

CPR Update Guide

2011 CPR Guidelines



LIFESAVING SOCIETY®

The Lifeguarding Experts



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2011 LIFESAVING SOCIETY CPR UPDATE GUIDE

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The Lifesaving Society is Canada's lifeguarding experts. The Society is a national charitable organization working to prevent drowning and water-related injuries through lifeguard, lifesaving, and swimming training, competitive lifesaving, safety management standards and services, and Water Smart® public education.

The Society is an independent, charitable organization educating Canadian lifesavers since the first Lifesaving Society Bronze Medallion Award was earned in 1896.

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A NOTE TO INSTRUCTORS

OVERVIEW

In October 2010, the “2010 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiac Care Science with Treatment Recommendations” was published by the International Liaison Committee on Resuscitation (ILCOR). The ILCOR Guidelines document in conjunction with the American Heart Association “2010 AHA Guidelines for CPR and ECC” presents the latest treatment recommendations for CPR, ECC and First Aid. These recommendations and guidelines are based on a comprehensive, international evaluation of the best research available. In Canada and around the world, the ILCOR Guidelines are used by organizations such as the Lifesaving Society to review and revise the standards and techniques for resuscitation and first aid skills within our programs.

During late 2010 and early 2011, the Lifesaving Society worked with the Canadian Red Cross, St. John Ambulance Service and Canadian Ski Patrol to decide how the new guidelines will be implemented in Canada. This package explains the guideline changes and how they will be interpreted and used in Lifesaving Society training programs.

Changes resulting from the 2010 ILCOR Guidelines continue the process of simplifying and making CPR training easier to learn and perform. Most of the changes are relatively minor to the way a skill is performed or taught. Some changes are based on research that demonstrated the change would improve the medical outcomes for victims.

LIFESAVING SOCIETY PROGRAMS

As of July 2011, the new CPR standards will be available for release to Lifesaving Society instructors, affiliates, aquatic professionals, first aiders and the Canadian public. The Society standards and training materials apply the latest international science and research from the 2010 ILCOR Guidelines of the International Liaison Committee on Resuscitation.

By no later than December 31, 2011; all Lifesaving Society programs and training will be delivered using the new standards. Updated literature and training will be in place to ensure that Canadians will have access to CPR training that applies the latest research and is designed to improve survival and enhance the effectiveness of the Canadian Chain of Survival. The Society has implemented a simple, convenient, flexible and innovative process to update all of our literature, instructors and affiliate members who deliver CPR training in communities across the country. The result will be leading edge support for professional CPR training and public education at Lifesaving Society member facilities such as aquatic centres throughout Canada.

SUMMARY OF CHANGES

This section summarizes the changes in basic life support from the 2010 AHA Guidelines for CPR and ECC, first aid training agency collaboration and interpretation of the guidelines and rationale for the changes. For more detailed information and references, the reader is encouraged to review the 2010 AHA Guidelines for CPR and ECC published online in *Circulation* and *Resuscitation* journals from October 2010.

Studies published before and since 2005 have demonstrated that:

1. The quality of chest compressions continues to require improvement
2. There is considerable variation in survival from out-of-hospital cardiac arrest across emergency medical services (EMS) systems
3. Most victims of sudden cardiac arrest do not receive any bystander CPR

The changes recommended in the 2010 AHA Guidelines for CPR and ECC attempt to address these issues and make recommendations to improve patient outcomes from cardiac arrest. The Chain of Survival has been modified to reflect the changes from the 2010 AHA Guidelines (reference Figure 1).

Figure 1
AHA ECC Adult Chain of Survival

The links in the new AHA ECC Adult Chain of Survival are as follows:

1. Immediate recognition of cardiac arrest and activation of the emergency response system
2. Early CPR with an emphasis on chest compressions
3. Rapid defibrillation
4. Effective advanced life support
5. Integrated post-cardiac arrest care



2010 AHA Guidelines

HANDS-ONLY™ CPR

There has been a lot of media surrounding compression-only CPR and resulting questions as to the application of this skill in Society programs. It is important to note that:

- **Trained** rescuers will continue to provide rescue breaths along with compressions (30:2) when performing CPR.
- If a bystander is **not trained** in CPR, they should provide Hands-Only™ (compression-only) CPR for the adult victim who suddenly collapses.

Discomfort with the application of rescue breaths was the primary reason cited for lay rescuers not providing resuscitation.

Hands-Only™ CPR would be appropriate for trained rescuers if they do not have access to a pocket mask and are uncomfortable with direct mouth to mouth contact.

2010 Recommendation “NEW”	2005 Recommendations “OLD”
<p>If a bystander is <u>not trained</u> in CPR, they should provide Hands-Only™ (compression-only) CPR.</p> <p><u>Trained</u> rescuers will continue to provide rescue breathes along with compressions.</p>	<p>The 2005 AHA Guidelines did not provide different recommendations for trained versus untrained rescuers.</p>
<p><i>Circulation Part 1, pg S642-S643 / Part 4, pg S678 / Part 5, pg S691</i></p>	

C-A-B (Compression-Airway-Breathing) vs. A-B-C

The Breathing Check

Rescuers will open the airway using a head-tilt/chin-lift and check for the presence of abnormal or absent breathing for **5 seconds** (maximum 10 seconds). This is a change from the 2005 guidelines where the rescuer would assess breathing for 10 seconds. **“Look, Listen, and Feel” has been removed** as a breathing assessment tool as:

- Oxygen levels in the blood remain adequate for the first several minutes after a sudden cardiac arrest.
- Passive chest recoil during the relaxation phase of chest compressions can also provide some air exchange.

Abnormal breathing can include gasping (agonal breathing) and severe respiratory distress.

- Agonal breathing is present in up to 40% of pre-hospital cardiac arrests and is mistaken as a sign of effective breathing leading to omission of bystander rescue breathing and/or CPR.
- With agonal breathing, the diaphragm is still receiving intermittent residual impulses from the brain resulting in sporadic gasping breaths.

By changing the sequence to C-A-B, chest compressions will be initiated sooner and ventilation only minimally delayed until completion of the first cycle of chest compressions (30 compressions should be accomplished in about 18 seconds).

The EMS Call

In the event of a sudden cardiac arrest, the trained rescuer will active EMS after checking for breathing. This is a change from the 2005 guidelines where the EMS call came immediately after determining unresponsiveness.

- The rescuer can use judgment in determining when an EMS call can be made.
- It is important that the call is made within the first 2 minutes of the primary survey so as not to delay transport to advanced care.

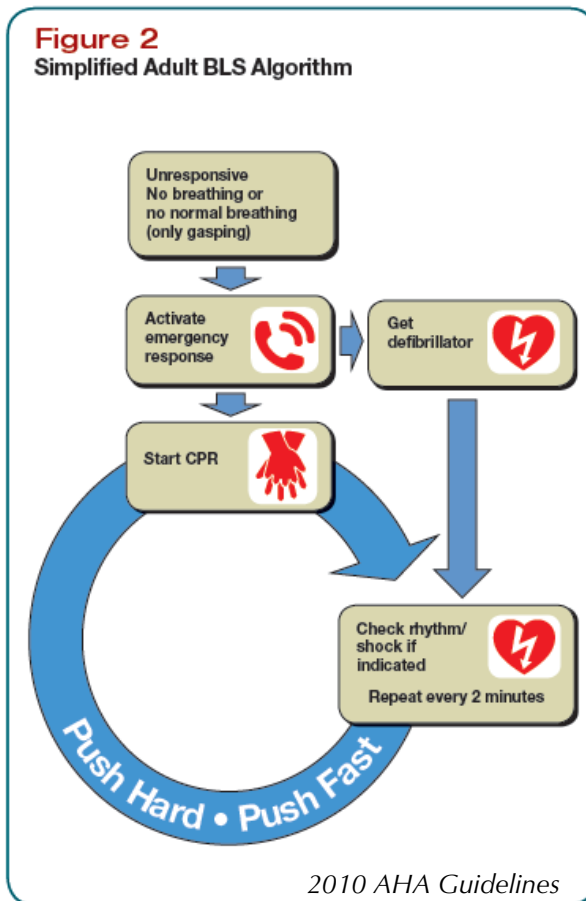
If the victim is an adult, the **lone** rescuer will immediately **activate** EMS, retrieve an AED (if available) and then start CPR. The lone rescuer will perform 5 cycles (2 minutes of CPR) on a **child or infant** prior to calling 911 and retrieving the AED (if located close by).

- Respiratory arrest is the most common cause of cardiac arrest in children, thus 2 minutes of resuscitation should be attempted prior to activating EMS and retrieving an AED.

If **two or more rescuers** are present, one rescuer should start CPR and the second should call EMS and then initiate the AED protocol.

It is important to note that the **A-B-C** algorithm will still be used in the assessment of a patient and that **C-A-B** is a treatment sequence for a person who is not breathing or breathing normally.

Simplified Adult Basic Life Support Algorithm (reference Figure 2)



1. Check for danger.
2. Determine unresponsiveness or level of consciousness (pinch and shout).
3. Open the airway and check for absent or abnormal breathing for 5 seconds (max 10 seconds).
4. The **lone** rescuer will immediately **activate** EMS and retrieve an AED.
5. If an AED is not immediately available, the rescuer should proceed directly to **CPR** and then apply the AED as soon as it is available.
6. If an **AED** is immediately available, the rescuer will apply the AED.
7. If **two or more rescuers** are present, one rescuer should start CPR and the second should call EMS and then initiate the AED protocol.

2010 Recommendation "NEW"	2005 Recommendations "OLD"
The lone rescuer is to initiate chest compressions before giving rescue breaths. The compression to ventilation ratio of 30:2 remains the same.	The lone rescuer would open the airway, "look, listen and feel" for breathing, and then initiate chest compressions (A-B-C).
"Look, listen, and feel" has been removed other than checking for the presence of normal breathing.	
<i>Circulation Part 1, pg S642-S643 / Part 4, pg S677-S679</i>	

EFFECTIVE CPR

Studies published before and since 2005 have demonstrated that the quality of chest compressions continues to require improvement. Effective chest compressions are essential for providing blood flow during CPR and can significantly increase survival rates. The following changes have been recommended to ensure high quality, effective CPR:

- A compression rate of at least 100/min for adults, children and infants
- A compression depth of at least 5cm (2 inches) in adults
- A compression depth of at least one third of the anterior-posterior diameter of the chest in children (about 5cm or 2 inches)
- A compression depth of at least one third of the anterior-posterior diameter of the chest in infants (about 4cm or 1.5 inches)
- Landmarking should occur on the centre of the chest (rescuers are landmarking too low and are compressing the xyphoid process)
- The rescuer must allow for full chest recoil (often the faster a rescuer compresses the chest, the shallower the compression depth or they do not allow the chest to fully rise)
- The maximum time a rescuer should be off the chest is 10 seconds

2010 Recommendation "NEW"	2005 Recommendations "OLD"
A compression rate of <u>at least</u> 100/min for adults, children and infants.	A compression rate of <u>approximately</u> 100/min for adults, children and infants.
A compression depth of <u>at least 2 inches</u> (5 cm) in adults.	A compression depth of <u>1½ to 2 inches</u> in adults.
A compression depth of at least one third of the anterior-posterior diameter of the chest in children (<u>about 2 inches or 5 cm</u>). This is deeper than previous recommendations.	A compression depth of 1/2 to 1/3 of the anterior-posterior diameter of the chest in children.
A compression depth of at least one third of the anterior-posterior diameter of the chest in infants (<u>about 1.5 inches or 4 cm</u>). This is deeper than previous recommendations.	A compression depth of 1/2 to 1/3 of the anterior-posterior diameter of the chest in infants.
Increased focus on methods to ensure high quality CPR including full chest recoil between compressions.	No change from 2005.
The maximum time a rescuer should be off the chest is 10 seconds.	The rescue should minimize interruptions in chest compressions.
<i>Circulation Part 1, pg S643 and S647 / Part 4, page S678 and S688 / Part 5, pg S687-S688 / Part 13, pg S864</i>	

IMPLEMENTATION OF AED TRAINING

In 2005, the Lifesaving Society only required rescuers to have a bystander try to obtain an AED and AED trained operator. Any practical AED training was offered through separate AED courses and provided as needed throughout the various Branches.

To give the victim the best chance of survival, activation of EMS, provision of CPR and operation of an AED must occur within the first moments of a cardiac arrest. For every minute that passes between collapse and defibrillation, survival rates decrease by 7% to 10%. Even minimal training has been shown to improve survival rates, thus, practical training opportunities should be made available and promoted for the lay rescuer.

The lone rescuer will call 911 and retrieve the AED (if located close by) before starting resuscitation on an adult. The lone rescuer will perform 5 cycles (2 minutes of CPR) on a child or infant prior to calling 911 and retrieving the AED (if located close by). Respiratory arrest is the most common cause of cardiac arrest in children, thus 2 minutes of resuscitation should be attempted prior to activating EMS and retrieving an AED.

Although the 2010 AHA Guidelines recommend the application of an AED on infants, this will be a knowledge component only due to the low likelihood of a lay rescuer encountering an infant in cardiac arrest and having access to an AED with pediatric pads.

2010 Recommendation “NEW”	2005 Recommendations “OLD”
<p>Integration of AEDs into a system of care is critical in the Chain of Survival. AED should be taught in combination with CPR. <i>Circulation Part 16, pg S922</i></p>	<p>A rescuer will initiate CPR and have a bystander try to obtain an AED and AED trained operator. The Lifesaving Society provided AED training in separate programs.</p>
<p>The lone rescuer will call 911 and retrieve the AED before starting resuscitation on an adult. The lone rescuer will perform 5 cycles (2 minutes of CPR) on a child/infant prior to calling 911 and retrieving the AED. <i>Circulation Part 1, pg S644 / Part 4, pg S677-S678 / Part 5, pg S688 / Part 6, pg 70 6/ Part 13, pg S865</i></p>	<p>The lone rescuer will call 911 before starting resuscitation on an adult. The lone rescuer will perform 5 cycles (2 minutes of CPR) on a child/infant prior to calling 911.</p>
<p>To minimize interruption in compressions, CPR should be provided during the application of the AED in two rescuer scenarios. CPR should be started immediately after a shock/no shock. <i>Circulation Part 4, pg S678 / Part 6, pg S707</i></p>	<p>CPR was suspended during the application of the AED pads in two rescuer scenarios. CPR should be started immediately after a shock/no shock.</p>
<p>Application of an AED with a pediatric dose pads on an infant (<1 year of age) is recommended. This will be a knowledge component only for lay rescuers. <i>Circulation Part 6, pg S711</i></p>	<p>AED use is recommended for adults and children, however, there is insufficient data to make a recommendation for or against the use of AEDs for infants <1 year of age.</p>

CONSCIOUS OBSTRUCTED AIRWAY PROCEDURES

In 2005, the Heart & Stroke Foundation of Canada recommended abdominal thrusts as the preferred method to clear the airway of a responsive patient with a severe airway obstruction. The primary reason that abdominal thrusts were selected over other methods of clearing the airway was for ease of teaching.

The 2010 AHA Guidelines indicate that if abdominal thrusts are not effective, the rescuer may consider other methods to clear the airway. Studies have shown that abdominal thrusts, back blows, and chest thrusts are acceptable methods of clearing the airway for responsive adults and children suffering from a severe airway obstruction. The implementation of two procedures for adults and children should not pose a significant teaching issue as two procedures are already being used in responsive infant airway obstruction procedures.

The treatment of a responsive patient with a severe airway obstruction will include:

- Alternating 5 abdominal thrusts and 5 back blows for adults and children
- Alternating 5 chest thrusts and 5 back blows for obese or pregnant patients
- Alternating 5 chest thrusts and 5 back blows for infants

When performing back blows it is important that the patient's airway is parallel to the ground. This can be achieved by the rescuer wrapping one arm diagonally across the patient's chest and having them bend forward or having the patient bend over and support themselves on a table or counter top. The rescuer will then deliver 5 firm back blows with the heel of their hand between the shoulder blades of the patient. It is important the patient have a good level of consciousness prior to attempting this procedure.

2010 Recommendation "NEW"	2005 Recommendations "OLD"
For ease of teaching, abdominal thrusts are recommended, however, case reports show feasibility and effectiveness of back blows, abdominal thrusts and chest thrusts. If abdominal thrusts are not effective, the rescuer may consider other methods to clear the airway.	For ease of teaching, abdominal thrusts are recommended for treatment of a responsive adult/child severe airway obstruction.
As per the C-A-B algorithm, a conscious to unconscious obstructed airway rescue will begin with a 911 call followed up by 30 compressions. The rescuer will check the mouth before the initial ventilation and reposition if the air does not go in.	As per the A-B-C algorithm, a conscious to unconscious obstructed airway rescue will begin with a 911 call followed up by checking the airway (attempt to ventilate), repositioning the airway (attempt to ventilate) and then 30 compressions.
If found unresponsive, the obstruction will not be discovered until after the first 30 compressions and initial ventilation attempt.	If found unresponsive, the rescuer would open the airway, (attempt to ventilate), reposition the airway (attempt to ventilate) and then 30 compressions.
<i>Circulation Part 5, pg S696</i>	

FIRST AID UPDATE

In addition to the resuscitation recommendations, the 2010 AHA Guidelines for CPR and ECC have published treatment recommendations as released by the International Liaison Committee on Resuscitation (ILCOR) and the International First Aid Science Advisory Board on First Aid.

2010 AHA Recommendation “NEW”	Rationale
<p>A prone patient should be left in the position found unless normal breathing can not be assessed. If normal breathing can not be assessed, then the patient should be rolled into the supine position.</p> <p>Whenever a patient is being left unattended or is breathing on their own, they should be placed in the recovery position.</p> <p><i>Circulation Part 5, pg S694 / Part 16, pg S935</i></p>	<p>The recovery position is used for unresponsive victims who clearly have normal breathing and effective circulation. This position is designed to maintain a patent airway and reduce the risk of airway obstruction and aspiration. There are several variations to the recovery position; however, each variation should be stable, near true lateral, with the head dependant and no pressure on the chest to impair breathing.</p>
<p>Treatment for bleeding includes direct pressure and rest. Use of pressure points and elevation to control severe bleeding is no longer recommended.</p> <p><i>Circulation Part 16, pg S936-S937</i></p>	<p>Bleeding is best controlled by applying pressure. The pressure must be firm and maintained for a long period of time. Elevation can reduce the amount of pressure applied and can aggravate other injuries (such as fractures).</p>
<p>Tourniquets may be appropriate for bleeding that can not be controlled, however, should only be used with proper training.</p> <p><i>Circulation Part 16, pg S937</i></p> <p>Use of tourniquets will be a knowledge item only; direct pressure is the method of choice.</p>	<p>Because of the potential adverse effects of tourniquets (damage to underlying nerves, muscles and vessels) and difficulty in their proper application, use of a tourniquet to control bleeding of the extremities is indicated only if direct pressure is not effective or possible.</p>
<p>A patient suffering from chest pain can chew one adult or two children ASA provided no history of aspirin allergy or signs of a recent or active GI bleed.</p> <p>If prescribed nitro, they can take up to 3 doses at intervals of 3-5 minutes (provided that LOC remains good).</p> <p><i>Circulation Part 10, pg S790 and S795-796 / Part 16, pg.S936</i></p>	<p>No change from 2005. It is important that the signs and symptoms of acute coronary syndromes be reinforced to lay rescuers. Early administration of ASA has been associated with decreased mortality rates in several clinical trials. Unless a patient has a history of aspirin allergy or signs of a recent or active GI bleed, aspirin should be given. Patients can only take medication prescribed to them or as recommended by a doctor.</p>
<p>First aiders will continue to be taught the signs and symptoms of anaphylaxis and should know how to assist with auto injectors including how to administer if the patient is unable to do so.</p> <p><i>Circulation Part 12, pg S832 / Part 16, pg.S936</i></p>	<p>No change from 2005. It is important that the signs and symptoms of anaphylaxis be reinforced to lay rescuers.</p>

2010 AHA Recommendation “NEW”	Rationale
<p>Supplementary oxygen administration should be considered for divers with a decompression injury.</p> <p><i>Circulation Part 16, pg.S935-S936</i></p>	<p>In 2005, there was insufficient data to make a recommendation for or against the use of oxygen.</p>
<p>If a hypothermic patient does not have effective breathing in the initial assessment (lay rescuer) or a palpable pulse within 10 seconds (HCP), CPR should be initiated immediately.</p> <p><i>Circulation Part 5, pg S696 / Part 12, pg S845-S846</i></p>	<p>In a hypothermic victim, assessments of breathing and pulse are difficult because heart rate and breathing may be very slow. In the past, it was not unusual to assess breathing and/or pulse for up to 1 minute. Slow breathing and pulse is criteria for CPR as an insufficient amount of oxygen is being circulated around the body.</p>
<p>For casualties with suspected heat stroke immersion in cold water is the initial recommended treatment.</p> <p>Electrolyte drinks (sport drinks) can be used in the treatment of heat exhaustion.</p> <p><i>Circulation Part 16, pg S939-S940</i></p>	<p>It is important that the patient be alert prior to immersion in cold water. If the patient has a decreased LOC, the application of wet towels, dousing with water, sponging, etc. would be appropriate.</p>
<p>Jellyfish stings should be liberally washed with vinegar as soon as possible for at least 30 seconds. After the nematocysts are removed or deactivated, immerse in hot water (as tolerated) for about 20 minutes.</p> <p><i>Circulation Part 16, pg S938-939</i></p>	<p>To inactivate venom load, jellyfish stings should be liberally washed with vinegar as soon as possible. After the nematocysts are removed or deactivated, immersion in hot water (as tolerated) is most effective for treating the pain.</p>
<p>Do not apply suction as first aid for snakebites. Initial treatment for snake bites includes direct pressure applied by hand above and below the bite. Apply a pressure bandage along the entire length of the extremity. Bandaging with a compression bandage should snug/loose enough to allow for one finger to slip under the bandaging. Applies to all snakebites.</p> <p><i>Circulation Part 16, pg S938</i></p>	<p>Applying a pressure bandage along the entire length of the extremity is an effective and safe way to slow the dissemination of venom by slowing lymph flow.</p>

NOTES:

2010 AHA GUIDELINES & DROWNING

Annually over half a million Canadians participate in our swimming, lifesaving, lifeguard and leadership programs. Over 25,000 Canadians earn our Bronze Medallion award each year and as Canada's lifeguarding experts; we set the standard for lifeguard training across the country.

With this in mind, we need to consider how the new BLS algorithm, specifically, Compressions-Airway-Breathing (C-A-B) will affect our aquatic programs in light of the drowning research supporting the traditional Airway-Breathing-Circulation (A-B-C) approach to rescue of a drowning patient.

2010 AHA GUIDELINES & DROWNING

According to the 2010 AHA Guidelines for CPR and ECC, the most important and detrimental consequence of submersion is hypoxia; therefore, oxygenation, ventilation, and perfusion should be restored as rapidly as possible. This will require immediate bystander CPR plus activation of the EMS system.

With the *2010 AHA Guidelines for CPR and ECC*, CPR now begins with chest compressions in a C-A-B sequence. However, ***CPR for drowning victims should use the traditional A-B-C approach in view of the hypoxic nature of the arrest.*** Research has shown that it would not be unrealistic to provide rescue breaths not exceeding 20 seconds prior to starting CPR as ***victims with only respiratory arrest usually respond after a few artificial breaths are given.***

The first and most important treatment of the drowning victim is the immediate provision of ventilation. Prompt initiation of rescue breathing increases the victim's chance of survival. Rescue breathing is usually performed once the unresponsive victim is in shallow water or out of the water. As soon as the unresponsive victim is removed from the water, the rescuer should open the airway, check for breathing, and if there is no breathing, give 2 rescue breaths that make the chest rise (if this was not done previously in the water). After delivery of 2 effective breaths, the lay rescuer should immediately apply an AED and/or begin chest compressions according to the BLS guidelines.

EUROPEAN RESUSCITATION COUNCIL (ERC)

In cases of drowning, chest compressions combined with rescue breaths is the method of choice for CPR delivered by both trained lay rescuers and professionals. Most drowning victims will have sustained cardiac arrest secondary to hypoxia. In these patients, compression-only CPR is likely to be less effective and should be avoided.

The first and most important treatment for the drowning victim is alleviation of hypoxia...***give five initial ventilations or rescue breaths as soon as possible.***

INTERNATIONAL LIFESAVING FEDERATION (ILS)

The primary cause of death from drowning is suffocation – a lack of oxygen. To circulate oxygen-poor blood by chest compression alone fails to address the underlying problem. A drowning victim requires oxygen, and requires it fast.

It will be noted that the AHA and ERC each recommend a different number of initial breaths in the resuscitation of drowning victims. Our recommendation is that there be **at least two initial breaths** but would suggest that individuals follow their national guidelines if uncertain about how many to give.

2011 UNITED STATES LIFEGUARD STANDARDS

In all drownings, upper airway management and early rescue breathing is the highest priority.

Early rescue breathing, including in-water resuscitation, is recommended under the following appropriate circumstances: shallow water, a trained rescuer with a flotation aid in deep calm water, or two or more trained rescuers.

During resuscitation, the drowning victim may benefit from airway drainage positioning and minimizing patient movements to reduce vomiting, regurgitation, and the consequent risk of aspiration.

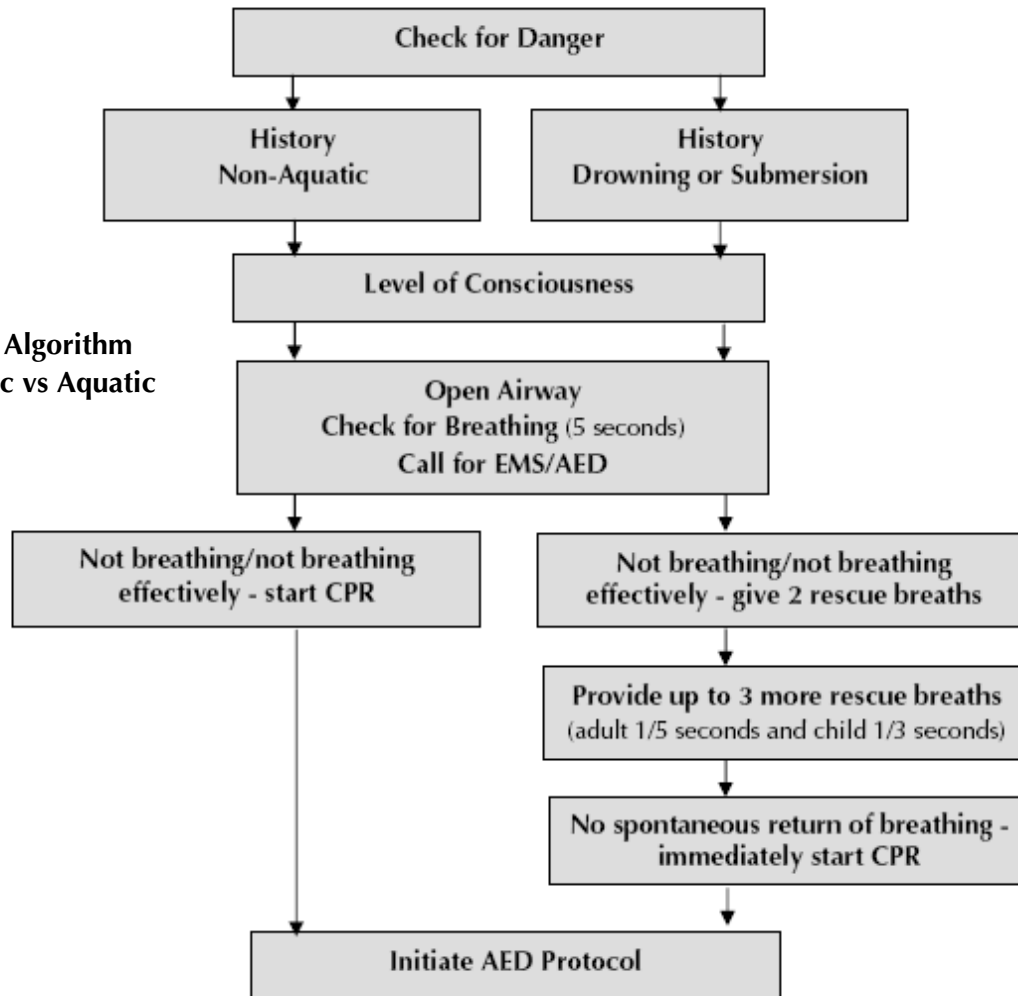
CONCLUSION

Drowning has been identified as a special circumstance where application of the A-B-C algorithm is appropriate. To ensure consistency, the same treatment for submerged or drowning patients will be applied throughout the Lifesaving and NLS curriculum.

It is recommended that a submerged or drowning victim receive two initial rescue breaths followed up by 3 additional rescue breaths (1 breath every 5 seconds for an adult and 1 breath every 3 seconds for a child/infant). If spontaneous breathing does not return, immediately remove the patient (if the rescuer has not already done so) and start CPR.

NOTES:

**Basic BLS Algorithm
Non-Aquatic vs Aquatic**



Summary

The application of the 2 initial and 3 additional rescue breaths must occur within the first 20 seconds to be effective and beneficial for a victim suffering from a hypoxic event.

- ▶ If the rescuer is in deep water (chest deep or greater) or can not effectively deal with complications (vomiting, etc.), they will:
 - Immediately remove the victim from the water
 - If an in-water spinal, load onto a spineboard, secure the chest then head and remove
 - Provide the 2 initial followed up by the 3 additional rescue breaths
 - Immediately start CPR if no return of spontaneous breathing
- ▶ If the rescuer is in shallow water and can effectively deal with complications, they will:
 - Provide the 2 initial followed up by the 3 additional rescue breaths
 - Remove the victim from the water
 - If an in-water spinal, load onto a spineboard, secure the chest then head and remove
 - Immediately start CPR if no return of spontaneous breathing
- ▶ If the rescuer is in shallow water and the victim vomits, they will:
 - Clear the airway and immediately remove the victim
 - If an in-water spinal, load onto a spineboard, secure the chest then head and remove
 - Check for breathing, if not breathing, provide 2 rescue breaths and start CPR.

SUMMARY OF CPR LEVELS & CONTENT

This section highlights the 2010 CPR levels and required content for lay rescuer and health care provider programs. It is important to note that the *Core Content* will be taught in all levels of CPR and will include the new information from the 2010 AHA Guidelines.

It is important to note that there will be a change in CPR equivalency within the Bronze programs to match the required content of the 2010 revisions.

- Bronze Star (stand alone – no longer includes CPR-A)
- Bronze Medallion includes CPR-A
- Bronze Cross includes CPR-C
- Emergency First Aid includes CPR-A
- Standard First Aid includes CPR-C

CORE CONTENT (taught in all levels of CPR including HCP)

- Risk Factors
- Legal implications of CPR/AED use
- Anatomy and physiology of the cardio-respiratory system
- The Chain of Survival
- Self Protection
- Activating EMS
- Assessment
- Care of an unconscious patient
- AED introduction (knowledge component - CFAM page 80-83)
- Heart attack and stroke (recognition and treatment)
- Critical incident stress

CPR LEVEL A

- One-rescuer CPR & AED: adult
- Obstructed airway: conscious adult
- Obstructed airway: unconscious adult

CPR LEVEL B

- One-rescuer CPR & AED: adult
- One-rescuer CPR & AED: child and/or infant (AED knowledge only)
- Obstructed airway: conscious adult
- Obstructed airway: conscious child and/or infant
- Obstructed airway: unconscious adult
- Obstructed airway: unconscious child and/or infant

CPR LEVEL C

- One-rescuer CPR & AED: adult/child
- One-rescuer CPR & AED: child
- One-rescuer CPR: infant (AED knowledge only)
- Obstructed airway: conscious adult/child/infant
- Obstructed airway: unconscious adult/child/infant
- Two-rescuer CPR & AED: adult/child/infant (AED knowledge only for infant)
- Optional item can include rescue breathing (pulse check) without CPR

CPR LEVEL HCP-C

- Core Content
- One-rescuer CPR & AED: adult/child
- One-rescuer CPR: infant (AED application)
- Obstructed airway: conscious adult/child
- Obstructed airway: conscious infant
- Obstructed airway: unconscious adult/child
- Obstructed airway: unconscious infant
- Two-rescuer CPR & AED: adult/child/infant (AED application for all ages)
- Rescue breathing (pulse check) without CPR
- Bag-Valve-Mask
- Optional Items can include oxygen, oral airways and suction

AWARD GUIDE UPDATES

The following section includes updated award guide pages for CPR Award Items included in the following Award Guides:

- Canadian Swim Patrol
- Bronze Medals
- Lifesaving CPR
- Lifesaving First Aid
- National Lifeguard

Adult CPR

Demonstrate single rescuer adult cardiopulmonary resuscitation (CPR) on a manikin. Bronze Medallion and Bronze Cross includes complications (vomiting) and adaptations (mouth-to-nose, stoma)

Purpose

To restore breathing and circulation in an unconscious patient with ineffective or absent breathing.

Notes

- If alone, rescuer phones EMS first and returns with an AED if available. If another person is available, rescuer directs him or her to call EMS and find an AED.
- Rescuers can not be failed if they initiate an EMS call any where in the primary survey.
- Rescuer opens airway using head-tilt/chin lift technique.
- The rescuer will look for chest movement & abnormal breathing (gaspings, severe respiratory distress).
- Rescue breaths: rescuer delivers normal breaths (each over 1 second) that make the chest rise.
- Compress the chest at least 5cm or 2 inches at a rate of at least 100 per minute, allowing for full chest recoil.
- The AED pad that goes on the upper right hand side of the chest should not be placed on the sternum, clavicle or nipple
- The AED pad (heart symbol) that goes on the lower left hand side of the rib cage should not be placed on the abdomen or in the arm pit
- Use of barrier device is recommended.

Reference:

CLM - 7.2 *The ABC Priorities*
CLM - 7.4 *Rescue Breathing*
CLM - 7.5 *Cardiopulmonary Resuscitation*
CLM - *Appendix B*

Must See

- Assessment of environment for hazards
- Establish unresponsiveness
- Position victim (turn on back if necessary)
- Open airway
- Check breathing for 5 seconds (maximum 10 seconds)
- Activate Emergency Medical System (EMS)
- Attempt to obtain AED and/or AED trained person
- If breathing is absent or abnormal and the AED **is not present**, start CPR with compressions (30 compressions: 2 rescue breaths)
- If breathing is absent or abnormal and the AED **is present**, expose the victim's chest and initiate the AED protocol.
- CPR and/or AED continued until EMS takes over treatment or the victim begins to move
- If victim begins to move, reassess ABCs and treat appropriately

AED Protocol

- When the AED arrives, turn on the power and follow the prompts
- Shave and dry chest if necessary
- Position electrodes on victim appropriately and connect to defibrillator
- Do not touch victim during analysis and shock prompts
- Appropriate response to all voice prompts and/or machine indicators
- Initiate 2 minutes of CPR immediately after a shock or "no shock" prompt
- If victim demonstrates life signs, reassess ABC's and treat appropriately
- Do not turn off or disconnect the AED until EMS takes over

Child CPR

Demonstrate single rescuer child cardiopulmonary resuscitation (CPR) on a manikin. Bronze Medallion and Bronze Cross includes complications (vomiting) and adaptations (mouth-to-nose, stoma)

Purpose

To restore breathing and circulation in an unconscious patient with ineffective or absent breathing.

Notes

- If alone, rescuer performs 2 minutes of CPR prior to calling EMS and returning with an AED if available. If another person is available, rescuer directs him or her to call EMS and find an AED.
- Rescuers can not be failed if they initiate an EMS call any where in the primary survey.
- Rescuer opens airway using head-tilt/chin lift technique.
- The rescuer will look for chest movement & abnormal breathing (gaspings, severe respiratory distress).
- Rescue breaths: rescuer delivers normal breaths (each over 1 second) that make the chest rise.
- Compress the chest about 5cm or 2 inches (1/3 the diameter of the chest) at a rate of at least 100/ minute, allowing for full chest recoil.
- The adult AED pad that goes on the upper right hand side of the chest is placed on the centre of the chest for a child.
- The adult AED pad (heart symbol) that goes on the lower left hand side of the rib cage is placed between the shoulder blades of a child.
- Use of barrier device is recommended.

Reference:

CLM - 7.2 *The ABC Priorities*
CLM - 7.4 *Rescue Breathing*
CLM - 7.5 *CPR*
C.I.M - *Appendix B*

Must See

- Assessment of environment for hazards
- Establish unresponsiveness
- Position victim (turn on back if necessary)
- Open airway
- Check breathing for 5 seconds (maximum 10 seconds)
- Activate Emergency Medical System (EMS)
- Attempt to obtain AED and/or AED trained person
- If breathing is absent or abnormal and the AED **is not present**, start CPR with compressions (30 compressions: 2 rescue breaths)
- If breathing is absent or abnormal and the AED **is present**, expose the victim's chest and initiate the AED protocol.
- CPR and/or AED continued until EMS takes over treatment or the victim begins to move
- If victim begins to move, reassess ABCs and treat appropriately

AED Protocol

- When the AED arrives, turn on the power and follow the prompts
- Shave and dry chest if necessary
- Position electrodes on victim appropriately and connect to defibrillator
- Do not touch victim during analysis and shock prompts
- Appropriate response to all voice prompts and/or machine indicators
- Initiate 2 minutes of CPR immediately after a shock or "no shock" prompt
- If victim demonstrates life signs, reassess ABC's and treat appropriately
- Do not turn off or disconnect the AED until EMS takes over

Infant CPR

Demonstrate single rescuer infant cardiopulmonary resuscitation (CPR) on a manikin. Bronze Medallion and Bronze Cross includes complications (vomiting) and adaptations (mouth-to-nose, stoma)

Purpose

To restore breathing and circulation in an unconscious patient with ineffective or absent breathing.

Notes

- If alone, rescuer performs 2 minutes of CPR prior to calling EMS and returning with an AED if available. If another person is available, rescuer directs him or her to call EMS and find an AED.
- Rescuers can not be failed if they initiate an EMS call any where in the primary survey.
- Rescuer opens airway using head-tilt/chin lift technique.
- The rescuer will look for chest movement & abnormal breathing (gaspings, severe respiratory distress).
- Rescue breaths: rescuer delivers a small breath (each over 1 second) that make the chest rise.
- AED use on infants is not taught due to the low likelihood of a lay rescuer encountering an infant in cardiac arrest and having access to an AED with pediatric pads.
- Use of barrier device is recommended.

Reference:

CLM - 7.2 *The ABC Priorities*
CLM - 7.4 *Rescue Breathing*
CLM - 7.5 *Cardiopulmonary Resuscitation*
CLM - *Appendix B*

Must See

- Assessment of environment for hazards
- Establish unresponsiveness
- Position victim (turn on back if necessary)
- Open airway
- Check breathing for 5 seconds (maximum 10 seconds)
- Activate Emergency Medical System (EMS)
- Attempt to obtain AED and/or AED trained person
- If breathing is absent or abnormal, start CPR with compressions (30 compressions: 2 rescue breaths)
- CPR continued until EMS takes over treatment, an person trained in infant AED rescue takes over, or the victim begins to move
- If victim begins to move, reassess ABCs and treat appropriately

Two-rescuer CPR

Demonstrate two-rescuer adult, child and infant cardiopulmonary resuscitation (CPR) on a manikin.

Purpose

To restore breathing and circulation in an unconscious patient with ineffective or absent breathing.

Notes

- One rescuer will perform CPR while the second rescuer calls EMS and returns with an AED if available.
- Trained rescuers have two options. Rescuers take turns doing one-rescuer CPR or one rescuer performs chest compressions while the other provides rescue breaths. Rescuers should switch roles approximately every 2 minutes (5 cycles of 30:2) to minimize fatigue.
- Rescuers communicate and cooperate in decision-making and CPR performance.
- Use of barrier device is recommended.

Reference:

CLM - 7.2 *The ABC Priorities*
CLM - 7.4 *Rescue Breathing*
CLM - 7.5 *Cardiopulmonary Resuscitation*
CLM - *Appendix B*

Must See

Rescuer #1

- Performs one-rescuer adult, child or infant CPR sequence

Rescuer #2

- Identifies self as CPR trained
- Confirms EMS activation and presence of an AED

Both Rescuers

- One rescuer will apply the AED pads while the other rescuer performs CPR
- Continue CPR and switch roles with as little interruption as possible
- CPR and/or AED continued until EMS takes over treatment or the victim begins to move
- If victim begins to move, reassess ABCs and treat appropriately

Obstructed airway: conscious victim

Simulate the appearance and treatment of a conscious adult or child victim with an obstructed airway.

Purpose

To enable lifesavers to recognize a conscious adult or child victim with an obstructed airway and perform the appropriate lifesaving techniques.

Notes

- Discuss common causes of airway obstruction.
- If practicing this skill item on a person, rescuers *simulate* compressions to prevent injury. Wherever possible, use a manikin, not a partner.
- Conscious patient simulates mild or severe obstruction. To signal the type of help needed, teach the universal choking signal.
- Assume severe obstruction if victim nods "yes" when asked "Are you choking?", if victim clutches neck or cannot speak or breathe.
- Abdominal thrusts: stand behind victim, place thumb side of fist slightly above the navel. Grasp fist with other hand and give quick, firm inward and upward thrusts.
- Back blows: with the patient's airway parallel to the ground; give 5 firm back blows with the heel of the hand between the victim's shoulder blades.
- Chest thrusts: stand behind victim, place fist in centre of chest and perform thrusts (same as CPR).
- Demonstrate self-rescue techniques.

Reference:

CLM: 7.2 *The ABC Priorities*
 CLM: 7.3 *Coping with Complications during the ABCs*
 CLM: 8.3 *Airway and Breathing Problems*

Must See

- Assessment of environment for hazards
- Assessment of degree of obstruction – ask "Are you choking?"
- Rescuer identifies self – ask "Can I help?"
- Selection of appropriate procedures:

Mild Obstruction

- Coughing encouraged
- Reassurance for victim

Severe Obstruction

- Shout for help
- Careful landmarking
- Alternating 5 abdominal thrusts and 5 back blows until the airway is clear
- Alternating 5 chest thrusts and 5 back blows for obese or pregnant patients until the airway is clear
- If successful, victim directed to see a physician to rule out complications from the obstruction or treatment

If victim becomes unresponsive

- Activate Emergency Medical System (EMS)
- Perform 30 chest compressions
- Check the mouth before attempting to ventilate
- If unsuccessful, reposition the airway and re-attempt to ventilate
- If unsuccessful, careful landmarking and 30 chest compressions
- Foreign body check: look in mouth and if object can be seen, attempt to remove it
- Attempt to ventilate: if successful continue CPR sequence
- If unsuccessful, repeat sequence (reposition head, re-attempt to ventilate, chest compressions, foreign body check) until successful

Obstructed airway: conscious infant

On a manikin, demonstrate the treatment of a conscious infant with an obstructed airway.

Purpose

To enable lifesavers to recognize a conscious infant with an obstructed airway and perform the appropriate lifesaving techniques.

Notes

- Assessing degree of obstruction includes sudden onset of breathing difficulty, coughing or gagging, high-pitched noise, weak cry or cyanosis.
- Rescuer assumes severe obstruction if victim cannot cough or make any sound.
- Back blows: with the head lower than the body; give 5 firm back blows with the heel of the hand between the victim's shoulder blades.
- Chest thrusts: lay victim on a firm surface, landmark and perform 5 thrusts (same as CPR).

Reference:

CLM: 7.2 *The ABC Priorities*

CLM: 7.3 *Coping with Complications during the ABCs*

CLM: 8.3 *Airway and Breathing Problems*

Must See

- Assessment of environment for hazards
- Assessment of degree of obstruction
- Rescuer identifies self to caregiver– ask “Can I help?”
- Selection of appropriate procedures:

Mild Obstruction

- Coughing encouraged
- Reassurance for victim

Severe Obstruction

- Shout for help
- Careful landmarking
- Alternating 5 back blows and 5 chest thrusts until the airway is clear
- If successful, caregiver directed to take victim to see a physician to rule out complications from the obstruction or treatment

If victim becomes unresponsive

- Activate Emergency Medical System (EMS)
- Perform 30 chest compressions
- Check the mouth before attempting to ventilate
- If unsuccessful, reposition the airway and re-attempt to ventilate
- If unsuccessful, careful landmarking and 30 chest compressions
- Foreign body check: look in mouth and if object can be seen, attempt to remove it
- Attempt to ventilate: if successful continue CPR sequence
- If unsuccessful, repeat sequence (reposition head, re-attempt to ventilate, chest compressions, foreign body check) until successful

Obstructed airway: unconscious victim

Simulate the treatment of an unconscious adult or child with an obstructed airway.

Purpose

To clear an airway obstruction and restore normal breathing in an unconscious victim.

Notes

- If practicing this skill item on a person (versus a manikin), rescuers *simulate* compressions to prevent injury. Wherever possible, use a manikin, not a partner.
- Send bystander to phone EMS. If alone with an adult patient, phone EMS right away. If alone with a child patient, rescuer calls EMS after 2 minutes (5 cycles of 30:2) of CPR. Unconscious patients should be left in a recovery position.
- Rescuer opens airway using head-tilt/chin lift technique.
- The rescuer will look for chest movement & abnormal breathing (gaspings, severe respiratory distress).
- If the AED is **present**, initiate the AED protocol.
- Compress the chest of an adult at least 5cm or 2 inches at a rate of at least 100 per minute, allowing for full chest recoil.
- Compress the chest of a child about 5cm or 2 inches (1/3 the diameter of the chest) at a rate of at least 100/ minute, allowing for full chest recoil.
- Use of barrier devices is recommended.

Reference:

CLM: 7.2 *The ABC Priorities*
 CLM: 7.3: *Coping with Complications during the ABCs*
 CLM: 8.3 *Airway and Breathing Problems*

Must See

- Assessment of environment for hazards
- Establish unresponsiveness
- Position victim (turn on back if necessary)
- Open airway
- Check breathing for 5 seconds (maximum 10 seconds)
- Activate Emergency Medical System (EMS)
- Attempt to obtain AED and/or AED trained person
- The AED is **not present**, start CPR with compressions (30 compressions: 2 rescue breaths)
- Attempt to ventilate
- If unsuccessful, reposition the airway and re-attempt to ventilate
- If unsuccessful, careful landmarking and 30 chest compressions
- Foreign body check: look in mouth and if object can be seen, attempt to remove it
- Attempt to ventilate: if successful continue CPR sequence
- If unsuccessful, repeat sequence (reposition head, re-attempt to ventilate, chest compressions, foreign body check) until successful
- Procedure continued until EMS takes over treatment or the victim begins to move
- If victim begins to move, reassess ABCs and treat appropriately

Obstructed airway: unconscious infant

Simulate the treatment of an unconscious infant with an obstructed airway.

Purpose

To clear an airway obstruction and restore normal breathing in an unconscious victim.

Notes

- If practicing this skill item on a person (versus a manikin), rescuers *simulate* compressions to prevent injury. Wherever possible, use a manikin, not a partner.
- Send bystander to phone EMS. If alone with an adult patient, phone EMS right away. If alone with an infant, rescuer calls EMS after 2 minutes (5 cycles of 30:2) of CPR. Unconscious patients should be left in a recovery position.
- Rescuer opens airway using head-tilt/chin lift technique.
- The rescuer will look for chest movement & abnormal breathing (gaspings, severe respiratory distress).
- Compress the chest of a infant about 4cm or 1.5 inches (1/3 the diameter of the chest) at a rate of at least 100/ minute, allowing for full chest recoil.
- Use of barrier devices is recommended.

Reference:

CLM: 7.2 *The ABC Priorities*

CLM: 7.3: *Coping with Complications during the ABCs*

CLM: 8.3 *Airway and Breathing Problems*

Must See

- Assessment of environment for hazards
- Establish unresponsiveness
- Position victim (turn on back if necessary)
- Open airway
- Check breathing for 5 seconds (maximum 10 seconds)
- Activate Emergency Medical System (EMS)
- Attempt to obtain AED and/or AED trained person
- If breathing is absent or abnormal, start CPR with compressions (30 compressions: 2 rescue breaths)
- Attempt to ventilate
- If unsuccessful, reposition the airway and re-attempt to ventilate
- If unsuccessful, careful landmarking and 30 chest compressions
- Foreign body check: look in mouth and if object can be seen, attempt to remove it
- Attempt to ventilate: if successful continue CPR sequence
- If unsuccessful, repeat sequence (reposition head, re-attempt to ventilate, chest compressions, foreign body check) until successful
- Procedure continued until EMS takes over treatment or the victim begins to move
- If victim begins to move, reassess ABCs and treat appropriately

Primary assessment: hazards & ABCs

Item 10

Demonstrate a primary assessment including hazards and ABCs on an unconscious, breathing victim.

Purpose

To assess an unconscious breathing victim with respect to hazards and ABCs.

Notes

- Victim is classified as an adult. If alone, rescuer phones EMS first and returns with an AED if one is available. If another person is available, rescuer directs him or her to phone EMS and find an AED.
- To establish level of consciousness, rescuer may pinch the shoulder and ask "Are you OK?" Other techniques are acceptable.
- If the victim is on their side or front, the rescuer may have to roll them to their back to assess for breathing.
- Rescuer opens airway using head-tilt/chin lift technique
- The rescuer will look for chest movement & abnormal breathing (gaspings, severe respiratory distress).
- See suggested learning activities p. 69, 70.

Reference:

CLM Chapter 6.4

Conduct the Primary Assessment

Must See

- Assessment of environment for hazards
- Establish unresponsiveness
- Position victim (turn on back if necessary)
- Open airway
- Check breathing for 5 seconds (maximum 10 seconds)
- Activate Emergency Medical System (EMS)
- Attempt to obtain AED and/or AED trained person
- Check for bleeding
- Recovery position
- Patient kept warm

Rescue non-breathing victim in deep water

Perform a rescue of an unconscious, non-breathing victim in deep water. Return with the victim to the beach, dock or poolside. Untrained bystanders assist in victim removal. Rescuer performs appropriate follow-up procedures, including treatment for shock.

Purpose

To prepare for the prevention of loss of life in an aquatic emergency with minimum risk to the rescuer.

Notes

- Realistic victim simulation will assist in accurate recognition and appropriate rescue response.
- Victim should be near the surface and may be face-up or face-down.
- Aids (preferably not kickboards) should be realistic & appropriate to an unsupervised environment.
- Rescuers are not required to perform unassisted removals. Bystanders can be trained or untrained.
- Rescuer opens airway using head-tilt/chin lift technique.
- The rescuer will look for chest movement & abnormal breathing (gaspings, severe respiratory distress).
- Drowning/submerged victims: deliver 2 initial breaths prior to starting CPR, attempt 3 additional breaths (1 breath every 5 sec for adult/3 sec for child), if no return of spontaneous breathing, immediately remove the patient (if not already done) and start CPR.
- Use of barrier devices is recommended.

Reference:

CLM: 4 *The Rescue of Others*
 CLM: 7.2 *The ABC Priorities*
 CLM: 7.4 *Rescue Breathing*
 CLM: 7.5 *Cardiopulmonary Resuscitation*
 CLM: *Appendix A & B*

Must See

- Quick, accurate recognition
- Personal safety maintained throughout
- Appropriate assessment of situation
- Call for help
- Appropriate choice and use of rescue aid
- Appropriate entry, approach (maintaining visual contact), reverse and ready, and carry for the circumstances
- Victim secured at the nearest point of safety
- Open airway
- Check breathing for 5 seconds (maximum 10 seconds)
- Activate Emergency Medical System (EMS)
- Attempt to obtain AED and/or AED trained person
- If breathing is absent or abnormal, 2 initial rescue breaths then 3 additional rescue breaths
- The AED is **not present**, start CPR with compressions (30 compressions: 2 rescue breaths)
- CPR and/or AED continued until EMS takes over treatment or the victim begins to move
- If victim begins to move, reassess ABCs and treat appropriately
- Appropriate care of victim throughout including constructive communication
- Appropriate use of and clear direction of bystanders

Item 14

Rescue 2

Perform a rescue of a non-breathing victim located in deep water, 5m from a point of safety. The situation involves an unsupervised environment and is designed to emphasize victim care, removals with bystander assistance, and follow-up including contact with EMS.

Purpose

To prevent loss of life in an aquatic emergency with minimum risk to the rescuer.

Notes

- Realistic victim simulation will assist in accurate rescuer recognition and appropriate response.
- Victim may be located at or just below the surface.
- Rescuer opens airway using head-tilt/chin lift technique.
- The rescuer will **look** for chest movement & abnormal breathing (gaspings, severe respiratory distress).
- Rescue breathing is initiated as soon as the candidate can effectively deal with vomiting. Rescue breathing in deep water is not expected.
- Drowning/submerged victims: deliver 2 initial breaths prior to starting CPR, attempt 3 additional breaths (1 breath every 5 sec for adult/3 sec for child), if no return of spontaneous breathing, immediately remove the patient (if not already done) and start CPR.
- Rescuers are not required to perform unassisted removals. Bystanders can be trained or untrained.
- Basic understanding of critical incident stress.

Reference:

CLM: 4 *The Rescue of Others*
 CLM: 7.2 *The ABC Priorities*
 CLM: 7.4 *Rescue Breathing*
 CLM: 7.5 *CPR*
 CLM: *Appendix A and B*

Must See

- Quick, accurate recognition
- Appropriate assessment of situation - call for help
- Appropriate choice and use of rescue aid
- Appropriate entry, approach (maintaining visual contact), reverse and ready, and carry for the circumstances
- Victim secured at the nearest point of safety
- Safe and effective removal with bystander assistance
- Open airway
- Check breathing for 5 seconds (maximum 10 seconds)
- Activate Emergency Medical System (EMS)
- Attempt to obtain AED and/or AED trained person
- If breathing is absent or abnormal, 2 initial rescue breaths then 3 additional rescue breaths
- If the AED is **not present**, start CPR with compressions (30 compressions: 2 rescue breaths)
- If the AED is **present**, expose the victim's chest and initiate the AED protocol.
- CPR and/or AED continued until EMS takes over treatment or the victim begins to move
- If victim begins to move, reassess ABCs and treat appropriately
- Effective use and direction of bystanders where appropriate
- Effective use of barrier devices where appropriate
- Appropriate care of victim throughout including constructive communication
- Lowest risk rescue possible under the circumstances and concern for personal safety throughout

Item 13

Rescue 2

Perform a rescue of a submerged, non-breathing victim. The situation is designed to emphasize victim care, removal, and follow-up including contact with EMS.

Purpose

To prevent the loss of life in an aquatic emergency with minimum risk to the rescuer. To provide care until relief of responsibility is obtained.

Notes

- Realistic victim simulation will assist in accurate rescuer recognition and appropriate response.
- Victim is located at a maximum depth of 3m.
- Rescuer opens airway using head-tilt/chin lift technique.
- The rescuer will look for chest movement & abnormal breathing (gaspings, severe respiratory distress).
- Rescue breathing is initiated as soon as the candidate can effectively deal with vomiting. Rescue breathing in deep water is not expected.
- Drowning/submerged victims: deliver 2 initial breaths prior to starting CPR, attempt 3 additional breaths (1 breath every 5 sec for adult/3 sec for child), if no return of spontaneous breathing, immediately remove the patient (if not already done) and start CPR.
- Rescuers are not required to perform unassisted removals. Bystanders can be trained or untrained.
- Basic understanding of critical incident stress.

Reference:

CLM: 4 *The Rescue of Others*
 CLM: 7.2 *The ABC Priorities*
 CLM: 7.4 *Rescue Breathing*
 CLM: 7.5 *CPR*
 CLM: *Appendix A and B*

Must See

- Quick, accurate recognition
- Appropriate assessment of situation - call for help
- Appropriate choice and use of rescue aid
- Safe and effective entry, approach (maintaining visual contact), and carry
- Protection of airway during ascent and thereafter
- Victim secured at the nearest point of safety
- Safe and effective removal with bystander assistance
- Open airway
- Check breathing for 5 seconds (maximum 10 seconds)
- Activate Emergency Medical System (EMS)
- Attempt to obtain AED and/or AED trained person
- If breathing is absent or abnormal, 2 initial rescue breaths then 3 additional rescue breaths
- If the AED is **not present**, start CPR with compressions (30 compressions: 2 rescue breaths)
- If the AED is **present**, expose the victim's chest and initiate the AED protocol.
- CPR and/or AED continued until EMS takes over treatment or the victim begins to move
- If victim begins to move, reassess ABCs and treat appropriately
- Effective use and direction of bystanders where appropriate
- Effective use of barrier devices where appropriate
- Appropriate care of victim throughout including constructive communication
- Lowest risk rescue possible under the circumstances and concern for personal safety throughout

Management of submerged non-breathing victim

Demonstrate effective management of a submerged, non-breathing victim.

Purpose

To demonstrate effective individual skills in the management of a submerged non-breathing victim.

Notes

- Emphasis is on the candidate's individual skill ability rather than a team response.
- Reference Appendix A for CPR Must Sees.
- Item is performed without an aid. No AED is present.
- Rescuer opens airway using head-tilt/chin lift technique.
- The rescuer will look for chest movement & abnormal breathing (gaspings, severe respiratory distress).
- Rescue breathing is initiated as soon as the candidate can effectively deal with vomiting. Rescue breathing in deep water is not expected.
- Drowning/submerged victims: deliver 2 initial breaths prior to starting CPR, attempt 3 additional breaths (1 breath every 5 sec for adult/3 sec for child), if no return of spontaneous breathing, immediately remove the patient (if not already done) and start CPR.
- Rescuers are not required to perform unassisted removals.
- Victim condition may include any combination of airway obstruction or vomiting

Reference:

CLM: 4 *The Rescue of Others*
CLM: 7 *Lifesaving Priorities*
CLM: 7.4 *Rescue Breathing*

Must See

- Quick entry and descent
- Rapid ascent
- Secure hold on victim during ascent
- Protection of airway during ascent and thereafter
- Quickest route to point where rescue breathing and CPR may be effectively initiated and complications dealt with (side of pool, shallow water, rescue craft)
- Safe and effective removal with lifeguard or bystander assistance
- Open airway
- Check breathing for 5 seconds (maximum 10 seconds)
- Activate Emergency Medical System (EMS)
- Attempt to obtain AED and/or AED trained person
- If breathing is absent or abnormal, 2 initial rescue breaths then 3 additional rescue breaths
- The AED is **not present**, start CPR with compressions (30 compressions: 2 rescue breaths)
- Ability to deal with complications (vomiting, obstructed airway) at any point in performance
- CPR continued until EMS takes over treatment or the victim begins to move
- If victim begins to move, reassess ABCs and treat appropriately
- Effective use of barrier devices where appropriate
- Effective use and direction of bystanders where appropriate

Item 3c

Management of spinal-injured victim

Demonstrate effective management of a victim with a suspected spinal injury.

Purpose

To demonstrate effective individual skills in the management of a breathing or non-breathing victim with a spinal injury.

Notes

- Emphasis is on individual skill rather than a team response (lifeguards act as back-up). Each candidate must be evaluated on all Must Sees.
- Types of spinal injuries can include cervical and lumbar.
- Victims are located in deep or shallow water, on land, or walking. Deep water victims are removed from shallow water where possible.
- Initially open the airway with a jaw thrust. If the jaw thrust does not work, reposition with a head-tilt/chin lift.
- The rescuer will look for chest movement & abnormal breathing (gaspings, severe respiratory distress).
- Rescue breathing is initiated as soon as the candidate can effectively deal with vomiting. Deep water rescue breathing is not expected.
- Drowning/submerged victims: deliver 2 initial breaths prior to starting CPR, attempt 3 additional breaths (1 breath every 5 sec for adult/3 sec for child), if no return of spontaneous breathing, immediately remove the patient (if not already done) and start CPR.
- Aim for prompt removal and preparation for transport.

Reference:

Alert: 3 *Aquatic Emergencies: Recognition and Intervention*
Alert: 4 *Management of spinal injuries*
CLM: 5.10 *Rescue Procedures for Spinal Injuries*

Must See

- Quick, accurate recognition and appropriate entry
- Smooth rollover performed if necessary
- Immobilization of the spine during rollover and throughout (to extent possible)
- Victim assessment: level of consciousness and ABCs
- Activate Emergency Medical System (EMS)
- Attempt to obtain AED and/or AED trained person
- Ability to deal with complications (vomiting, obstructed airway)
- Effective use of barrier devices where appropriate
- Stabilization with a spineboard or other appropriate device (in-water victim only)
- Preparation for transportation and removal (in-water victim only)
- Safe removal from water where possible (in-water victim only)
- Secondary assessment where feasible
- Appropriate and effective direction of bystanders where applicable

If victim is unresponsive and breathing is absent or abnormal (reference Appendix A for CPR Must Sees)

- Open airway
- Check breathing for 5 seconds (maximum 10 seconds)
- If breathing is absent or abnormal, 2 initial rescue breaths then 3 additional rescue breaths (can be performed before or after removal)
- The AED is **not present**, start CPR with compressions (30 compressions: 2 rescue breaths)
- Movement of victim minimized throughout

Item 8

Spinal injury

As a member of a team, perform a rescue of a victim with a suspected spinal injury who is located in a catch basin, wave pool, channel, stairs or who has fallen from a height.

Purpose

To recover and immobilize a spinal-injured victim in a difficult location.

Notes

- Candidates respond as part of a team (which may vary in number). Each individual's performance is evaluated, not the team performance.
- Use a manikin to practice recovery of victim in a flume.
- Victim can be conscious or unconscious, breathing or not breathing, etc.
- Initially open the airway with a jaw thrust. If the jaw thrust does not work, reposition with a head-tilt/chin lift.
- The rescuer will look for chest movement & abnormal breathing (gaspings, severe respiratory distress).
- Rescue breathing is initiated as soon as the candidate can effectively deal with vomiting. Deep water rescue breathing is not expected.
- Drowning/submerged victims: deliver 2 initial breaths prior to starting CPR, attempt 3 additional breaths (1 breath every 5 sec for adult/3 sec for child), if no return of spontaneous breathing, immediately remove the patient (if not already done) and start CPR.
- Aim for prompt removal and preparation for transport.
- A run-out channel may be at the bottom of a high-speed slide.

Reference:

Alert: 3 *Aquatic Emergencies: Recognition and Intervention*
Alert: 4 *Management of spinal injuries*
CLM: 5.10 *Rescue Procedures for Spinal Injuries*

Must See

- Quick, accurate recognition and appropriate entry
- Smooth rollover performed if necessary
- Immobilization of the spine during rollover and throughout (to extent possible)
- Victim assessment: level of consciousness and ABCs
- Activate Emergency Medical System (EMS)
- Attempt to obtain AED and/or AED trained person
- Ability to deal with complications (vomiting, obstructed airway)
- Effective use of barrier devices where appropriate
- Stabilization with a spineboard or other appropriate device (in-water victim only)
- Preparation for transportation and removal (in-water victim only)
- Safe removal from water where possible (in-water victim only)
- Secondary assessment where feasible
- Appropriate and effective direction of bystanders where applicable
- Treatment for shock

If victim is unresponsive and breathing is absent or abnormal (reference Appendix A for CPR Must Sees)

- Open airway
- Check breathing for 5 seconds (maximum 10 seconds)
- If breathing is absent or abnormal, 2 initial rescue breaths then 3 additional rescue breaths (can be performed before or after removal)
- The AED is **not present**, start CPR with compressions (30 compressions: 2 rescue breaths)
- Movement of victim minimized throughout

AWARD GUIDE FIRST AID AMENDMENTS

To ensure accurate and consistent delivery of the first aid recommendations across the country, please **amend** the following in the identified Award Guides.

SWIM PATROL AWARD GUIDE

- Rookie Patrol Item 13 – Care for bleeding
 - Recommend removing the following Must See(s)
Elevation if appropriate

- Ranger Patrol Item 11 – Shock
 - Recommend removing the following Must See(s)
Semi-prone position (unless injury dictates otherwise)
Replace the Must See(s) with
Recovery position (unless injury dictates otherwise)
 - Recommend adding the following Note(s)
Recovery position is used for all victims who have normal breathing and a spinal injury is not suspected. This position is designed to maintain a patent airway and reduce the risk of airway obstruction and aspiration.

- Star Patrol Item 13 – Respiratory emergencies
 - Recommend adding the following Note(s)
Rescuers should know how to assist with auto-injectors including how to administer if the patient is unable to do so.

BRONZE MEDALS AWARD GUIDE

- Bronze Medallion Item 9a – Circulatory emergencies: shock
- Bronze Medallion Item 9d – Circulatory emergencies: stroke &TIA
 - Recommend adding the following Note(s)
Recovery position is used for all victims who have normal breathing and a spinal injury is not suspected. This position is designed to maintain a patent airway and reduce the risk of airway obstruction and aspiration.

- Bronze Medallion Item 9b – Circulatory emergencies: heart attack or angina
 - Recommend adding the following Note(s)
*A patient suffering from chest pain can chew one adult or two children ASA.
The victim must have their own ASA, no history of an aspirin allergy and no signs of a recent or active GI bleed.*

- Bronze Medallion Item 9c – Circulatory emergencies: external bleeding
 - Recommend removing the following Must See(s)
 - Elevation of injury where possible*

- Bronze Cross Item 8 – Hypothermia
 - Recommend adding the following Note(s)
 - If the rescuer does not detect normal breathing in the hypothermic victim after 5-10 seconds in the ABC assessment, they must immediately initiate rescue breaths (if victim was submerged) and CPR.*

NLS AWARD GUIDE

- Appendix A – Respiratory distress (p. 55)
 - Recommend adding the following Note(s) to Anaphylaxis
 - Rescuers should know how to assist with auto-injectors including how to administer if the patient is unable to do so.*

- Appendix A – Shock (p. 56)
- Appendix A – Stroke/TIA (p. 56)
 - Recommend adding the following Note(s)
 - Recovery position is used for all victims who have normal breathing and a spinal injury is not suspected. This position is designed to maintain a patent airway and reduce the risk of airway obstruction and aspiration.*

- Appendix A – External bleeding (p. 56)
 - Recommend removing the following Must See(s)
 - Elevation of injury where possible*

- Appendix A – Heart attack or angina (p. 56)
 - Recommend adding the following Note(s) to Anaphylaxis
 - A patient suffering from chest pain can chew one adult or two children ASA.*
 - The victim must have their own ASA, no history of an aspirin allergy and no signs of a recent or active GI bleed.*

- Appendix A – Heat and cold (p. 56)
 - Recommend adding the following Note(s) for cold
 - If the rescuer does not detect normal breathing in the hypothermic victim after 5-10 seconds in the ABC assessment, they must immediately initiate rescue breaths (if victim was submerged) and CPR.*

 - Recommend adding the following Note(s) for heat
 - Electrolyte drinks (sport drinks) can be used in the treatment of heat exhaustion.*
 - Immersion in cold water is the initial recommended treatment for conscious victims suffering from heat stroke.*

- Appendix A – Poisoning (p. 59)
 - Recommend adding the following Note(s)

Jellyfish stings should be liberally washed with vinegar as soon as possible for at least 30 seconds. After the nematocysts are removed or deactivated, immerse in hot water (as tolerated) for about 20 minutes.

FIRST AID AWARD GUIDE(S)

- First Aid Award Guides are Branch specific
 - Ensure that the first aid recommendations on pages 11-12 and 32-34 of this document are written into Branch Awards Guides and resources as they apply to the Emergency First Aid, Standard First Aid and Aquatic Emergency Care programs.
 - Ensure that the Award Guide Updates on page 17-31 of this document are applied to Branch Awards Guides and resources as they apply to the CPR, Emergency First Aid, Standard First Aid and Aquatic Emergency Care programs.
 - Ensure that the HCP recommendations on page 35 of this document are written into Branch Awards Guides and resources as they apply to the Health Care Provider program. An HCP treatment template can be found on page 36-37 of this document to assist Branches in updating their HCP Award Guides.

NOTES:

HEALTH CARE PROVIDER UPDATE

All resuscitation recommendations as outlined above are to be applied to the Health Care Provider (HCP) level. The most significant change from 2005 to 2010 is a shift in focus to a teamwork approach. HCP training should focus on building the team as each member arrives or delegating roles if multiple rescuers are present. This better reflects real life applications in ambulance or hospital settings.

In addition, it is recommended that Health Care Providers:

- Be able to customize treatments to a specific mechanism of injury where appropriate (such as A-B-C for the drowning patient).
- Be trained to apply the AED on infants as they have a higher likelihood of encountering an infant in cardiac arrest and having access to an AED with pediatric pads.
- No longer be trained in the use of cricoid pressure due to the inability of being able to properly teach it in a classroom setting and as such the improper application in the field.
- To facilitate delivery of ventilations with a BVM, oral airways can be used in unconscious patients with no cough or gag reflex. Oral airways should only be inserted by persons trained in their use.

As per the 2005 Guidelines, it is recommended that:

- If a pulse is present, but normal breathing is not detected, the rescuer will initiate rescue breathing. The rescue breath ratio will be 1 breath every 5-6 seconds (every 5 seconds recommended) for an adult and 1 breath every 3-5 seconds (every 3 seconds recommended) for a child/infant.
- The lone rescuer should not use a BVM, the 2 person BVM technique is preferred.

2010 Recommendation "NEW"	2005 Recommendations "OLD"
HCP should focus on a teamwork approach. It is realistic that HCP providers gear treatment to the cause. <i>Circulation Part 1, pg S643</i>	No previous recommendation.
For infants (<1 year of age), an AED with a pediatric dose attenuation is desirable. <i>Circulation Part 6, pg S711</i>	There was insufficient data to make a recommendation for or against the use of AEDs for infants <1 year of age.
The routine use of cricoid pressure in cardiac arrest is not recommended (HCP only). <i>Circulation Part 1, pg S645</i>	Cricoid pressure should be used only if the victim is deeply unconscious (HCP only).

SUMMARY OF BLS TREATMENTS – Health Care Provider (HCP) CPR

The following chart outlines basic life support treatment, specifically CPR, for providers of advanced care.

	Adults (8+ years) (HCP puberty onward)	Children (1-8 years) (HCP 1 year to puberty)	Infants (< 1 year) (HCP < 1 year)
Scene Assessment	Check for Danger / What Happened?		
Recognition	Unresponsive to verbal and painful stimuli (pinch and shout)		
Assess Breathing	Open the airway and look for absent or abnormal breathing (gaspings is not normal breathing) for 5 seconds (max. 10 seconds)		
Assess Circulation	Assess for a pulse for a min. of 5 seconds and a max. 10 seconds		
	Begin CPR if no pulse is present	Begin CPR if no pulse is present or if the pulse is less than 60 beats/minute with poor perfusion	
EMS	Lone Rescuer - Activate EMS and retrieve AED if immediately available	Lone Rescuer – 2 minutes of care/Activate EMS/retrieve an AED if immediately available	
CPR Sequence	C-A-B (start with compressions)		
Compression Rate	At least 100 compressions/minute		
Compression Depth	At least 2 inches (5cm)	At least 1/3 AP diameter about 2 inches (5cm)	At least 1/3 AP diameter about 1½ inches (4cm)
Compression Ratio	30:2 1 or 2 rescuers	30:2 for 1 rescuer/15:2 for 2 rescuers	
Compression Interruptions	Ensure proper landmarking and full chest recoil Minimize interruptions and attempt to limit interruptions to <10 seconds If possible, rotate compressors every 2 minutes Apply AED pads during CPR Immediately start CPR after shock/no shock		
Airway	Head tilt-chin lift Initially a jaw thrust (suspected spinal injury), if air does not go in, reposition with a head tilt-chin lift		
Breathing	2 rescue breaths (1 second breaths - observe chest rise and fall) Take regular rather than deep breaths to prevent gastric distention/over inflation of the lungs 1 rescue breath every 6-8 seconds with advanced airway		
Defibrillation	Attach an AED as soon as it becomes available Adult/Child/Infant		
Reassessment	Pulse reassessment every 2 minutes on a patient with a pulse Only reassess ABCs on a pulseless patient if they show signs of life.		

SUMMARY OF BLS TREATMENTS – Health Care Provider Unconscious Obstructed Airway

The following chart outlines basic life support treatment, specifically unresponsive obstructed airway, for providers of advanced care.

	Adults (8+ years) (HCP puberty onward)	Children (1-8 years) (HCP 1 year to puberty)	Infants (< 1 year) (HCP < 1 year)
Scene Assessment	Check for Danger / What Happened?		
Recognition	Unresponsive to verbal and painful stimuli (pinch and shout)		
Assess Breathing	Open the airway and look for absent or abnormal breathing (gaspings is not normal breathing) for 5 seconds (max. 10 seconds)		
Assess Circulation	Assess for a pulse for a min. of 5 seconds and a max. 10 seconds		
	Begin CPR if no pulse is present	Begin CPR if no pulse is present or if the pulse is less than 60 beats/minute with poor perfusion	
EMS	Lone Rescuer - Activate EMS and retrieve AED if immediately available	Lone Rescuer – 2 minutes of care/Activate EMS/retrieve an AED if immediately available	
CPR Sequence	C-A-B (start with compressions)		
Compression Rate	At least 100 compressions/minute		
Compression Depth	At least 2 inches (5cm)	At least 1/3 AP diameter about 2 inches (5cm)	At least 1/3 AP diameter about 1½ inches (4cm)
Compression Ratio	30:2 1 or 2 rescuers	30:2 for 1 rescuer/15:2 for 2 rescuers	
Compression Interruptions	Ensure proper landmarking and full chest recoil Minimize interruptions and attempt to limit interruptions to <10 seconds If possible, rotate compressors every 2 minutes Apply AED pads during CPR Immediately start CPR after shock/no shock		
Airway	Head tilt-chin lift Initially a jaw thrust (suspected spinal injury), if air does not go in, reposition with a head tilt-chin lift		
Breathing	Attempt to ventilate (air does not go in) - reposition (air does not go in) - 30 chest compressions Check the mouth (no obstruction) - attempt to ventilate (air does not go in) – reposition - attempt to ventilate (air does not go in) – 30 compressions Check the mouth (remove obstruction) - attempt to ventilate (air goes in) – provide 2 rescue breaths and check for a pulse If no normal breathing or pulse is present continue with the CPR and AED protocol		
Responsive to Unresponsive	Alternating abdominal thrusts (5) and back blows (5) If pregnant or obese, alternating chest thrusts (5) and back blows (5)		Alternating back blows (5) and chest thrusts (5)
	Patient goes unresponsive – call for EMS and an AED – perform 30 chest compressions Follow “Breathing” steps outlined above		

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