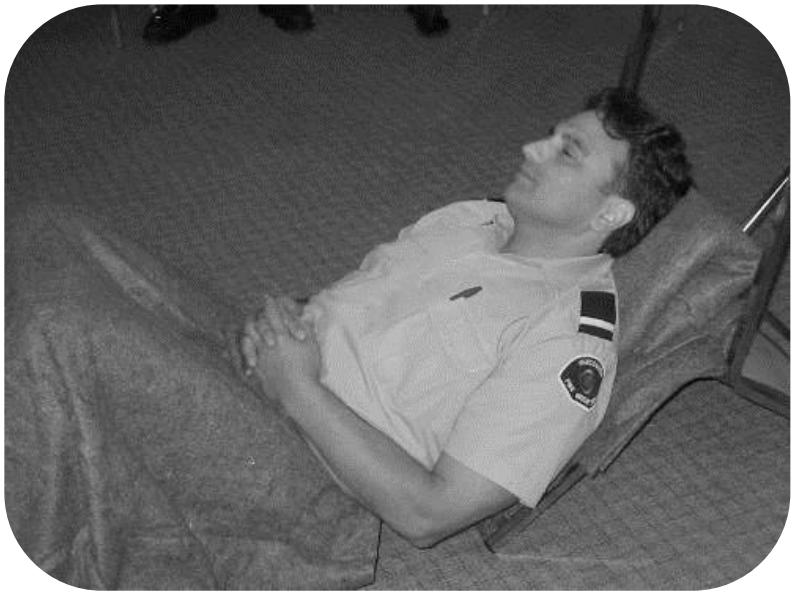
Just maintain direct pressure on the wound, even if you have proper bandages available.

VITALS - *Maintain Vitals*

Now that we have completed our interventions, we need to maintain the person until more advanced medical care arrives.

If the patient Vomits at any time:

Immediately roll them onto their side so the vomit drains from their mouth. When they are finished, roll them back and re-check your ABC's.



- Keep monitoring airway, breathing, and circulation until the Fire Department/ Ambulance takes over.
- Cover the patient to preserve body heat.
- **Depending on the patient's condition you may need to reposition them while you wait for the Fire Department/Ambulance.**

Patient Positioning:

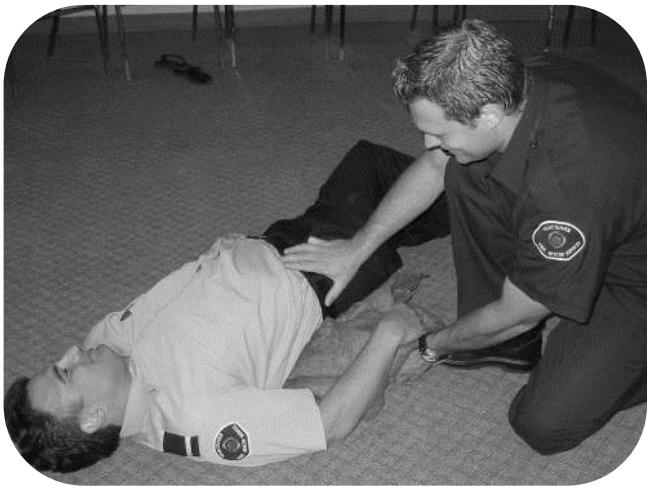
If a patient requires no further treatment, it may be better to reposition them while you wait for help, or if you need to leave them to treat another patient.

Conscious patients
(Semi-Sitting Position)

People with chest pains or breathing difficulty may be more comfortable well-supported in the “semi-sitting” position.

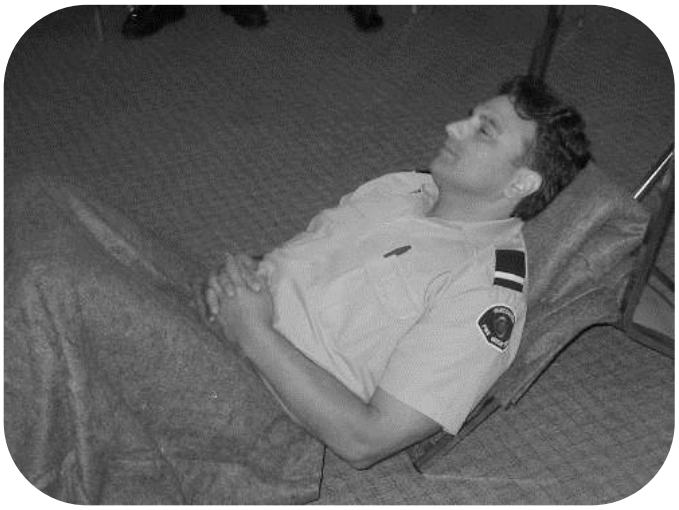
This takes the pressure of the abdominal organs off their diaphragm and makes it easier to breathe.

These patients should not be allowed to move themselves but should be helped into position to keep their hearts at rest.



Unconscious patients
(Recovery Position)

People who are unconscious are at great risk because they cannot manage their airway. Not only does their tongue sag down and block their airway, but they often vomit. If you are sure there is no spinal injury, and they require no further treatment, unconscious patients should be put in the “recovery position”, especially if they need to be left unattended. This will keep their airway open and if they vomit, it will drain naturally.



Women who are *visibly* pregnant

Pregnant women should not lie flat on their backs as the weight of the baby can restrict its own blood supply.

Wedge a pillow or some clothing under the **right** hip to allow good circulation to the baby.

The right side to pad is the Right Side

Spinal Injuries:

All the nerves that connect the parts of the body to the brain run in a tunnel through the vertebrae of the spine. Sometimes a mechanical injury (trauma) can injure the spine or make it unstable, which in turn may injure the nerves. This type of injury could cause permanent paralysis.

Examples of some accidents that may injure the spine are:

- Falls (from higher than 3 meters)
- Head injuries
- Car/Bike/Pedestrian accidents
- Knife or gunshot wounds to the head, neck, or body

Any patient who may have a spinal injury should be treated as if they do.

The principle for treating patients with possible spinal injuries is to keep their body from moving as much as possible, particularly their head. Patients who may have a spinal injury should be kept in the position you find them with their head stabilized in relation to their body.

Although the risk of spinal injury is relatively small, the consequences can be great.

The only times you should move someone with spinal injuries would be:

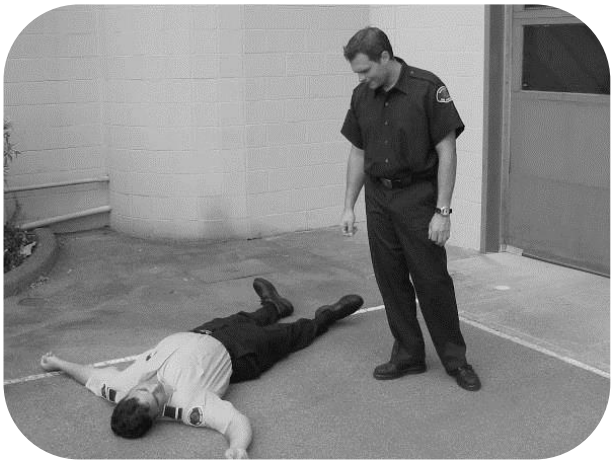
- If you can't tell if they are breathing
- If you need to move them to give first-aid
- If you need to move someone out of danger.

If you do have to move a patient with a possible spinal injury, try to move their head as little as possible.

When you have determined what happened,
you can decide whether spinal injury is a realistic possibility.

If there is a realistic possibility of spinal injury, keep the person still:

- Approach the patient from their line of sight and call out. Tell them you are a first-aider and not to move. If they are awake, ask them if you can help.



- Brace both elbows either on your thighs or on the ground, in a position so that your hands can hold the head.

- With your elbows stabilized, put one hand on either side of the head and hold it still in relation to the body.

If you are alone, move to the patient's head and hold it:

- Tell the patient that you're holding their head to remind them not to move

- Kneel down in line with the patient's head.

- You can open the airway of an unconscious patient and assess their breathing from this position.

- If a person is moving around, don't try to hold them still. Try to talk to them to get them to lie still.

- If there is another person to help you, you can instruct them how to hold the patient's head. If no one is around, you can place objects on either side of the head to hold it still if you need to give further treatment

Patient Positioning with possible spinal injuries or trauma

People who are injured should not be moved unless they vomit or need to be moved to give life-saving treatment.

Unless you can't check the ABC's or you need to give CPR you should not move them.

If you need to move a patient with possible spinal injury, try to hold the head in line with the rest of the body.

If the patient is unconscious their airway must be monitored continuously, especially if they are lying on their back.

END - *Arrival of Advanced Care*

When the Fire Department or Ambulance arrive, they will take over from you. Let them know, what you found and what you did, and any other relevant information about the situation that you know.

Session Summary:

Medical emergencies are usually very chaotic. It can be very hard to remember what to do when everyone (including you) is panicking.

Remember that you can only do one thing at a time, so try to calm yourself and use SAVE System to do one thing at a time in the right order.

If you ever get flustered, or lose your place, just go back and start again with the ABC's. If you are looking after the person's ABC's, you are keeping them alive. Just go back and start again with the ABC's.

Vancouver Firefighters
CPR + First Aid

Section 3

Adult CPR

Navigation Links

Section 3 - Adult CPR

Introduction:

Aim (What)

CPR is the combination of rescue breathing to blow oxygen into a person's lungs, and chest compressions to pump blood through their lungs so it can pick up oxygen and carry it to their heart and brain.

Motivation (Why)

After a few minutes without oxygen, the body's tissues stop working and start to die. If the heart is not pumping blood you must do CPR to get oxygen into the lungs and carry it to the body's tissues. Supplying oxygen to the body's tissues keeps them alive and improves a person's chance of recovery.

Outline (How)

- **How CPR Works**
- **AED's**
- **SAVE System for CPR**

Link (When) **Use these skills for any patient who is not breathing 'normally'**

How CPR Works

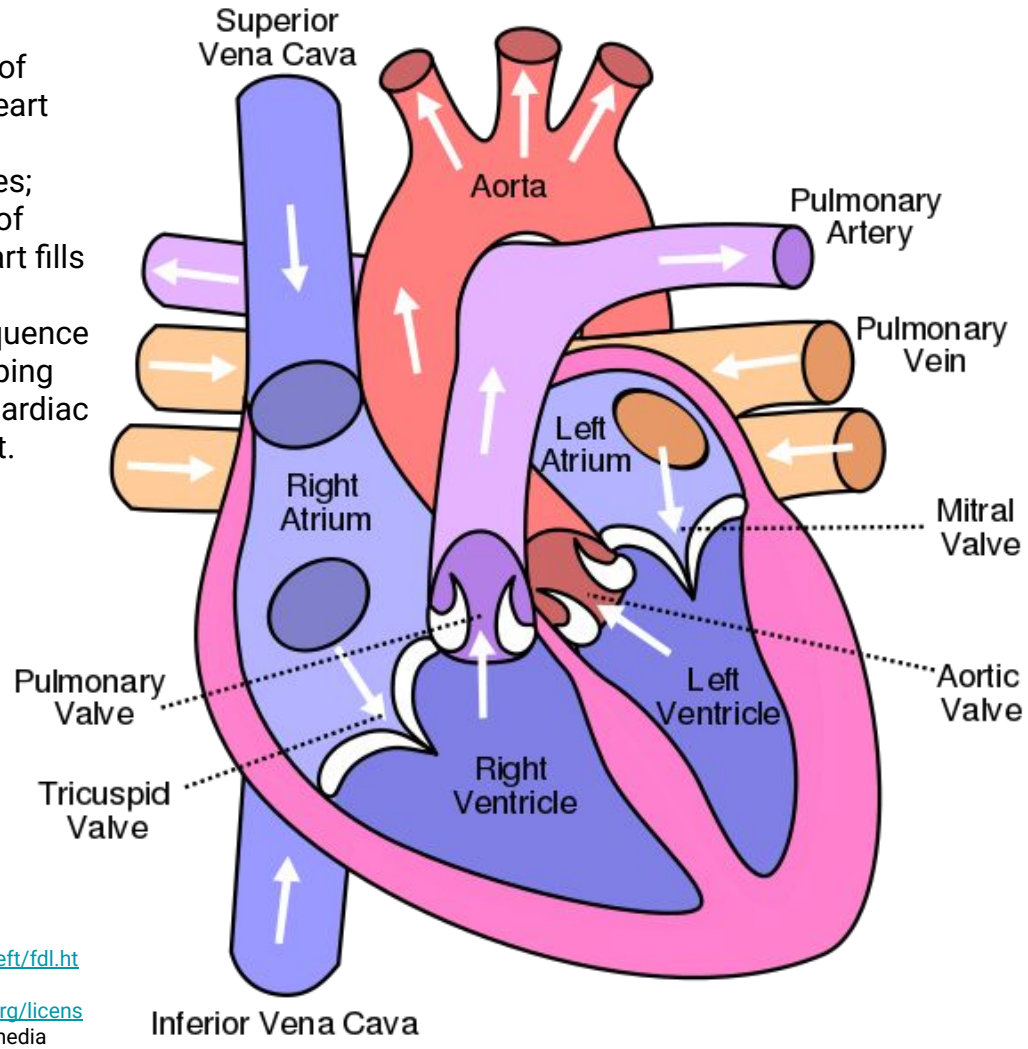
The heart is the body's pump and it works just like a foot pump for an air mattress.

Each chamber has two one-way valves: one that only lets blood into the heart, and one that only lets blood out. When the heart beats, it squeezes blood out through the "out" valve. When it relaxes between beats, it fills up with blood through the "in" valve. This is what we are doing when we compress the chest in CPR. We are actually squeezing the heart between the breastbone and the spine, forcing blood out through the "out" valve to the parts of the body. Then we release the heart allowing it to fill with blood through the "in" valve.

Chest compressions pump blood, just like a foot pump pumps air

During the period of contraction, the heart pumps blood out through the arteries; during the period of relaxation, the heart fills with blood.

One complete sequence of filling and pumping blood is called a cardiac cycle, or heartbeat.



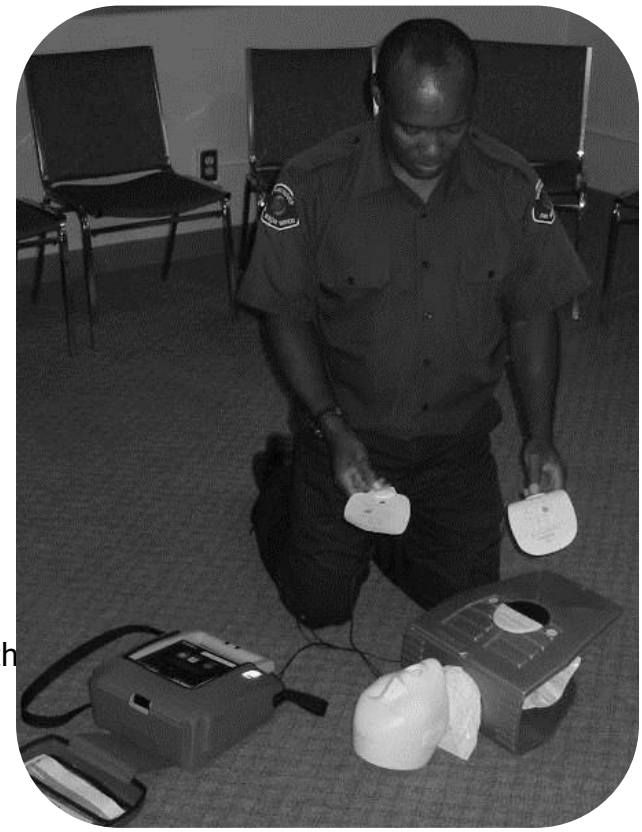
Automatic External Defibrillators

AEDs have been proven to save lives, even when used by people with NO first-aid or medical training.

Automatic external defibrillators, or “AEDs”, are electronic devices capable of analyzing a person’s heart and, if appropriate, ‘shocking’ it. The shock sometimes helps the heart to start beating again on its own.

The faster a person can be treated with an AED, the better their chances of survival. This is why many public buildings and facilities have AEDs installed for use in case of emergency. You should always ask if an AED is available if you witness a medical emergency in a public place.

AEDs are extremely simple to use. They give both visual and voice instructions, and guide rescuers through every step of treating a person whose heart is stopped.



AEDs may be used for adults or children who are unresponsive and are not breathing.

SAVE System for Unresponsive Patients with No Breathing

SAFETY -
Safety Comes First!

Recognize there may be an emergency.

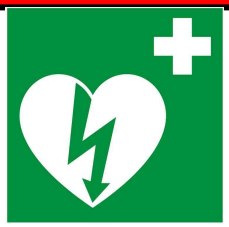
Determine
- Is it Safe?
- What happened?
- Who is Hurt or Sick?

Call out to attract attention and to take charge. Call 911 immediately.

Look around for any possible dangers and make the scene safe for you and the patient.

If there is any danger, DO NOT attempt to give first-aid.

Get an AED.

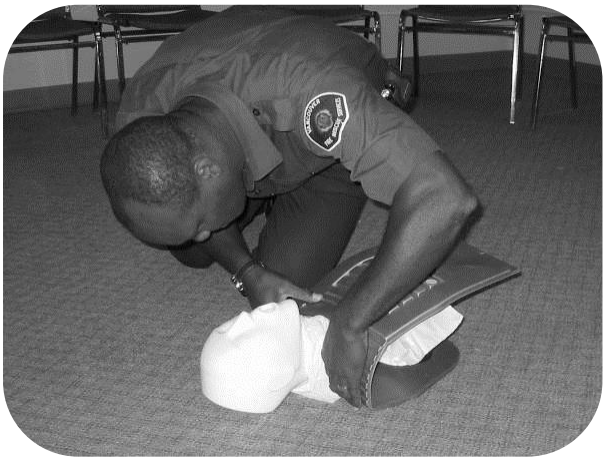


ABC's
Airways, Breathing & Circulation

AWAKE:

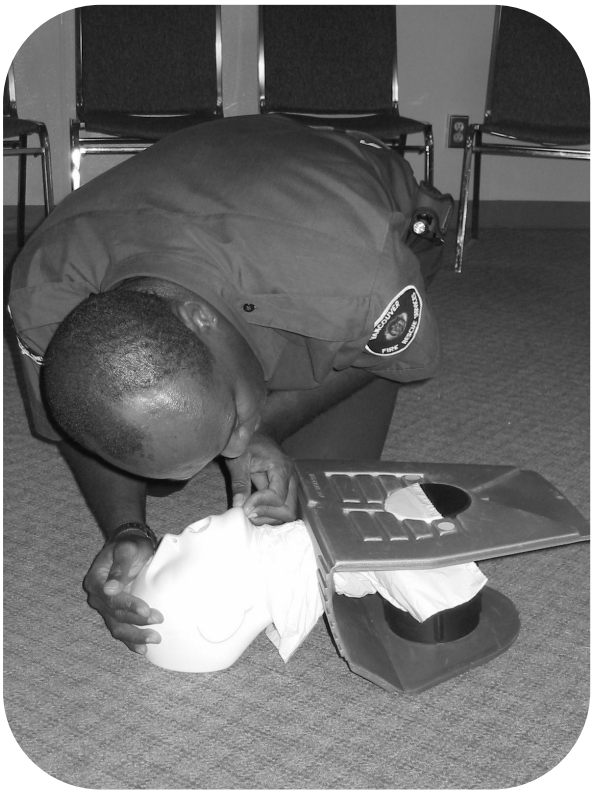
***Try to wake them*:**
- Shout in the patient's ears and pinch their shoulder.

If the patient isn't awake, check their ABC's:



If you haven't called 911 yet:
- If you can't wake the patient up, or if they can't speak to you, call 911 immediately.
- If the patient is injured or in distress, call 911 immediately.

If the patient isn't awake, check their ABC's:



AIRWAY: *Open the Airway*

- If there is or no obvious breathing, or snoring sounds, open the patient's airway.

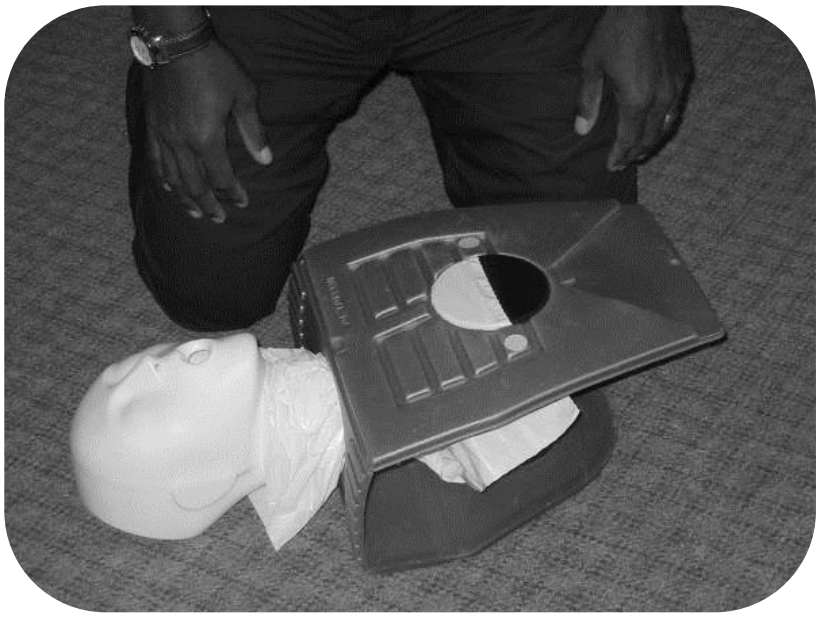
BREATHING:

Look, Listen & Feel

Check for 'normal' breathing:

- Count the number of seconds between breaths at least twice.
- If there are no 'normal' breaths in 10 seconds, the patient is NOT breathing.

If the patient is awake, and can talk to you, you know that they have an Airway, Normal Breathing, and Circulation!



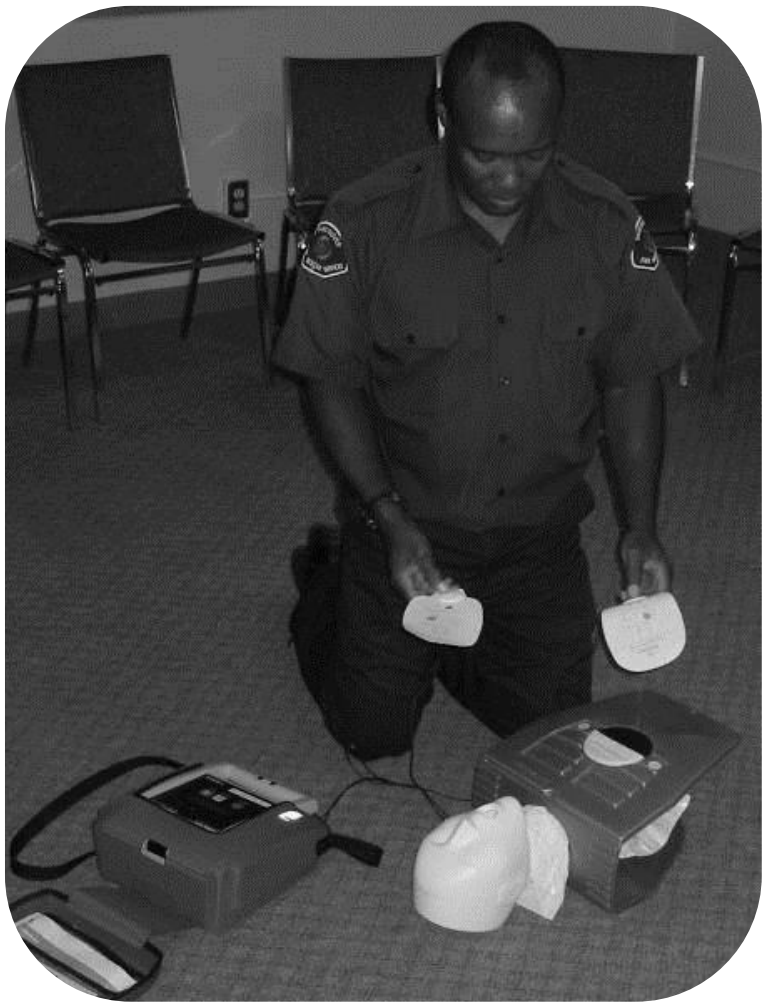
CIRCULATION:

If there is no breathing, or if there is only an occasional 'gasping' breath, start CPR (and AED):

- If necessary, move the patient onto their back on a firm, flat surface.
- You cannot give CPR to a person on a bed or a cushion.
- **The best place to do CPR is on the floor.**
- Kneel beside the patient's chest.

AEDs

You shouldn't attach an AED to any patient unless they don't respond to pain and are not breathing.



If you have an AED with you:

- Turn on the AED
- Expose the patient's chest and follow the directions of the AED to hook it up.
- The AED will tell you what to do as soon as it's turned on.

If an AED is coming but isn't here yet:

- Start CPR
- As soon as the AED arrives, turn it on, and follow the directions of the AED to hook it up.
- If there is another person helping you, one person should continue giving chest compressions while the other person attaches the AED.

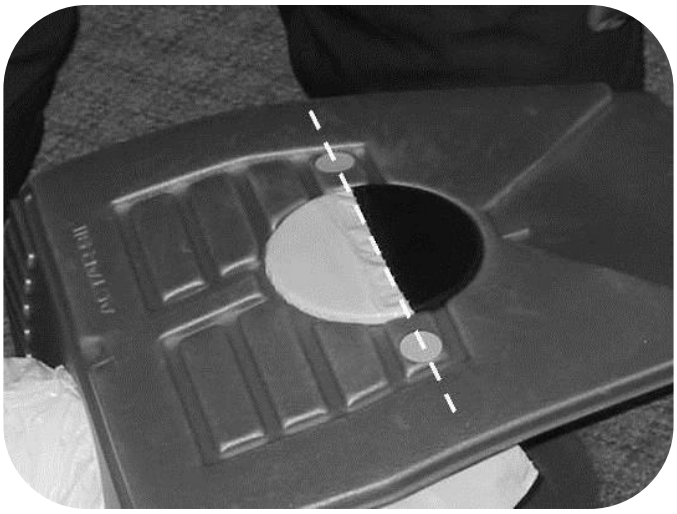
If there is no AED:

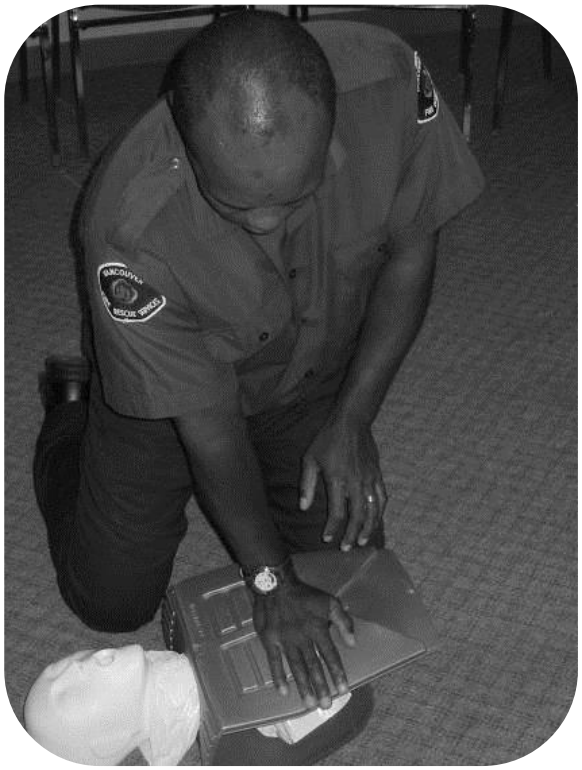
- Give CPR until Fire Department / Ambulance arrives and takes over.

CPR:

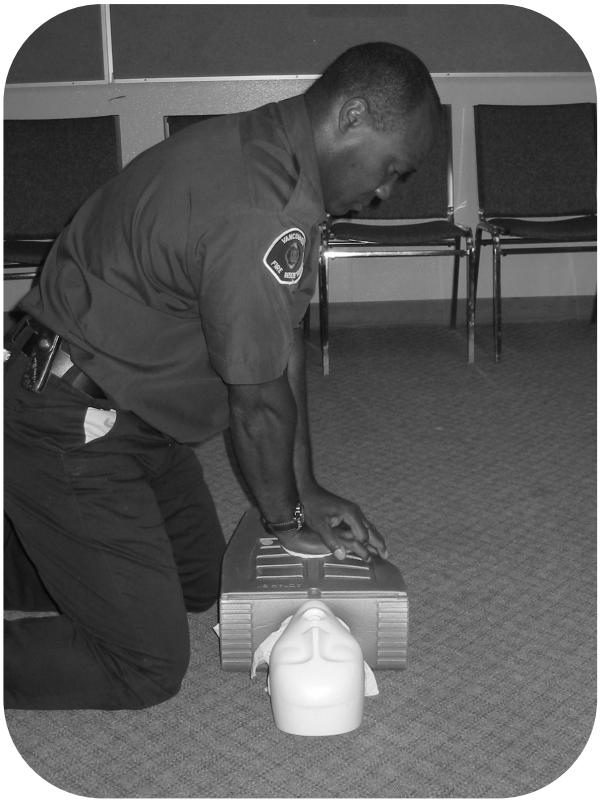
Start by giving 30 Chest Compressions:

- Imagine a line across the patient's chest between their nipples.





- Place the heel of one hand on the patient's breast-bone in the center of the chest right between their nipples.



- Put your other hand on top of the first hand and interlace the fingers. Pull your fingers up so that only the heel of your hand is pressing on the patient's breastbone.
- Rise up on your knees and lock your elbows and so that your arms are straight up and down.
- With your elbows locked, use your upper body weight to compress the chest about 5-6cm (2"- 2.5").
- Then release the chest allowing it to fully rise back to its normal position, but do not allow your hands to shift position.

You need to "Push Hard, Push Fast, and Don't Stop"

You need to "Push Hard, Push Fast, and Don't Stop"

Push Hard:

Compress the chest 5-6cm (2"- 2.5")

Push Fast: *Count out-loud*

"1 and 2 and 3 and 4 and 5 and 1 and 2 and 3 and 4 and 10 and 1 and 2 and 3 and 4 and 15 and 1 and 2 and 3 and 4 and 20 and 1 and 2 and 3 and 4 and 25 and 1 and 2 and 3 and 4 and 30".

Don't Stop:

It is very important NOT to interrupt chest compressions

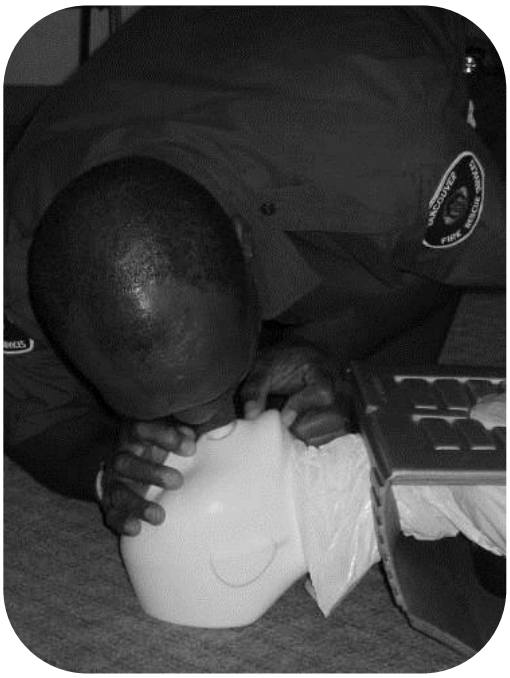
You may hear and feel ribs cracking, but don't stop or reduce compressions.

Press down on the "numbers" and release on the "ands". Make the compression phase equal to the release phase.

Do compressions at a rate of between **100 & 120 per minute.**

When you start chest compressions, it takes a few seconds for circulation to 'build-up'.

Every time you stop compressions, circulation stops. Then it takes a few more seconds of chest compressions before it builds up again.



Don't interrupt chest compressions except to give rescue breaths, or to hook up an AED.

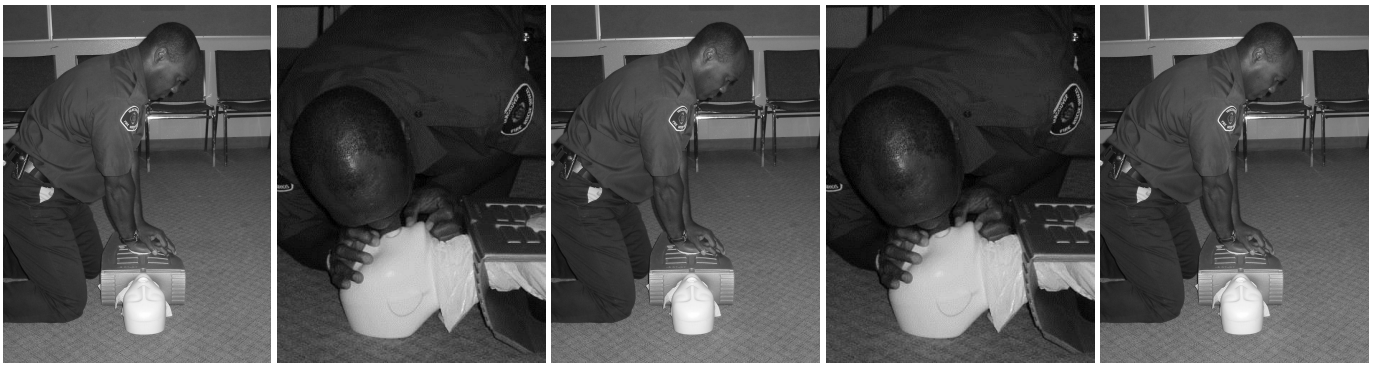
Give 30 compressions, then move to the head and give 2 breaths:

- Keeping the airway open, pinch the nostrils closed and make a firm seal with your lips on the patient's mouth.
- Give a gentle breath over about 1 second.
- Release the nostrils and allow the air to exhale, then immediately pinch the nostrils and give another breath.
- Blow just enough air until you can see the chest start to rise from the corner of your eye.

If you are unwilling to give mouth-to-mouth breathing, just do chest compressions.

Give continuous chest compressions without pausing for breaths.

Continue giving cycles of 30 compressions followed by 2 breaths until help arrives, or the patient starts to move:



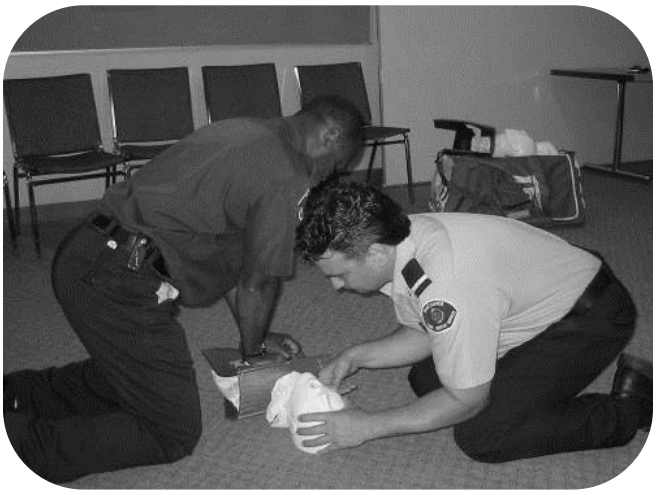
VITALS - *Maintain Vitals*

We need to maintain the person until more advanced medical care arrives. Keep monitoring ABC's

END - *Arrival of Advanced Care*

When the Fire Department or Ambulance arrive, they will take over from you. Let them know, what you found and what you did, and any other information relevant to the situation that you know.

Two Person CPR:



It is far better if two (or more) people take turns doing chest compressions. After just a couple of minutes you will start to get tired and you won't be able to press as hard on the chest. Restart CPR with chest compressions.

If there are two (or more) people that know CPR, one person should be in charge of the SAVE System and do the chest compressions, and the other person can do the breaths.

You should trade places about every 2 minutes so the person doing compressions doesn't get tired. The change should take no more than 5 seconds to minimize the interruption to chest compressions.

“No CPR” Orders

(Sometimes called “DNR” or “DNAR” orders).

You may know someone, or have someone in your family who has a “No CPR” order.

People who are in the last stages of a terminal illness sometimes choose, in consultation with their family and their doctor, not to have CPR when their heart stops. Their doctor may then write an order to not attempt resuscitation in accordance with those choices. “No CPR” orders help the patient and their family to accept the finality of death with dignity and respect.

The decision for a “No CPR” order is based on whether or not resuscitation is likely to increase the person’s length or quality of life.

A “No CPR” order is a legal document signed by the patient and the patient’s doctor.

If a person has a “No CPR” order, you should not start CPR.

Note: If someone in your family has a ‘No CPR’ order you should post it on the refrigerator door for Fire Department/Ambulance personnel to find it.

Session Summary:

Unlike on TV, CPR alone will probably not bring someone back to life. But it will make it much more likely that advanced care will.

When you perform CPR on a person you will probably not see them revive. It is not unusual for people to be unconscious for several days after a heart attack. In fact, many people whose hearts have stopped may not be able to be revived at all.

Remember though, the ‘success’ of your treatment does not depend on whether the patient is able to be revived or not. Your treatment is considered to be successful as soon as you decide to step in and give first-aid.

Vancouver Firefighters
CPR + First Aid

Section 4

Heart Attacks & Strokes

Navigation Links

Vancouver Firefighters
CPR + First Aid

Section 4 - Heart Attacks & Strokes

Introduction:

Aim (What)

People have a very good chance of surviving a heart attack if they receive prompt medical treatment. Prevention is the most important treatment for cardiovascular disease.

Motivation (Why)

Many people having a heart attack or stroke wait for hours before they go to the hospital. Someone like you who can recognize a heart attack or stroke may get a patient to the hospital quickly and minimize the permanent effects of their illness. You can also reduce your own chances of having a heart attack or stroke by making healthy lifestyle choices.

Outline (How)

- **Common Cardiovascular Diseases**
- **Risk Factors for Cardiovascular Disease**
- **Heart attacks and strokes**
- **The Chain of Survival™**

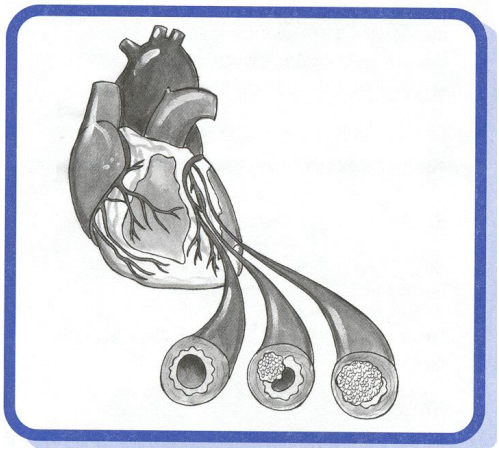
Link (When)

Use this to recognize when someone might be having a medical emergency, and to make healthy lifestyle choices to reduce your own risk of having a heart attack or stroke.

Cardiovascular Diseases:

People who have heart attacks or strokes usually have some form of cardiovascular disease leading up to it, but most cardiovascular diseases display no symptoms. Unfortunately, for most people a heart attack or stroke is the first sign of cardiovascular disease.

Three of the most common cardiovascular diseases are:



Atherosclerosis

Atherosclerosis is the build up of plaque deposits in arteries narrowing them and making them inelastic. Narrowed arteries cause higher blood pressure, and restricted blood flow to vital organs, including the heart and the brain. Atherosclerosis starts as early as childhood and is accelerated by high blood cholesterol and smoking and is the principle cause of cardiovascular disease. High cholesterol levels display no symptoms. Starting at age 20 you should attend a clinic or see your doctor to have your blood tested for your cholesterol level.

High Blood Pressure

Blood pressure is the force of the blood on the artery walls. Blood pressure naturally rises and falls during the day, but when it is consistently high it stresses the heart muscle and blood vessels, so that over time they 'wear-out'. High blood pressure displays no symptoms and can lead to serious cardiovascular disease. Starting at age 20 you should attend a clinic or see your doctor to be tested for, and manage your blood pressure.

Stable Angina

Some people are diagnosed with this condition by their doctor. It is caused by atherosclerosis in the coronary arteries, which restricts the blood supply to the heart muscle limiting it's ability to work harder. Angina attacks are usually brought on by physical activity or strong emotions and are relieved by rest and medication. Angina is often the precursor to a heart attack, the only difference is that after an angina attack the heart can recover with rest and medication (nitro-glycerin spray). If angina pain is not relieved with 1 'spray' of nitro-glycerin, you should call 911 immediately.

Risk Factors:

Certain factors increase your risk of cardiovascular disease. These factors all add up, so the more you have, the more likely you will have a heart attack or stroke. Starting when you are a child, you should make healthy lifestyle choices to reduce your risk of cardiovascular disease.

Certain factors are out of your control and cannot be changed:

- **Genetics** – if your family has a history of cardiovascular disease at a young age then you are at risk.
- **Age** – all people over 45 are at risk.
- **Diabetes** – if you have diabetes you are more at risk.

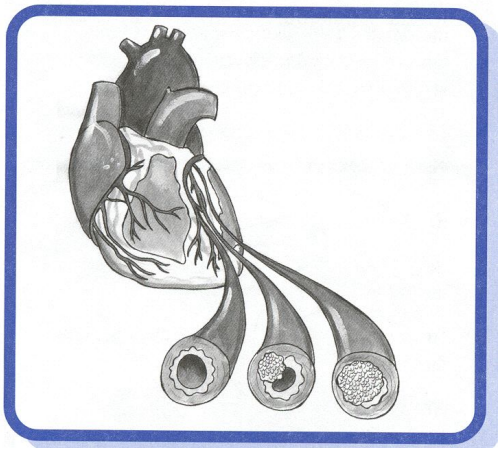
Even if you have uncontrollable risk factors, you can still manage your risk of cardiovascular disease by controlling these factors:

- **Smoking** – smoking accelerates the deposit of fatty plaque in the arteries and is the single biggest factor.
- **Drug use** – particularly cocaine and other stimulants.
- **High blood cholesterol** – cholesterol is a type of fat that forms plaque deposits in arteries (*atherosclerosis*).
- **High blood pressure** – puts all of your major organs under stress. It also makes your heart 'wear-out' from working so hard all the time.
- **Obesity** – being obese puts your body under stress and also puts you at a higher risk for type II diabetes.
- **No exercise** – exercise can reverse some of the effects of cardiovascular disease and reduce harmful cholesterol levels.
- **Stress** – chronic stress in your life elevates your blood pressure and stresses your body.
- **Blood sugar levels in diabetics** – managing your blood sugar levels reduces your risk.

You should make smart choices about your lifestyle, especially if your family has a history of cardiovascular disease or diabetes.

Heart Attacks and Strokes:

The heart muscle needs a constant supply of oxygen rich blood. Oxygen is delivered to the heart muscle by a network of blood vessels on its outer surface called coronary arteries.



Brain tissue also needs a constant supply of oxygen rich blood.

Any blockage of blood flow to any part of the heart muscle or brain tissue, creates a life-threatening medical emergency.

Heart Attack

A heart attack occurs when the blood supply to a part of the heart is significantly reduced or stopped. This is typically caused by the rupture of an atherosclerotic plaque deposit in one of the coronary arteries, which causes the formation of a blood clot that fully or partially blocks the blood supply to part of the heart. When this happens that part of the heart muscle goes into distress and starts to die. The longer a patient's heart is in distress, the more of the heart's muscle tissue dies.

Many people mistakenly think that a 'heart attack' is the same as 'cardiac arrest'.

- The heart doesn't necessarily stop when a person has a heart attack.

Conscious Heart Attack

Sometimes a person having a heart attack may be awake and only have symptoms of being sick. Even though the heart is in distress, it may be able to keep pumping. This condition can go on for hours or even days, but the longer it goes untreated, the more damage there is to the person's heart.

Cardiac Arrest

Sometimes a person's heart will stop pumping immediately (cardiac arrest). A person whose heart has stopped needs CPR within minutes to have a chance for recovery.

Recognizing a Conscious Heart Attack:

Heart attacks where the person remains conscious are often not recognized for hours or even days. If you suspect a person with any of the following symptoms may be having a heart attack you should phone 911 immediately, particularly if the person has some of the risk factors for cardiovascular disease.

Signs and Symptoms of a Heart Attack:

- **Chest pains** – sometimes spreading to the shoulders, arms, neck, or jaw. Patients typically describe the pain as "a huge weight on my chest" or "my chest is being squeezed in a vise".
- **Sweating** – with pale, cool skin.
- **Shortness of breath** – "I can't breathe", or "I can't catch my breath"
- **Indigestion or heartburn**
- **Nausea, vomiting** – Often causes people to mistake a heart attack for the flu
- **Anxiety, fear of dying**

"Time is muscle"
The longer you wait before getting treatment, the more heart muscle is damaged.

Some people, especially women, experience only mild discomfort or no pain at all. Be alert for other signs such as weakness, nausea, shortness of breath, and/or fatigue.

You may need to convince them to call 911 as it is usual for people to be in denial.

Caring for conscious patients with Signs or Symptoms of a Heart Attack

- Call 911 immediately, even if you're not really sure it's a heart attack,
- Position the person in the Semi-Sitting Position, but don't move them around too much. Anything which may cause the person's heart rate to go up will worsen their condition.
- Reassure them and try to calm them down.
- While you are waiting for Fire / Ambulance, encourage the person to **chew**;
  - 1 Adult Aspirin - also known as acetylsalicylic acid (ASA) **or**
  - 2 Children's (Low Dose) Aspirin,
  - (***unless they are allergic to aspirin, have asthma or have been told by their doctor not to take aspirin***)

If a person has any of the symptoms of a heart attack you should put them at rest and call 911 immediately.

The permanent effects of a stroke can be minimized by emergency hospital treatment. If a person has any of these symptoms call 911 immediately.

Stroke

A stroke occurs when one of the arteries supplying blood to a part of the brain is obstructed by advanced atherosclerosis and/or a blood clot. It may also be caused infrequently as a result of a blow to the head. After a few minutes, the affected brain tissue stops working and starts to die.

Stroke patients sometimes appear as though they are "drunk" and may only want to go to sleep. Minutes matter, the faster that you can recognize the signs of stroke, the faster they can get to the hospital for treatment.

Recognizing Stroke

FAST is an easy way to remember the signs of stroke. If you spot the signs call 911 right away.

Other symptoms of a stroke may include:

- Numbness or weakness of the face, arm, or leg, usually just on one side of the body
- Loss of vision or blurred vision, especially in one eye
- Unexplained dizziness, loss of balance or sudden falls
- Difficulty speaking or understanding speech
- Sleepiness or loss of consciousness
- A different kind of stroke can sometimes be caused by a blow to the head.

Caring for conscious patients with Signs or Symptoms of a Stroke

- Call 911 immediately, even if you're not really sure it's a heart attack,
- Position the person in the Semi-Sitting Position, but don't move them around too much. Anything which may cause the person's heart rate to go up will worsen their condition.
- Reassure them and try to calm them down.

T.I.A.'s

A TIA or "mini-stroke" is caused by a temporary blockage in one of the arteries in the brain. When the blockage clears, the blood supply is quickly restored and symptoms disappear. The person may show signs of having a stroke, but then get better.

A TIA is a warning sign of a critical medical condition.

- Approximately 10% of people who have a TIA will have a stroke within 1 month unless they receive treatment.

Call 911 immediately if a patient shows signs of a stroke even if the symptoms go away.

The Chain of Survival™:

These are the steps identified by the Heart and Stroke Foundation of Canada for the treatment of heart attacks and strokes.

Each step is like a link in a chain, and a chain is only as strong as it's weakest link. If only one of the links is missing, or weak, the patient's chances of recovery go down.

- **Healthy lifestyle choices** to reduce your risk of cardiovascular disease
- **Early recognition** of a heart attack or stroke
- **Early activation of 911** as soon as you recognize an emergency
- **Early CPR**, if necessary, to maintain body tissues
- **Early defibrillation** (electric shock using an "AED") to reorganize the heart's contractions
- **Early advanced care** including drug therapy
- **Early rehabilitation** following resuscitation

Studies have shown that it is far more important for a bystander to give CPR, than for a person to get the very best treatment in a hospital.

The most important steps are the first ones. Ordinary people like you, trained in CPR, give people the best chances for recovery after a heart attack.

Shock

Shock is frequently referred to on TV when people are seriously ill. Although this is realistic, because any person who is severely injured or ill will be in shock, it doesn't just happen by itself. Shock happens because a person is seriously injured or ill.

Shock is caused by inadequate circulation of oxygen to the body's tissues. The most common causes of shock are heart attack, loss of blood from severe bleeding, stopped breathing, or occasionally severe allergic reaction.

Caring for patients with Signs or Symptoms of Shock

The best treatment for shock is to treat the injury or illness that is causing it. The best treatment for any patient, regardless of whether they are in shock or not, is to manage their ABC's using the SAVE System.

Session Summary:

The treatment of heart disease and stroke starts in early childhood with healthy lifestyle choices. The choices you make directly affect your risk of cardiovascular disease.

Unfortunately, even people with low risk for cardiovascular disease could have a heart attack or stroke. If someone like you can recognize a heart attack or stroke, and get immediate treatment, you can minimize the permanent effects to the person's health.

If you even *think* a person *might* be having a heart attack or stroke call 911 immediately. The 911 system is set up to determine if there is an emergency and the ambulance operators are trained paramedics; so if you aren't sure, phone anyway. Firefighters and paramedics would rather respond to 100 false alarms than 1 patient who waited too long.

Vancouver Firefighters
CPR + First Aid

Section 5

Adult Choking

Navigation Links

Section 5 - Adult Choking

Introduction:

Aim (What)

Choking happens when something blocks a person's airway.

Motivation (Why)

When people choke on food it usually happens when they are eating with other people. You may be in a restaurant or eating with a person when they start choking. It is extremely likely that you will either see someone choking or have it happen to you at some time in your life.

Outline (How)

- **Conscious Choking Patients**
- **SAVE System for Unconscious patients**

Link (When)

You will use these skills when you see someone choking.

Conscious Choking Patients:

Choking can be caused by drinking too much before eating, laughing and talking while eating, or not chewing food properly. These causes typically occur in restaurants, which is where you are likely to need to use these skills.

People with dentures are especially at risk from choking.

Many people run to the bathroom when they start choking in a restaurant.

If you suspect someone is choking, you should follow them and check to see if they are able to talk to you.

There are two levels of airway obstruction:

1. Partial Airway Obstruction:

The person can talk and cough forcefully.

- If a person can cough forcefully it means they can get enough air into their lungs to live, *and to clear their own airway*.
- Coughing is the body's way of clearing the airway.

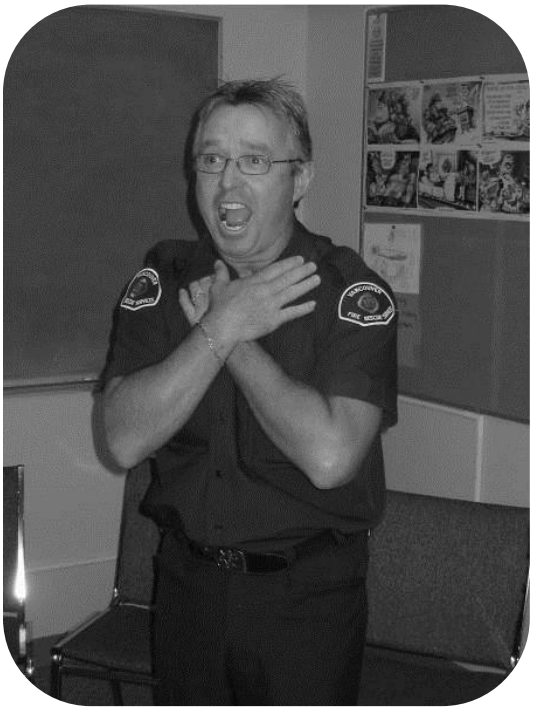
2. Complete Airway Obstruction:

The person is unable to talk, cough, or breathe.

- If a person can't cough, or can't cough forcefully, they can't get enough air into their lungs.
- People who can't talk or cough need **immediate treatment.**

The person may hold both hands to their neck.
This is the Universal distress signal for choking.

Universal distress signal for choking.



SAVE System for Choking Patients:

SAFETY-
Safety comes First!

Recognize there may be an emergency.

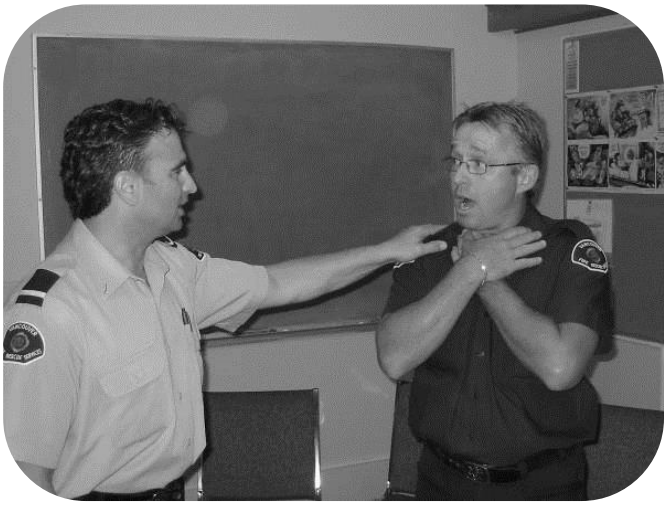
Determine

- Is it Safe?
- What happened?
- Who is Hurt or Sick?

Call out to attract attention and to take charge.

Ask the person "Are you choking?"

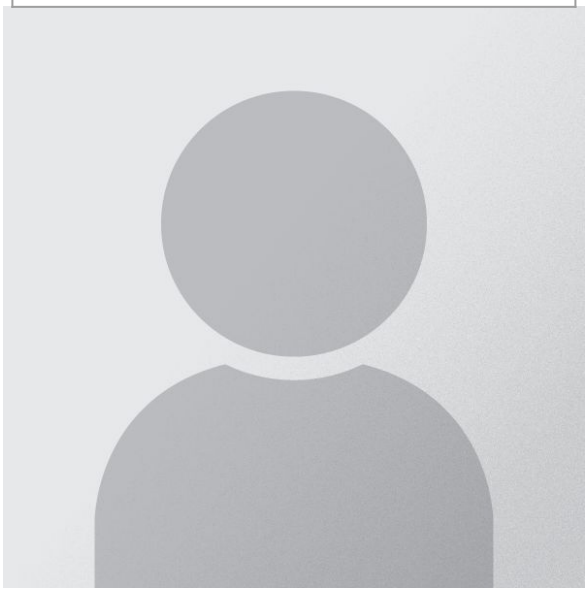
ABC's
Airways, Breathing & Circulation



If the person CAN cough:

- Do not leave the patient alone.
- Tell the person you know CPR and ask if you can help.
- Stand close by the patient and encourage them to cough.
- If the situation does not improve or worsens, have someone call 911.

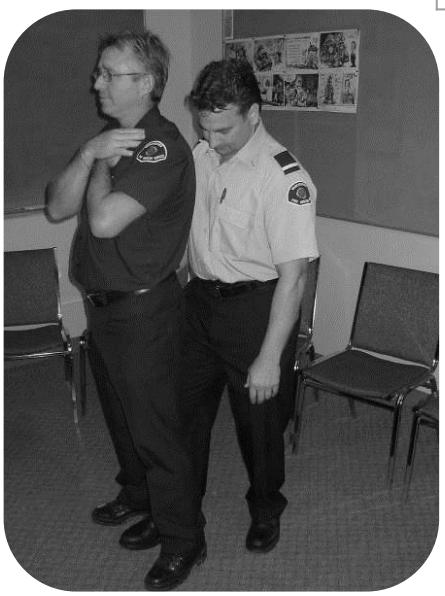
Back Blows



If the person CAN'T cough:

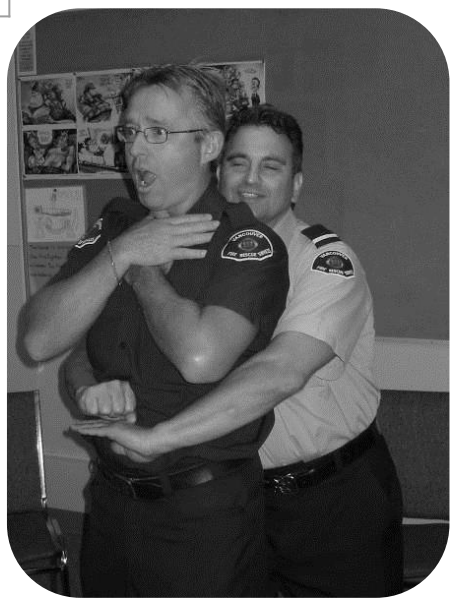
- Tell the person you know CPR and ask if you can help.
- If someone else is present they should phone 911, but don't delay treatment to call 911 yourself.
- Move behind the patient and position yourself to administer back blows.
- Lean the person forward while supporting their weight with your arm.
- Give 5 firm back blows.

Abdominal Thrusts

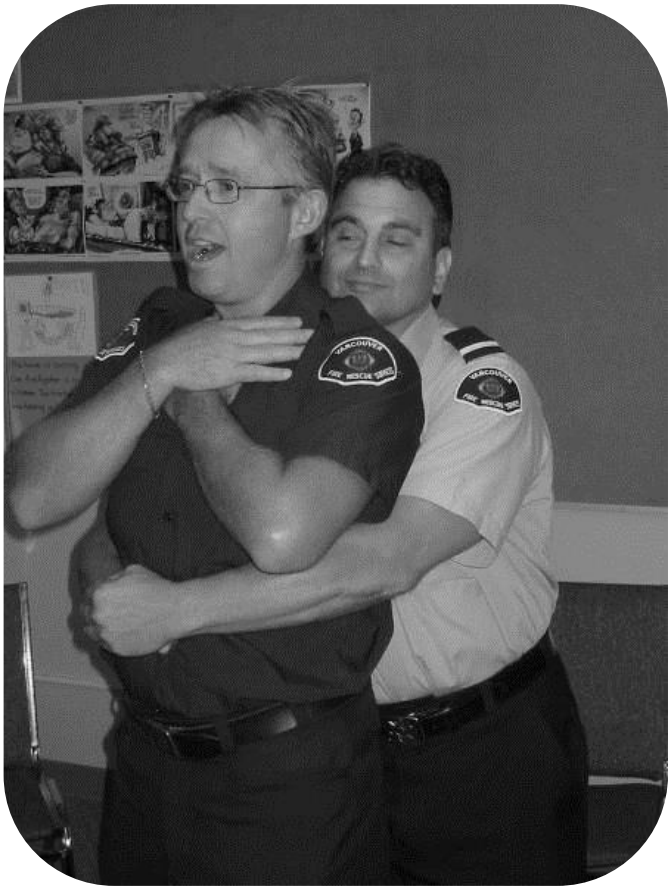


Position yourself to administer Abdominal Thrusts.
Place one foot between the person's feet and brace your other foot to the rear.

Wrap your arms around the patient's waist at the level of their hipbones.



Make a fist with one hand and place it thumb side in against the patient's stomach.



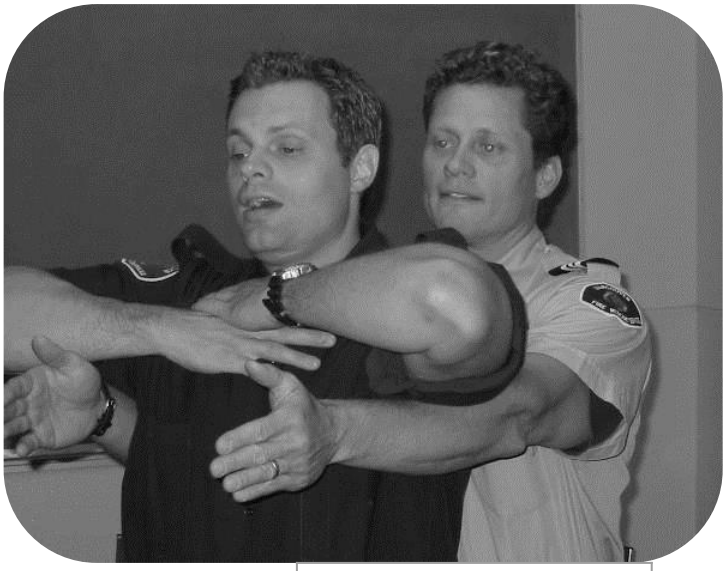
- **Your fist should be just above the patient's belly button.**
- Put your other hand on top of the fist.
- Give 5 hard sharp "J" thrusts, in and up.
- Alternate 5 back blows to 5 abdominal thrusts until the patient "pops or drops" – either the blockage is cleared, or the patient collapses.
- If the patient collapses: carefully lower them to the ground protecting their head and your back.

Anyone who has received abdominal thrusts should be seen by a doctor because they may have damage to their abdominal organs.

Pregnant or Obese Choking Patients

If a person is obese you may not be able to reach around their waist. If a person is pregnant you should not press on the baby. For these patients you still give back blows, but you would give chest thrusts instead of abdominal thrusts.

- Move behind the patient and position yourself to administer back blows.
- Lean the person forward while supporting their weight with your arm.
- Give 5 firm back blows.
- Wrap your arms around the patient's chest at the level of their armpits



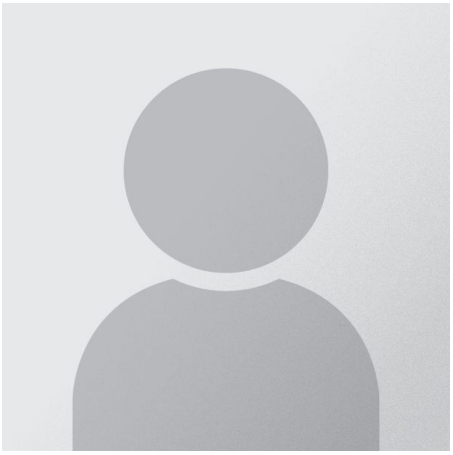
Chest Thrusts

- Make a fist with one hand over the center of the chest
- Place the other hand on top and give five chest thrusts.
- Alternate 5 back blows to 5 chest thrusts until the patient "pops or drops" – either the blockage is cleared, or the patient collapses.
- If the patient collapses: carefully lower them to the ground protecting their head and your back.

If You Are Alone

If you are alone and you start choking, there are some things you can do:

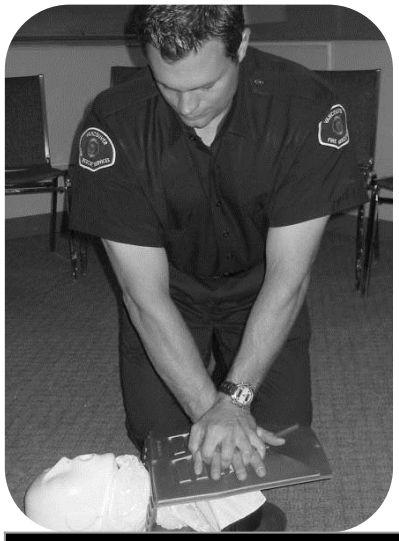
- Phone 911. Even if you can't talk, the 911 "Caller-ID" system will show your address (not from a cell phone) and help will come.
- Get outside to a place where you will be found. In an apartment, go into the hallway and pull the fire alarm.
- You can give yourself abdominal thrusts with your fist or the back of a chair.

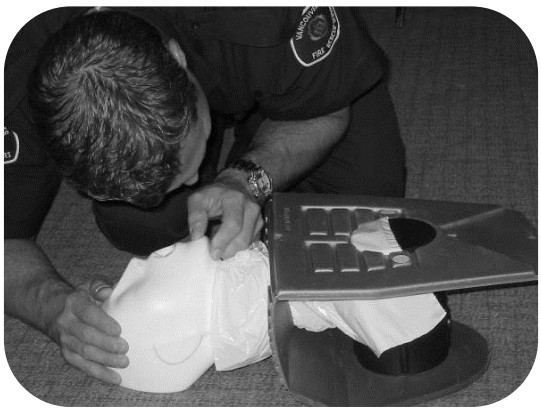


Unconscious Choking Patients:

Although it is uncommon, you may encounter a person who is unconscious from choking. This may be somebody that you find unconscious, or somebody you have been giving abdominal thrusts to. In either case, you should assess the patient following the SAVE System, and if the person is unresponsive and not breathing, start CPR.

- If a choking patient becomes unconscious, you should start CPR.
- The only difference is that before you try to give the two breaths you should look in the mouth for foreign objects.





The most common reason for choking in unconscious people is that their airway isn't opened properly.

Always attempt to re-adjust a patient's airway if you are having difficulty giving rescue breaths.

VITALS - *Maintain Vitals*

We need to maintain the person until more advanced medical care arrives. Keep monitoring ABC's

END - *Arrival of Advanced Care*

When the Fire Department or Ambulance arrive, they will take over from you. Let them know, what you found and what you did, and any other information relevant to the situation that you know.

Session Summary:

It is likely that you will be nearby when a person starts choking at some time in your life. It usually happens in public restaurants and can be very dramatic. Choking is the one condition where your treatments can result in an "instant cure".

Vancouver Firefighters
CPR + First Aid

Section 6

Basic Life Support for Children

Navigation Links

Section 6 - Basic Life Support for Children

Introduction:

Aim (What)

Because children are smaller, they require "smaller" techniques for basic life support.

Motivation (Why)

As an adult you may be the caregiver of a child who is in distress. It will be your responsibility to give aid.

Outline (How)

- **General information on Medical Emergencies in Children**
- **CPR for Children**
- **Treatment for Choking Children**

Link (When)

Use these skills for patients who are 1 year to 8 years old but don't be too concerned with the actual age. Children techniques are appropriate for a large infant, and infant techniques are appropriate for a very small child. Note that a 1 yr. old child may not be able to walk yet.

Prevention of Childhood injuries

By far the leading cause of death in children is unintentional injury which is responsible for more deaths than all other causes combined. Most of the leading causes of unintentional injury such as car crashes, drowning, burns, and firearms accidents, are preventable.

You should make sure that children use proper restraint systems in cars (properly installed car seats, etc.), learn water safety through swimming lessons, learn fire and kitchen safety through your local fire department, and that any firearms are stored securely.

The greatest potential for reducing child deaths is through prevention.

Medical Emergencies in Children

The usual reason a child's heart goes into cardiac arrest is because they aren't breathing. When a child stops breathing, they are affected much more quickly than adults. Although it is important to call 911 quickly, it is more important to start CPR first to get oxygen into their body.

If there is another person available, tell them to phone 911 while you start treatment.

Other than when you call 911, the SAVE System for children is the basically the same as for adults.

If you are alone when a child has a medical emergency:

- Start the SAVE System right away
- If you have a mobile phone call 911
- If the child is not breathing, give 2 breaths and then 5 'cycles' of 30:2 CPR first, *then* go to call 911.
- If you have to go to a phone, carry the patient with you. If the child is too big for you to carry, turn them to the recovery position while you get help (and an AED).
- Get back as quickly as possible and restart CPR.

SAVE System for Unresponsive Children with No Breathing

SAFETY- *Safety comes First!*

Recognize there may be an emergency.

Determine

- Is it Safe?
- What happened?
- Who is Hurt or Sick?

Call out to attract attention and to take charge.
If you have a mobile phone call 911 immediately.

If there is another person available, tell them to phone 911.

Take a deep breath and try to calm yourself down while you look around for dangers and talk to witnesses to find out what happened:

If you see a child that is injured, or if you can't wake a child up, then it is a medical emergency.

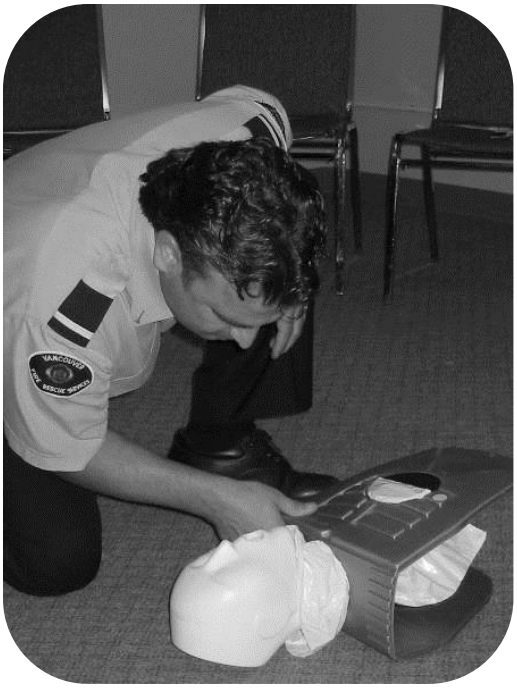
If you do not have a mobile phone and there is no one else around don't stop to call 911:

- Follow the SAVE System, and if necessary give 2 breaths, then 5 cycles of 30 compressions and 2 breaths, then call 911.

Get an AED.

Many public buildings are equipped with life-saving AED's. Ask a security guard or staff member if one is available. If you are alone and you know where an AED is, go and get it first, then return to start treatment.

ABC's - *Airways, Breathing & Circulation*



AWAKE:

Try to wake the Child:

- Shout in the patient's ears and pinch their shoulder.

If the patient isn't awake, check their ABC's:

Children (and infants) have relatively large heads in relation to their bodies.

It can be difficult to tilt their head back far enough to open their airway when they are lying on a flat surface.

AIRWAY: *Open the Airway*

- Put one hand on the patient's forehead
- Put 2 or 3 fingers of the other hand on the edge of the patient's jaw.
- Push down on the forehead and up on the jaw to tilt the patient's head back as far as it will go.

If you need to open the airway, you need to hold it open continuously

If the child is lying on a flat surface, place a firm pad such as a towel under their neck to allow their head to tilt back.

If the patient <u>is</u> awake and can talk to you, you know that they have an Airway, Normal Breathing, and Circulation!

BREATHING: *Look, Listen & Feel*

Children and babies often have breathing patterns that are irregular, but are adequate. Look for breaths that *average* no more than about 5 seconds apart.

As in adults, occasional 'gasping' breaths are not considered "normal"

Check for 'normal' breathing:

- Count the number of seconds between breaths at least twice.
- If there are no 'normal' breaths in 10 seconds, the patient is NOT breathing.

CIRCULATION:

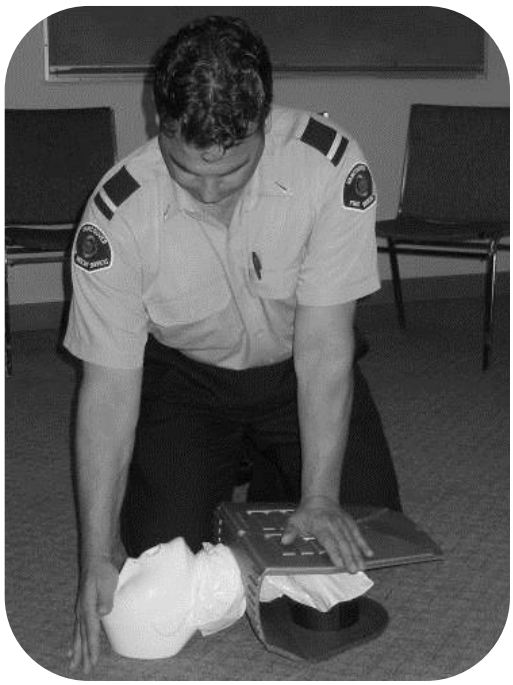
If there is no breathing, or if there is only an occasional 'gasping' breath, start CPR (and AED):

- If necessary, move the patient onto their back on a firm, flat surface. You cannot give CPR to a person on a bed or a cushion. The best place to do CPR is on the floor.

The reason children's and babies' hearts stop is usually because they aren't breathing, and their heart has run out of oxygen.

If you find a child who is not breathing, you should immediately give 5 cycles of 30 compressions and 2 breaths before you call for help (if no one else is around) and before you hook up an AED.

Now give CPR:



- Kneel beside the patient's chest.
- Depending on the size of the child and your own size, you may use one hand to compress the chest, or you may find it easier to use 2 hands.
- Place the heel of 1 or 2 hands in the center of the patient's chest right between their nipples.
- Rise up on your knees and lock your elbow(s) so that your arm(s) are straight up and down.

- With your elbow(s) locked, use your upper body weight to compress the chest about ⅓ **of the front to back depth of the chest**. (no deeper than 6 cm or 2.5")
- Then release the chest allowing it to fully rise back to its normal position, but do not allow your hands to shift position.

Push Hard:

Compress the chest about ⅓ of the front to back depth of the chest.
(no deeper than 6 cm or 2.5")

Push Fast: *Count out-loud*

"1 and 2 and 3 and 4 and 5 and 1 and 2 and 3 and 4 and 10 and 1 and 2 and 3 and 4 and 15 and 1 and 2 and 3 and 4 and 20 and 1 and 2 and 3 and 4 and 25 and 1 and 2 and 3 and 4 and 30".

Don't Stop:

It is very important NOT to interrupt chest compressions

Don't interrupt chest compressions except to give rescue breaths, or to phone 911 or hook up an AED.

Press down on the "numbers" and release on the "ands". Make the compression phase equal to the release phase. Do compressions at a rate of between **100 & 120 per minute.**

It is very important not to stop chest compressions

When you start chest compressions, it takes a few seconds for circulation to 'build-up'.

Every time you stop compressions, circulation stops. Then it takes a few more seconds of chest compressions before it builds up again.

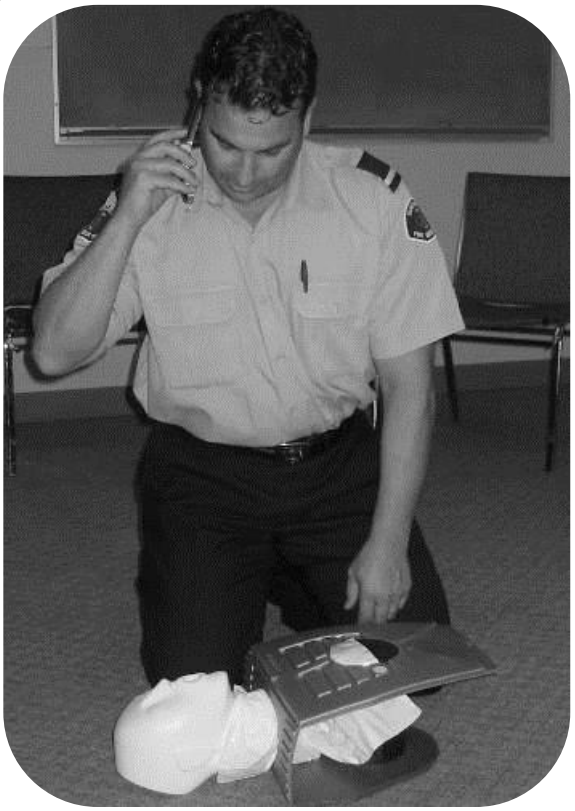
Give 30 compressions, then move to the head and give 2 breaths

Keeping the airway open, pinch the nostrils closed and make a firm seal with your lips on the patient's mouth.

- Give a gentle breath over about 1 second

- Blow just enough air until you can see the chest start to rise from the corner of your eye.
- Release the nostrils and allow the air to exhale, then immediately pinch the nostrils and give another breath.

If you are unwilling to give mouth-to-mouth breathing, just do chest compressions.
Conventional CPR is more effective on children so it is the preferred method, but compression only CPR is better than no CPR.



After 5 cycles of 30 compressions and 2 breaths:

- If no one has called 911 yet, call 911
- If there is an AED available, get it and hook it up

Continue giving cycles of 30 compressions followed by 2 breaths until help arrives, or the patient starts to move:

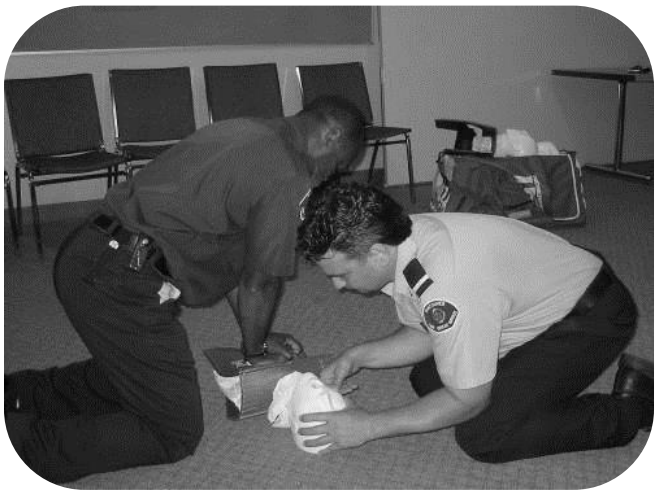
VITALS - *Maintain Vitals*

We need to maintain the child until more advanced medical care arrives. Keep monitoring ABC's

END - *Arrival of Advanced Care*

When the Fire Department or Ambulance arrive, they will take over from you. Let them know, what you found and what you did, and any other information relevant to the situation that you know.

Two Person CPR:



It is far better if two (or more) people take turns doing chest compressions. After just a couple of minutes you will start to get tired and you won't be able to press as hard on the chest. Restart CPR with chest compressions.

If there are two (or more) people that know CPR, one person should be in charge of the SAVE System and do the chest compressions, and the other person can do the breaths.

You should trade places about every 2 minutes so the person doing compressions doesn't get tired. The change should take no more than 5 seconds to minimize the interruption to chest compressions.

Choking Emergencies in Children

Again, the most important consideration is prevention. Keep small objects that can fit into small mouths away from children.

Small children may not know they are having an emergency, and may not know to get you when they are choking. You need to be able to recognize the signs of airway obstruction.

Small children should not be given these foods:

- Hot dogs
- Round candies
- Nuts
- Grapes

Look for the following signs:

- Coughing (may be weak or ineffective)
- Gagging
- Wheezing or high pitched breathing noises
- Bluish skin
- Unable to speak or make any sound

SAVE System for Choking Children:

SAFETY

Safety comes First!

Recognize there may be an emergency.

Determine

- Is it Safe?
- What happened?
- Who is Hurt or Sick?

Call out to attract attention and to take charge.

If you have a mobile phone call 911 immediately.

If there is another person available, tell them to phone 911.

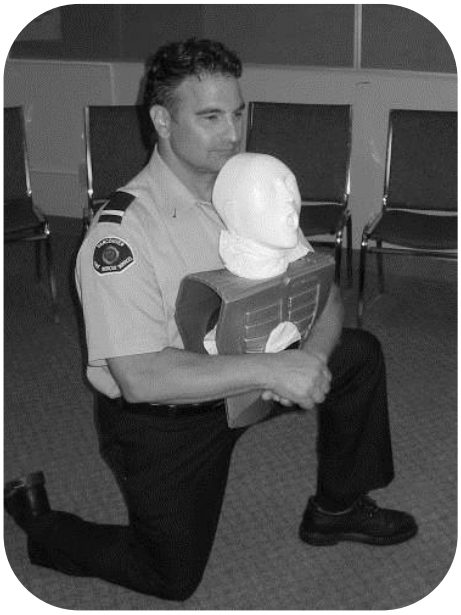
ABC's

Airways, Breathing & Circulation

If you see a child that is injured, or if you can't wake a child up, then it is a medical emergency.

For conscious choking children, the treatment is the same as for adults:

- The only difference is that children are shorter; so you will probably have to kneel down to do the back blows and abdominal thrusts.



<u>Unconscious Choking Children:</u>

As for adults:

- If a choking patient becomes unconscious, you should start CPR.
- The only difference is that before you try to give the two breaths you should look in the mouth for foreign objects.

VITALS - *Maintain Vitals*

We need to maintain the child until more advanced medical care arrives. Keep monitoring ABC's

END - *Arrival of Advanced Care*

When the Fire Department or Ambulance arrive, they will take over from you. Let them know, what you found and what you did, and any other information relevant to the situation that you know.

<u>Session Summary:</u>

Basic life support skills for children are very similar to adults.

It is more important to start CPR right away and then call 911, but the rest of the sequence of treatments remains the same. Follow the same SAVE System as for all patients.

Vancouver Firefighters
CPR + First Aid

Section 7

Basic Life Support for Infants

Navigation Links

Section 7 - Basic Life Support for Infants

Introduction:

Aim (What)

Infants are so dramatically different in size and anatomy that they require completely different techniques for first aid, but the sequence of the SAVE System is the same.

Motivation (Why)

Infants in distress cause strong emotional reactions. You need to have tremendous self confidence to overcome your emotions and treat the patient following the order of the SAVE System.

Outline (How)

- **Handling Infants**
- **Infant CPR**
- **Choking Infants**

Link (When)

These techniques are designed for babies up to 12 months old. If you are unsure of the age, just use your best guess and use the techniques you feel are appropriate. Again, although the techniques are different, the sequence of the SAVE System stays the same.

Handling Infants:

Many people who don't have children are afraid to handle babies. There is no need to be apprehensive as babies' bodies are quite tough and very rarely 'break'.

The only caution required is in supporting the head. Babies are born with large heads in relation to their bodies and their neck muscles cannot support the weight. When you pick up a baby, it is important to support their head.

You also need to be careful when you tilt the head back to open the airway. Unlike adults, it is possible to tilt it back too far, which may close the airway, or injure their neck. If the baby is lying on a flat surface, you should put a firm pad such as a towel under their neck to allow the head to tilt back far enough to open their airway.

Pinching a baby's shoulder to wake them up is not effective because they don't have any shoulder muscle. Instead, tap the bottom of the baby's feet and talk in their ear to wake them up.

Assessment of babies can be done with the baby in your arms, or in someone else's arms (such as the mother's).

If the baby needs CPR, you should place it on a firm flat surface with a firm pad such as a folded towel under the baby's shoulders to allow the head to tilt back far enough to open their airway.

SAVE System for Unresponsive Infants with No Breathing

SAFETY

Safety comes First!

Recognize there may be an emergency.

Determine

- Is it Safe?
- What happened?
- Who is Hurt or Sick?

Call out to attract attention and to take charge.

If you have a mobile phone call 911 immediately.

If there is another person available, tell them to phone 911.

If you see a baby who is injured, or if you can't wake the baby up, then it is a medical emergency.

If you do not have a mobile phone and there is no one else around don't stop to call 911:

- Follow the SAVE System, and if necessary give 2 breaths, then 5 cycles of 30 compressions and 2 breaths, then call 911.

ABC's
Airways, Breathing & Circulation

AWAKE:

Try to wake the Baby

- Shout in the patient's ears and tap their feet. Remember sometimes people who are sick are hard to wake up

If the Baby isn't awake, check their ABC's:

Infants have relatively large heads in relation to their bodies.
It can be difficult to tilt their head back far enough to open their airway when they are lying on a flat surface.

If the infant is lying on a flat surface, place a firm pad such as a towel under their neck to allow their head to tilt back.

AIRWAY: *Open the Airway*

- If you are holding the baby in your arms you can just tilt the head back, but be careful not to over-extend the neck.

If the baby <u>is</u> awake and crying, you know that they have an Airway, Normal Breathing, and Circulation!

BREATHING: *Look, Listen & Feel*

Children and babies often have breathing patterns that are irregular, but are adequate. Look for breaths that *average* no more than about 5 seconds apart.

As in adults, occasional 'gasping' breaths are not considered "normal"

Check for 'normal' breathing:

- Count the number of seconds between breaths at least twice.
- If there are no 'normal' breaths in 10 seconds, the patient is NOT breathing.

CIRCULATION:

If there is no breathing, or if there is only an occasional 'gasping' breath, start CPR:

- If necessary, move the patient onto their back on a firm, flat surface. You cannot give CPR to a person on a bed or a cushion. The best place to do CPR is on the floor.

The usual reason babies' hearts stop is because they aren't breathing, and their heart has run out of oxygen.

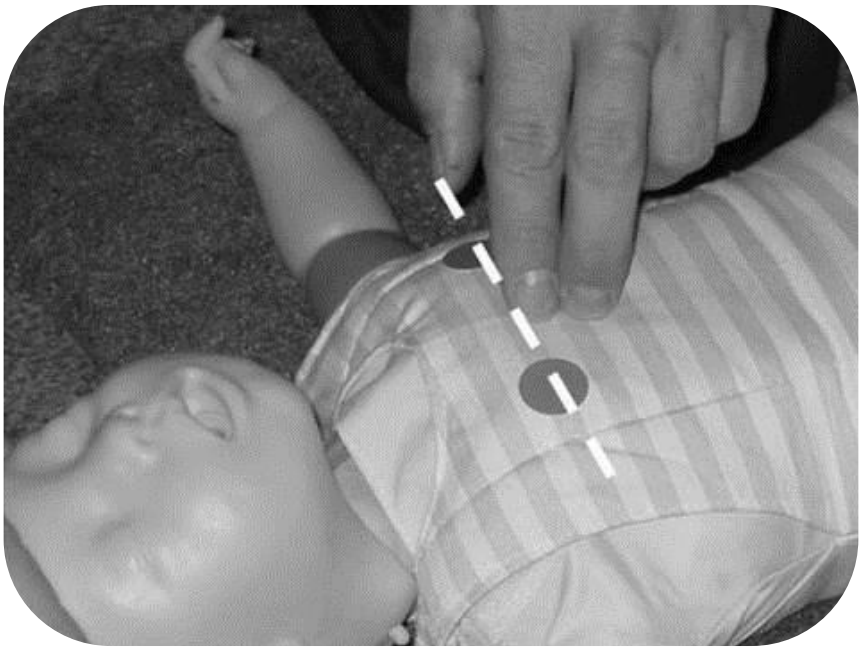
Position the baby for CPR:

- It is better to lay the baby on a firm, flat surface to give CPR.
- Place a <u>firm</u> pad such as a folded towel, under the baby's shoulders to allow the head to tilt backwards far enough to open their airway.

If you find an infant who is not breathing, you should immediately give 5 cycles of 30 compressions and 2 breaths before you call for help (if no one else is around).

Now give CPR:

- Expose the baby's chest and imagine a straight line between the nipples.



- Place 2 fingers of one hand on the center of the baby's chest, with the top edge of the finger closest to the baby's head in line with the imaginary line between the nipples.
- Using just your 2 fingers, compress the chest about ⅓ **of the front to back depth of the chest**.
- Then release the chest allowing it to fully rise back to its normal position, but do not allow your fingers to shift position.

Push Hard:

Compress the chest about ⅓ of the front to back depth of the chest.

Push Fast: *Count out-loud*

"1 and 2 and 3 and 4 and 5 and 1 and 2 and 3 and 4 and 10 and 1 and 2 and 3 and 4 and 15 and 1 and 2 and 3 and 4 and 20 and 1 and 2 and 3 and 4 and 25 and 1 and 2 and 3 and 4 and 30".

Don't Stop:

It is very important NOT to interrupt chest compressions

Don't interrupt chest compressions except to give rescue breaths, or to phone 911.

Press down on the "numbers" and release on the "ands". Make the compression phase equal to the release phase. Do compressions at a rate of between **100 & 120 per minute.**

It is very important not to stop chest compressions

When you start chest compressions, it takes a few seconds for circulation to 'build-up'.

Every time you stop compressions, circulation stops. Then it takes a few more seconds of chest compressions before it builds up again.

Give 30 compressions, then move to the head and give 2 breaths

- Keeping the airway open, make a firm seal with your lips over the baby's **mouth and nose**.
- **Note:** If you have trouble making a seal over the baby's mouth *and* nose, you can use the mouth-to-mouth technique.
- Give a gentle breath over about 1 second
- Give a 'Puff' with just enough air until you can see the chest start to rise from the corner of your eye. For babies, this is about as much air as you can hold in your cheeks.

- Take your mouth off and allow the air to exhale, then immediately give another 'Puff'.

If you are unwilling to give mouth-to-mouth breathing, just do chest compressions.
Conventional CPR is more effective on infants so it is the preferred method, but compression only CPR is better than no CPR.

After 5 cycles of 30 compressions and 2 breaths:

- If you have to go to a phone, carry the baby with you.
- Call 911, then re-start CPR with chest compressions.

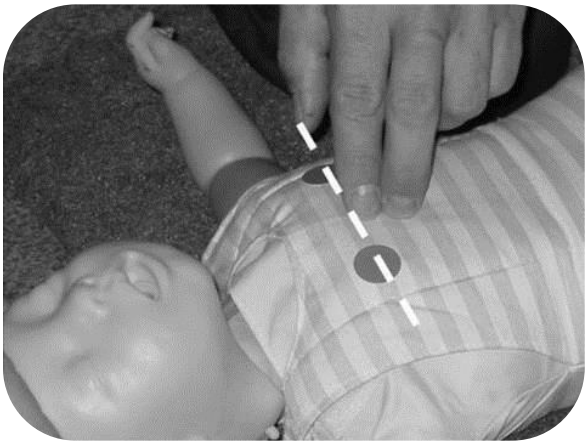
Continue giving cycles of 30 compressions followed by 2 breaths until help arrives, or the patient starts to move:

VITALS - ***Maintain Vitals***

Keep monitoring ABC's

END - ***Arrival of Advanced Care***

Two Rescuer Infant CPR:



It is far better if two people take turns doing chest compressions.

If there are two people that know CPR, one person should be in charge of the SAVE System and do the breaths, and the other person can do the chest compressions.

- ***Complete as above except use the ratio of 15 compressions to 2 breaths***

You should trade places every 10 cycles of 15 compressions and 2 breaths (or about every 2 minutes).The change should take no more than 5 seconds to minimize the interruption to chest compressions.

2 Rescuer CPR (on the go):

Since infants are small and portable, you can deliver 2 Rescuer CPR on the go. The compressor will hold the baby with his hands encircling the chest with the thumbs side by side on the center of the baby's chest.

To give CPR:

- Expose the baby's chest and imagine a straight line between the nipples.
- Hold the baby with your hands encircling the chest with the thumbs side by side on the center of the baby's chest, in line with the imaginary line between the nipples.
- Using both thumbs, compress the chest about ⅓ **of the front to back depth of the chest**.
- Then release the chest allowing it to fully rise back to its normal position, but do not allow your fingers to shift position.
- ***Use the ratio of 15 compressions to 2 breaths***

2 Rescuer Infant CPR

Push Hard:

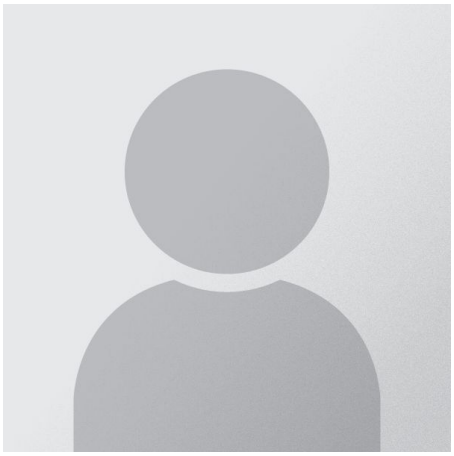
Compress the chest about ⅓ of the front to back depth of the chest.

Push Fast: *Count out-loud*

"1 and 2 and 3 and 4 and 5 and 1 and 2 and 3 and 4 and 10 and 1 and 2 and 3 and 4 and 15".

Don't Stop:

It is very important NOT to interrupt chest compressions



Choking Emergencies in Infants

As with children, prevention of choking is the most important step. Keep small objects out of reach of babies.

Infants in distress can't tell you what's wrong or come and get you. You will need to be able to recognize an airway obstruction.

Look for the following signs:

- Coughing (may be weak or ineffective)
- Gagging
- Wheezing or high pitched breathing noises
- Bluish skin
- Unable to cry or make any sound

Infants with gradually developing signs of choking should get urgent medical care, because the first-aid treatments for choking will be ineffective.

SAVE System for Choking Infants:

SAFETY

Safety comes First!

Recognize there may be an emergency.

Determine

- Is it Safe?
- What happened?
- Who is Hurt or Sick?

Call out to attract attention and to take charge.

If you have a mobile phone call 911 immediately.

If there is another person available, tell them to phone 911.

ABC's

Airways, Breathing & Circulation

<u>If the baby is coughing forcefully</u>:

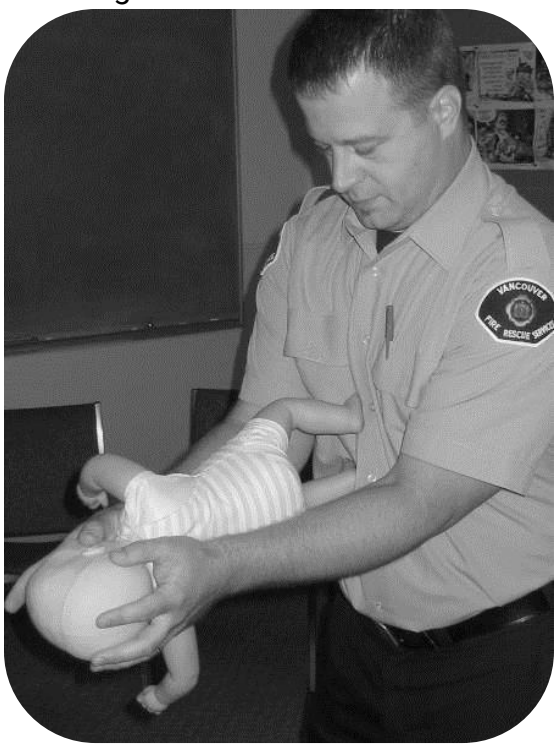
- Do not leave the baby alone.
- Tell the parent you know CPR and ask permission to help.
- If the situation does not improve, or worsens, have someone call 911.

<u>If the baby isn't coughing forcefully</u>:

- Tell the parent you know CPR and ask if you can help.
- If someone else is present they should phone 911, but don't delay treatment to call 911 yourself.

Pick up the baby and hold it face down in the 'football' position:

- Straddle the baby's legs around your upper arm and hold the baby's body on your forearm
- Support the baby's head with your hand, but do not block the mouth or nose.
- Hold the baby slightly head down, and with the other hand give 5 back blows.



Transfer the baby to the other arm, face up, in the 'football' position:

- Sandwich the baby between your forearms and roll the baby over onto the other arm.
- Support the baby's head with your hand.
- Straddle the baby's legs around your upper arm and hold the baby's body slightly head down on your forearm.

- Give 5 chest compressions exactly as for CPR.

Continue rolling the baby back and forth, giving a combination of 5 back blows and 5 chest compressions until the obstruction is cleared or the baby becomes unconscious.

<u>Unconscious Choking Children:</u>

As for all ages:

- If a choking baby becomes unconscious, you should start CPR. The only difference is that before you try to give the two breaths you should look in the mouth for foreign objects.

VITALS - *Maintain Vitals*

We need to maintain the person until more advanced medical care arrives. Keep monitoring ABC's

END -
Arrival of Advanced Care

When the Fire Department or Ambulance arrive, they will take over from you. Let them know, what you found and what you did, and any other information relevant to the situation that you know.

Session Summary:

A baby in distress has a profound emotional effect on everyone involved.

Try to concentrate on carrying out the steps of the SAVE System to give the best care you can.

Vancouver Firefighters
CPR + First Aid

Section 8

Health Care Provider

Navigation Links

Section 8 - Health Care Provider

Introduction:

Aim (What)

All of the material prior to this has been intended for the general public, with simple, easy to remember techniques. So that when presented with an emergency situation, a member of the general public will be able to easily remember and respond.

As a Health Care Provider, you will have more patient contact, and will be expected to respond at a higher level. This lesson is to take the principles and techniques learned in the earlier lessons, and expand upon them.

Motivation (Why)

Health Care Providers have a duty to respond and will be expected to have a higher level of knowledge and be able to respond at a higher level than the general public.

Outline (How)

- **Team Dynamics**
- **Chain of Survival for Health Care Providers**
- **Airway - Jaw Thrust (Spinal Concerns)**
- **Breathing - Ventilations (Pocket Mask / BVM)**
- **Circulation - Pulse checks**
- **Naloxone - Opioid Overdose**

Link (When)

As a responder, you are expected to respond with your highest level of training. Use this level of training when confronted with any emergency situations.

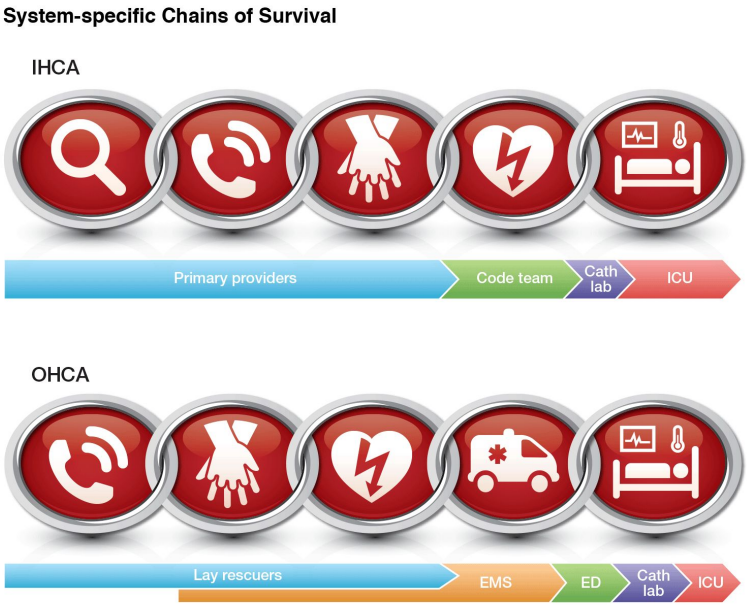
Team Dynamic:

Resuscitation is a complex process requiring the cooperation of many individuals. Teamwork and Leadership are important components of this cooperation.

If there is more than one person responding, one person should lead the response, and the other(s) should work as directed by the Team Lead. This will allow for a directed team approach to the situation. The Team Lead should divvy up tasks as appropriate. (Call for help, get AED, start compressions, etc). The responders not acting as the Team Lead, should still be able to contribute by working independently as required, and making suggestions where needed.

- Team Lead - Take charge and start assessment, assign tasks to team
- Team Responders - Work as directed, advise Team Lead of results, make suggestions to team lead as necessary.

The Chain of Survival™ for HCP's:



These are the steps identified by the Heart and Stroke Foundation of Canada for the treatment of heart attacks and strokes.

Each step is like a link in a chain, and a chain is only as strong as the weakest link. If only one of the links is missing, or weak, the patient's chances of recovery go down.

- **Healthy lifestyle choices** to reduce your risk of cardiovascular disease
- **Early recognition** of a heart attack or stroke
- **Early activation of 911** as soon as you recognize an emergency
- **Early CPR**, if necessary, to maintain body tissues
- **Early defibrillation** (electric shock using an "AED") to reorganize the heart's contractions
- **Early advanced care** including drug therapy
- **Early rehabilitation** following resuscitation

The Chain of Survival is still very relevant, but has been adjusted to reflect two distinct situations.

- Out of Hospital Cardiac Arrest - As discussed in Section 4
- In Hospital Cardiac Arrest

Out of Hospital Cardiac Arrest depend on elements within the community for support.

1. Lay rescuers must recognize the patient's arrest,
2. Call for help,
3. Initiate CPR
4. Early defibrillation (public-access defibrillation [PAD])
5. Until emergency medical services (EMS) providers assumes responsibility and then transports the patient to the Hospital
6. Then on to an ICU for post–cardiac arrest care.

Ideally, all victims of Out of Hospital Cardiac Arrest receive bystander CPR and defibrillation; if not, CPR and defibrillation is delayed, and the victim's chance of survival is much lower.

In Hospital Cardiac Arrest depend on a system of surveillance and prevention.

System-specific Chains of Survival

IHCA

1. Surveillance and prevention of cardiac arrest,
2. When cardiac arrest occurs, prompt notification and response to a cardiac arrest should result in the smooth interaction of a team of professional providers,
3. This team provides high-quality CPR,
4. Prompt defibrillation, and
5. Advanced cardiovascular life support when appropriate.

In any resuscitation, the chain is no stronger than its weakest link. Regardless of where the Cardiac Arrest occurs the system is the same; Early recognition, Call for Help, CPR, Defibrillation, Advanced Cardiac Care

SAVE System for Unresponsive Patients - HCP

SAFETY -
Safety Comes First!

Recognize there may be an emergency.

Determine

- Is it Safe?
- What happened?
- Who is Hurt or Sick?

Call out to attract attention and to take charge. Call 911 immediately.

If there is any danger, DO NOT attempt to give first-aid.

As an HCP, you are expected
to work as a team.
Take charge, assign roles and work together.

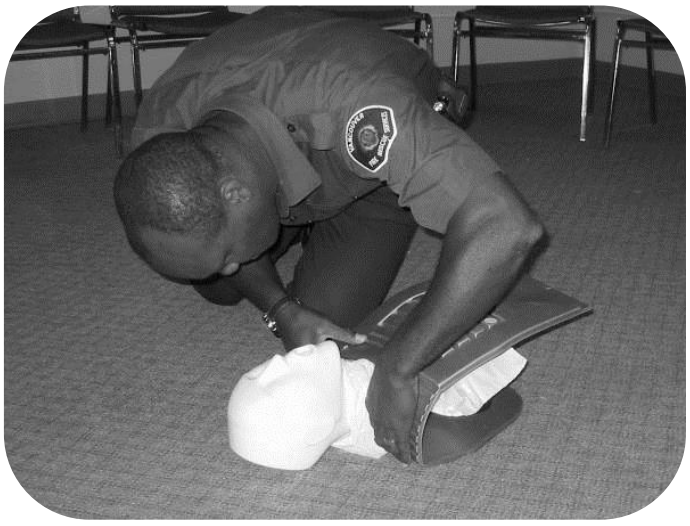
ABC's - *Airways, Breathing & Circulation*

AWAKE:

***Try to wake them*:**

- Shout in the patient's ears and pinch their shoulder.

If the patient isn't awake, check their ABC's:



If you haven't called 911 yet:

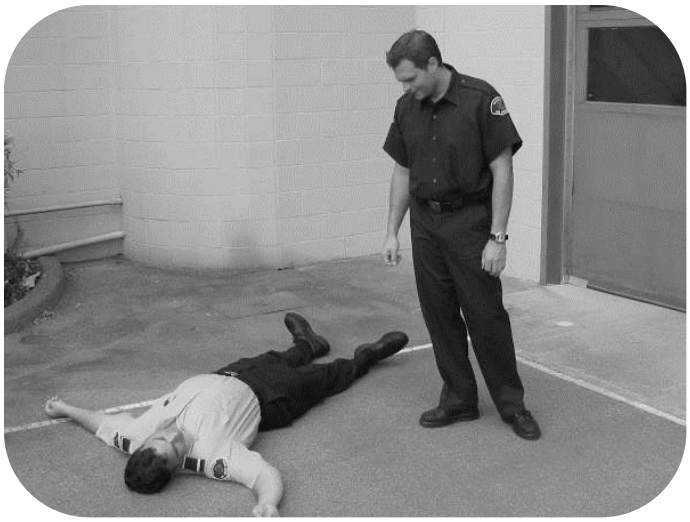
- If you can't wake the patient up, or if they can't speak to you, call 911 immediately.
- If the patient is injured or in distress, call 911 immediately.

AIRWAY: *Open the Airway*

- If there is or no obvious breathing, or snoring sounds, open the patient's airway.
- If a spinal injury is suspected use the ***Jaw-Thrust technique*** to open the airway.

Opening Airway - Jaw Thrust Technique

- Follow the SAVE system as before.
- Approach the patient from their line of sight and call out. Tell them you are a first-aider and not to move. If they are awake, ask them if you can help.



If you are alone, move to the patient's head and hold it:

- Tell the patient that you're holding their head to remind them not to move
- Kneel down in line with the patient's head.

- Brace both elbows either on your thighs or on the ground, in a position so that your hands can hold the head.

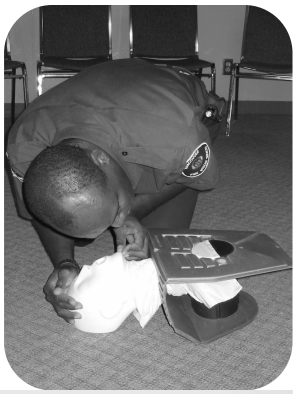
- **Jaw -Thrust Technique -** With your elbows stabilized, carefully grasp the head with your thumbs on both cheek bones. Place your fingertips underneath the jaw. Open the airway by pushing up with your fingertips. This lifts the tongue off the back of the throat.

You can open the airway of an unconscious patient and assess their breathing from this position.

BREATHING:

Look, Listen & Feel

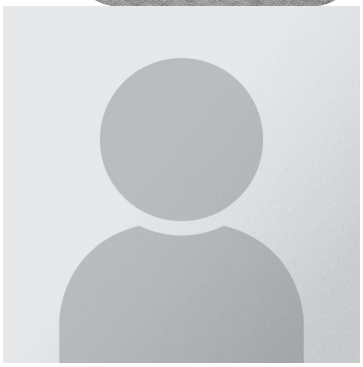
As Health care Providers, the expectation is that you can do the Breathing Check and Pulse Check at the same time.



If there is no breathing or any other sign of circulation, start counting up to 10 or until you find a carotid pulse:

Check for 'normal' breathing:

- Count the number of seconds between breaths at least twice.
- If there are no 'normal' breaths in 10 seconds, the patient is NOT breathing.



Pulse Check Adult & Child:

- While doing the Look, Listen and Feel, with 2 or 3 fingers of the other hand, find the trachea or "wind-pipe" in the middle of the patient's throat
- Slide your fingers towards you into the groove between the wind-pipe and the muscles on the side of the neck
- Press gently and feel for the carotid pulse.

Pulse Check Infant:

- While doing the Look, Listen and Feel, with 2 fingers of the other hand, find the brachial pulse.
- Slide your fingers towards into the groove in between the muscles of the inner upper arm

CIRCULATION:

Do not check for signs of circulation for more than 10 seconds:

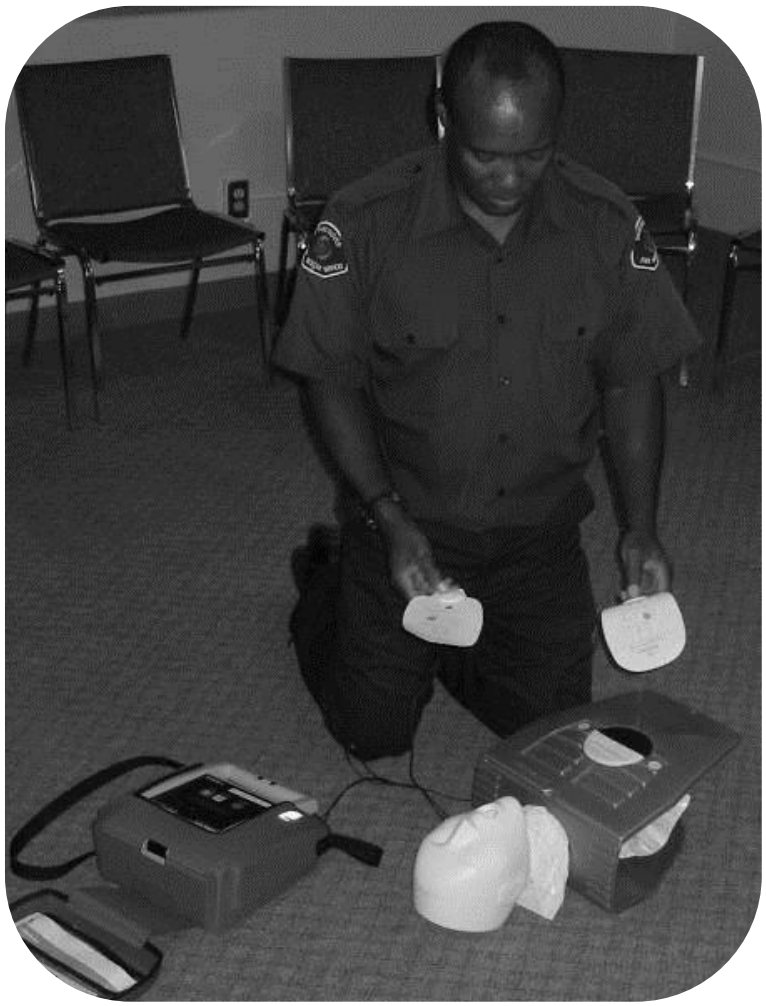
- If you aren't sure there is a pulse after 10 seconds, start **CPR and AED** immediately. If you are sure there is a pulse, continue with **ventilations** only:
- After about a minute, and every few minutes after that you should recheck for the presence of a pulse.
- Continue **ventilations** until either help arrives and takes over, or the patient starts breathing on their own.

You only need to check until you feel any pulse.
It doesn't matter if it is slow, fast, weak, or irregular. Any pulse is good.

If the patient is awake, and can talk to you, you know that they have an Airway, Normal Breathing, and Circulation!

AEDs

You shouldn't attach an AED to any patient unless they don't respond to pain and are not breathing.



If you have an AED with you:

- Turn on the AED
- Expose the patient's chest and follow the directions of the AED to hook it up.
- The AED will tell you what to do as soon as it's turned on.

If an AED is coming but isn't here yet:

- Start CPR
- As soon as the AED arrives, turn it on, and follow the directions of the AED to hook it up.
- If there is another person helping you, one person should continue giving chest compressions while the other person attaches the AED.

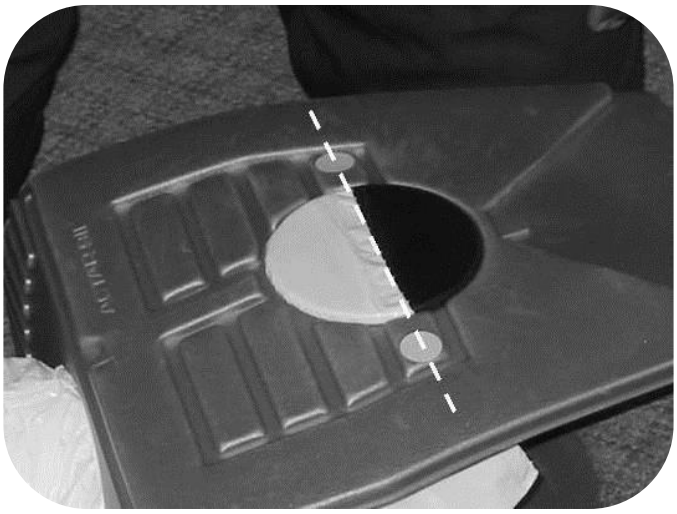
If there is no AED:

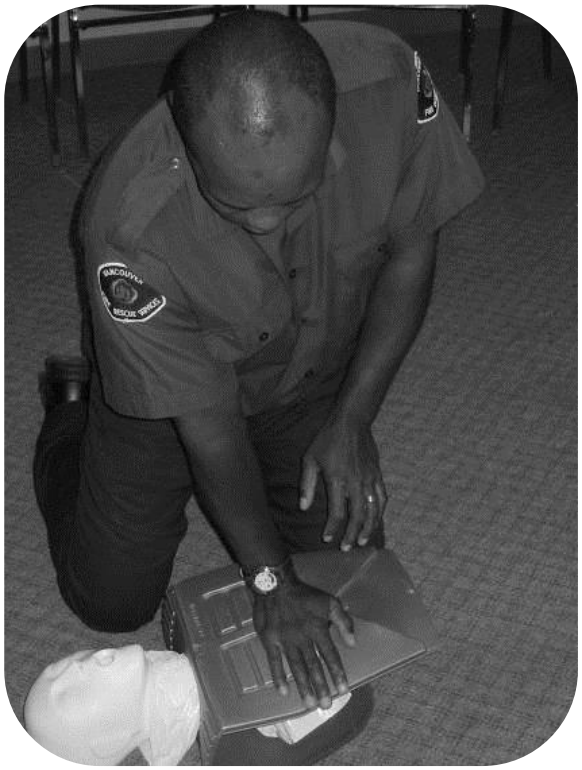
- Give CPR until Fire Department / Ambulance arrives and takes over.

CPR:

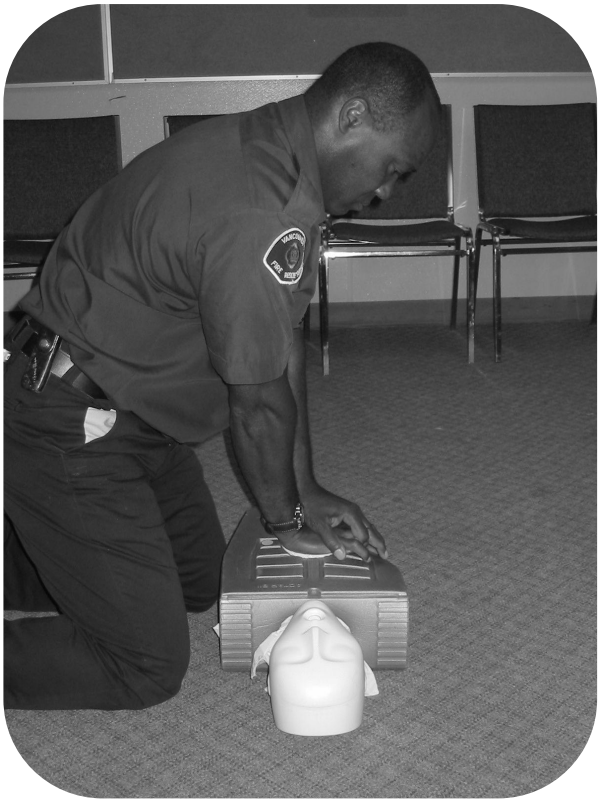
Start by giving 30 Chest Compressions:

- Imagine a line across the patient's chest between their nipples.





- Place the heel of one hand on the patient's breast-bone in the center of the chest right between their nipples.



- Put your other hand on top of the first hand and interlace the fingers. Pull your fingers up so that only the heel of your hand is pressing on the patient's breastbone.
- Rise up on your knees and lock your elbows and so that your arms are straight up and down.
- With your elbows locked, use your upper body weight to compress the chest about 5-6cm (2"- 2.5").
- Then release the chest allowing it to fully rise back to its normal position, but do not allow your hands to shift position.

You need to "Push Hard, Push Fast, and Don't Stop"

You need to "Push Hard, Push Fast, and Don't Stop"

Push Hard:

Compress the chest 5-6cm (2"- 2.5")

Push Fast: *Count out-loud*

"1 and 2 and 3 and 4 and 5 and 1 and 2 and 3 and 4 and 10 and 1 and 2 and 3 and 4 and 15 and 1 and 2 and 3 and 4 and 20 and 1 and 2 and 3 and 4 and 25 and 1 and 2 and 3 and 4 and 30".

Don't Stop:

It is very important NOT to interrupt chest compressions

Do compressions at a rate of between **100 & 120 per minute.**

When you start chest compressions, it takes a few seconds for circulation to 'build-up'.

Every time you stop compressions, circulation stops. Then it takes a few more seconds of chest compressions before it builds up again.

Don't interrupt chest compressions except to give rescue breaths, or to hook up an AED.

Give 30 compressions, then move to the head and give 2 ventilations:

(Mouth to Mouth, Mouth to Nose, Pocket Mask or Bag Valve Mask)

- Give a gentle breath over about 1 second.
- Administer just enough air until you can see the chest start to rise from the corner of your eye.

VITALS - *Maintain Vitals*

We need to maintain the person until more advanced medical care arrives. Keep monitoring ABC's

When Advanced Care arrives. Let them know, what you found and what you did, and any other information relevant to the situation that you know.

END - *Arrival of Advanced Care*

Ventilations (Rescue Breathing):

The following standards have been found to be most effective at maintaining a correct balance:

NOTE:
Most current CPR training manikins require about 700 to 1000 mL to make the chest visibly rise.

Volume:

- Correct volume of each ventilation should be just enough to make the patient's chest visibly rise.
- This should be 6 to 7 mL per kg of body weight, or about 500 to 600 mL for most adults.

Rate:

- Give each breath over about 1 second.
- Ventilate patients at a rate of 10 breaths per minute
- This means a pause of about 5 seconds between rescue breaths. You should count "1 thousand, 2 thousand, 3 thousand, 4 thousand, 5 thousand" after each breath, or after squeezing the bag of a BVM.

During CPR:

- Give 2 breaths only during a pause between chest compressions.
- Do not try to ventilate during chest compressions unless the airway is secured ('intubated') with an advanced airway.

Inadequate Respirations - Assisted Ventilations:

- Too Slow: (More than 5 seconds between breaths) Time your breaths to give one breath in-between the patient's breaths. This will double their breathing rate.
- Too Shallow: (If you can barely sense when the patient takes a breath) Time your breaths so that you blow into the patient at the same time they are taking a breath.
- Too Fast: (Less than 1 second between breaths) Time your breaths so that you blow into the patient every second or third breath to deepen and slow their breaths.
- If the patient is conscious, try to calm them down and get the patient to breathe with you to slow down their breaths. Do not put a paper bag over their mouth.
- Too Painful: Sometimes a chest injury or a crushing force can make it too painful for the patient to use their own breathing muscles. Try assisting the patient's breaths to see if it relieves the pain.

Vomiting:

There are 3 rules for rescue breathing to minimize the risk of vomiting:

1. Keep the patient's airway open. If the airway is not fully open, you will have to squeeze the bag harder to get air past the tongue which will create enough pressure to open the esophageal sphincter.

2. Give gentle breaths over 1 second. If you try to blow air into the lungs too fast by blowing too hard or squeezing a BVM too hard it will create a peak of pressure which will open the esophageal sphincter.

3. Blow just enough air to make the patient's chest rise. As the lungs start to expand their resistance to further expansion increases. The correct volume of air for any patient is just sufficient to make the chest rise.

Vomiting:

Vomiting happens when air is forced into the stomach during ventilations. It often happens when rescue breathing is given without an advanced airway.

If a patient vomits
Quickly roll them toward you, supporting the head so that the mouth is angled down for natural drainage.
When the person stops retching, make sure the mouth is clear and roll the patient onto their back, then re-start at "Airway".

Suctioning:
If you have suction available you should still roll the patient and use the suction to aid in clearing the mouth. When the person stops retching, make sure the mouth is clear, roll the patient onto their back, then re-start at "Airway".

Mouth-to-Nose:

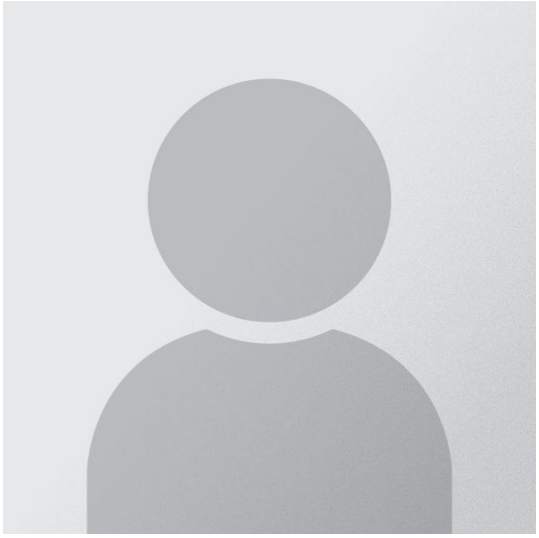
If a patient has an injury in or around their mouth you may not be able to blow into their mouth. You may be able to blow into their nose instead.

Hold the mouth closed with your fingers and make a firm seal with your lips around the patient's nose. Remember to release the mouth and nose to allow the patient to exhale between breaths.

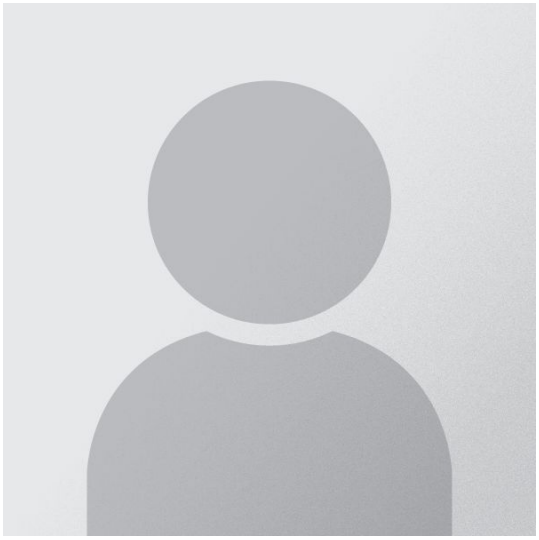
Pocket Mask:

Pocket Masks allow rescuers to get a protect themselves from disease, as well as obtaining a more efficient seal to the face. Pocket masks should contain filters and one way valves to protect the rescuer.

To use a Pocket Mask:



- Assemble the Pocket Mask following manufacturer's recommendations.
- Place the pocket mask on the face over the mouth, with the tapered end over the nose.
- Place the thumbs of both hands alongside the mask, and wrap your fingertips under the jaw. Use your thumbs to apply pressure to the face, and your fingertips to lift the jaw into place.



- Open the patient’s Airway using the Head-Tilt (or Jaw-Thrust if a Spinal injury is suspected)
- Seal your lips on the Pocket Mask mouthpiece, and Blow into the pocket mask as per ventilations needed for CPR or Rescue Breathing.

Bag Valve Mask:

Bag Valve Masks allow rescuers to get a protect themselves from disease, as well as obtaining a more efficient seal to the face

To use a Bag Valve Mask:

- Assemble the correct size of Bag Valve Mask following manufacturer's recommendations.
- Attach BVM to supplemental high flow oxygen
- Responder #1 will place the mask on the face over the mouth, with the tapered end over the nose.
- Responder #1 will place the thumbs of both hands alongside the mask, and wrap their fingertips under the jaw. They will then use their thumbs to apply pressure to the face, and their fingertips to lift the jaw into place.
- Responder#1 will open the patient’s Airway using the Head-Tilt (or Jaw-Thrust if a Spinal injury is suspected)
- Responder#2 will begin ventilations. Squeeze bag smoothly until patients chest starts to rise. Squeeze the bag valve mask as per ventilations needed for CPR or assisted ventilations..

Naloxone - Opioid Overdose:

Naloxone is available in British Columbia without a prescription and often given as an injection into an arm, buttocks, or muscle.

Naloxone is a medication that can reverse the effects of an overdose from an opioids (eg. heroin, morphine, fentanyl, carfentanil, and codeine). Highly-toxic synthetic opioids have now been found in samples of all illegal drugs except cannabis.

Naloxone will only work on opioid-related overdoses, though it will cause no harm if there are no opioids in someone's system. Naloxone should be given to an unresponsive person, particularly if they are breathing slowly or not at all.

British Columbia has a Take Home Naloxone program in place to reduce the harm and deaths associated with opioid overdoses. The program provides training in overdose prevention, recognition, and first aid response.

You are eligible for the Take Home Naloxone program if you:

- Have a history of using substances particularly heroin , cocaine, crack cocaine and crystal methamphetamine
- Are likely to witness and respond to an overdose (not including health care professionals or clinics for staff use on patients).
- Are First Nations' and living in BC. The FNHA's First Nations Health Benefits plan will cover the cost.

If you are eligible for the Take Home Naloxone program, you can receive a naloxone kit at no cost, as well as overdose prevention and response training, at any program site. Visit the Toward the Heart site locator or call 811 anytime day or night to find a site near you.

People who are at risk of overdose, or who are likely to witness an overdose, can also obtain a no-charge Take Home Naloxone kit from participating pharmacies. Click here for a list of eligible pharmacies in B.C.

SAVE System for Suspected Opioid Overdose Patients - HCP (If Alone)

Follow the steps as laid out in the SAVE System for Unresponsive Patients - HCP.
An Opioid Overdose is a breathing emergency.
Focus on administering CPR / AED with Ventilations (Rescue Breathing).

If there are Multiple Rescuers, and you have received training in Naloxone Administration, proceed as on next page.

SAVE System for Suspected Opioid Overdose Patients - HCP

(Multiple Rescuers with Naloxone Training)

SAFETY -
Safety Comes First!

Recognize there may be an emergency.

Determine

- Is it Safe?
- What happened?
- Who is Hurt or Sick?

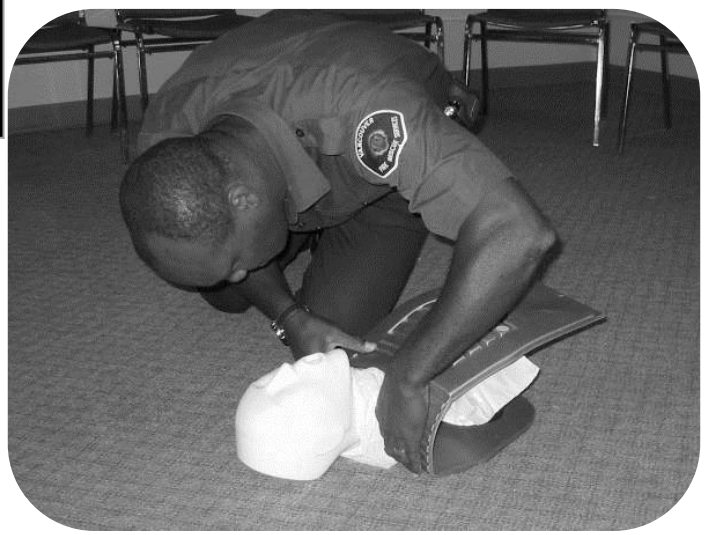
Call out to attract attention and to take charge. Call 911 immediately.

If there is any danger, DO NOT attempt to give first-aid.

As an HCP, you are expected to work as a team. Take charge, assign roles and work together.

British Columbia Online Naloxone Training

ABC's
Airways, Breathing & Circulation



AWAKE:

***Try to wake them*:**

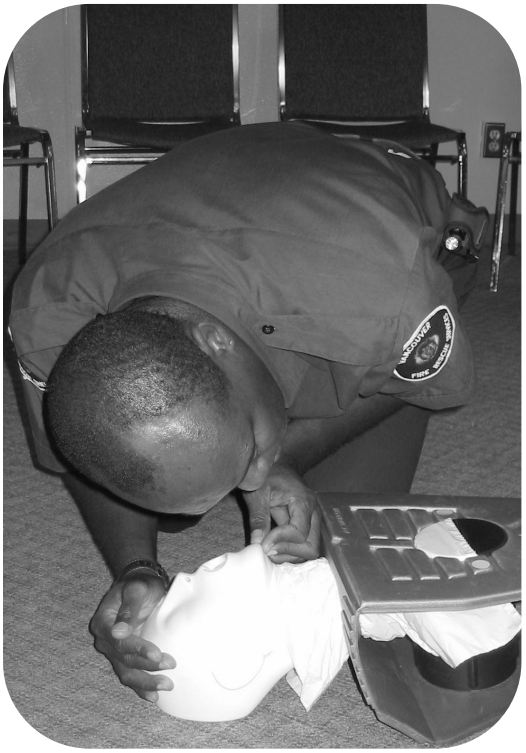
- Shout in the patient's ears and pinch their shoulder.

If the patient isn't awake, check their ABC's:

AIRWAY:

Open the Airway

- If there is or no obvious breathing, or snoring sounds, open the patient's airway.
- If you are concerned about a spinal Injury use the Jaw Thrust Technique.



BREATHING:

Look, Listen & Feel

As Health care Providers, the expectation is that you can do the Breathing Check and Pulse Check at the same time.

If there is no breathing or any other sign of circulation, start counting up to 10 or until you find a carotid pulse:

Check for 'normal' breathing:

- Count the number of seconds between breaths at least twice.
- If there are no 'normal' breaths in 10 seconds, the patient is NOT breathing.
- While doing the Look, Listen and Feel, with 2 or 3 fingers of the other hand, find the trachea or "wind-pipe" in the middle of the patient's throat
- Slide your fingers towards you into the groove between the wind-pipe and the muscles on the side of the neck
- Press gently and feel for the carotid pulse.

CIRCULATION:

Do not check for signs of circulation for more than 10 seconds:

- If you aren't sure there is a pulse after 10 seconds, start **CPR and AED** immediately. If you are sure there is a pulse, continue with **ventilations** only:
- After about a minute, and every few minutes after that you should recheck for the presence of a pulse.
- Continue **ventilations** until either help arrives and takes over, or the patient starts breathing on their own.

Opioid Overdose:
If you have been trained to administer Naloxone and there are signs of an Opioid Overdose. ie

- Drug Paraphernalia
- Bystander Information
- Pill bottles, etc

1. Begin CPR while your team connects the AED.
2. Follow the AED Prompts
3. ***Administer the Naloxone as per your training***

Session Summary:

When a person stops breathing, they have only about 4 minutes until parts of their body stop working and start to die. Someone like you could make the difference between a full recovery or a permanent disability.

Course Summary

Upon successful completion of this course you are certified to an internationally recognized standard as someone trained in CPR. This standard is the level of expertise that an ordinary person can be expected to provide in a medical emergency. You are not expected to perform miracles or bring people back from the dead.

CPR is about basic life support. That is, getting oxygen to the brain and the heart to maintain them until the patient can be revived by advanced medical care. It is important to realize that most patients will not be revived by your treatments but they will be kept alive by your giving basic life support.

There will be some emergencies where your best efforts will not be enough to prevent tragedy. If there was a "Magic First-Aid Wand", then no-one would ever die.

Remember, the "success" of your treatment doesn't depend on whether the patient revives. Your treatment is considered successful as soon as you step in to help when someone is having a medical emergency.

If you are involved in a medical emergency and use the skills you have learned in this course, you can be sure that you have done everything in your power to help, and that regardless of the outcome your efforts gave the patient the best possible chance.

People almost never die because of something a first-aider does. They do sometimes die because no-one gives first-aid.

Now that you have learned the skills to save a life, what are some other ways that you can help save lives?

PulsePoint

Canadian Blood Services
it's in you to give

THE KIDNEY FOUNDATION OF CANADA

- Sign up for PulsePoint. This app will notify you if there is someone close to you that is in Sudden Cardiac Arrest. http://www.pulsepoint.org/
- You can donate blood with the Canadian Blood Services. https://www.blood.ca/
- Register yourself as an Organ Donor, http://www.kidney.ca/bc
  One Organ donor can save up to Eight lives.

Thank you for your commitment to saving Lives!

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2. http://www.ilcor.org/consensus-2015/costr-2015-documents/
3. https://www.sciencedirect.com/topics/medicine-and-dentistry/international-liaison-committee-on-resuscitation
4. https://www2.gov.bc.ca/gov/content/overdose/where-can-i-get-a-naloxone-kit
5. http://towardtheheart.com/assets/uploads/1498514618c50KQjNIcOj1Q2DO304zK6UQVExmrzeKktd7O4p.pdf
6. http://towardtheheart.com/naloxone-course
7. http://library.bcpharmacists.org/6_Resources/6-5_Pharmacy_Resources/5181-Naloxone_Brochure_Ampoule.pdf
8. http://www.naloxonetraining.com/home