



FREQUENTLY ASKED QUESTIONS (FAQ)

2010 Guidelines for CPR & ECC

As of October 18, 2010

Q: Where can I find the new guidelines?

A: The new 2010 Guidelines for CPR and ECC can be found at www.heartandstroke.ca/CPRguidelines

Q: What are the most significant changes in the 2010 Guidelines for CPR & ECC?

A: Major changes for all rescuers, all of which are intended to simplify CPR for rescuers and improve bystander response, include:

- A change in the CPR sequence, from Airway-Breathing-Compressions (A-B-C) to Compressions-Airway-Breathing (C-A-B)
- Continued emphasis on providing high-quality chest compressions:
 - Push hard, push fast
 - Minimize interruptions
 - Allow full chest recoil
 - Avoid excessive ventilation
- Recommendation that the chest should be depressed at least 2 inches (as opposed to approx 1 ½ to 2 inches, recommended in 2005)
- Recommendation that chest compressions should be performed at a rate of at least 100/min (2005 recommendation was “Compress at a rate of about 100/min”)
- The creation of a simplified universal algorithm for adult CPR

Q: Why did the CPR sequence change from A-B-C to C-A-B?

A: There are many reasons for this change. First, this change allows rescuers to begin chest compressions right away. As we know, most victims of sudden cardiac arrest (SCA) receive no bystander CPR. One of the reasons for this may be that the A-B-C CPR sequence began with opening the airway, the most difficult and daunting task for the rescuer. This change attempts to decrease the barriers to performing CPR by allowing the rescuer to start with chest compressions.

Also, the vast majority of SCAs occur in adults who suffer a witnessed arrest and ventricular fibrillation (VF) or pulseless ventricular tachycardia (VT). In these victims, critical elements of resuscitation are chest compressions and early defibrillation, which can begin earlier if there is no delay to open the airway and provide breaths.

The process of opening the airway (which may involve getting a barrier device or setting up ventilation equipment) takes time and delays the start of CPR. Using the C-A-B sequence lessens this delay.

Q: Does the new CPR sequence apply to all ages?

A: No. This change applies to adults, children and infants, but excludes newborns. For newborns, rescuers should continue to use the A-B-C CPR sequence with a 3:1 ratio of compressions to breaths. This is because newborn cardiac arrest is most often respiratory.



Q: What are the specific recommendations regarding chest compressions for untrained versus trained rescuers?

A: While the 2005 Guidelines recommended chest compression-only CPR if the rescuer was unwilling or unable to provide ventilation, there was no recommendation provided for trained versus untrained rescuers. Research now tells us that compression only CPR is easier for a bystander to perform and that survival rates are similar with either compression only CPR or CPR with both compressions and breaths.

Therefore, the new recommendations are:

- If a bystander is not trained in CPR, he/she should provide compression only CPR for an adult who suddenly collapses, or follow the directions of the emergency medical system (EMS) dispatcher
- All trained rescuers should, at a minimum, provide chest compressions for victims of SCA
- If a trained lay rescuer is able, he/she should perform rescue breaths at rate of 30:2

In all cases, the rescuer should continue CPR until an automated external defibrillator (AED) is available for use or EMS arrives and assumes care.

Q: Why do the 2010 Guidelines put so much emphasis on chest compressions?

A: Chest compressions provide vital blood flow to the heart and brain during an SCA, and research shows that delays or interruptions to compressions reduced survival rates. Research shows that rescuers who opened the airway first took 30 critical seconds longer to begin chest compressions than those who started CPR with chest compressions.

Ventilations are not as critical, as victims will have oxygen remaining in their lungs and bloodstream for the first few minutes of an SCA. Starting CPR with chest compressions can pump that blood to the victim's brain and heart sooner.

Compressions should be started as soon as possible, and interruptions in chest compressions should be minimized throughout the entire resuscitation process.

Q: Why do the new Guidelines recommend a new depth for chest compressions?

A: We know that rescuers often don't compress deep enough despite messaging to "push hard, push fast." The 2005 Guidelines recommended a range of compression depth (between 1 ½ to 2 inches), and a range may cause confusion. To simplify compressions, one compression depth is now recommended. Also, science suggests compressions of at least 2 inches are more effective than those of 1 ½ inches.

Q: Why do the new Guidelines recommend a new rate for providing for chest compressions?

A: The new recommendation for the rate of chest compressions is that, "It is reasonable for lay rescuers and healthcare providers HCPs to perform chest compressions at a rate of at least 100/min." Studies have shown that higher compression rates are associated with higher survival rates (and slower compression rates with lower survival rates). Also, the number of compressions per minute is shown to be an important factor in the return of spontaneous circulation, or ROSC.



Q: Why was “Look, Listen, and Feel for Breathing” eliminated in the 2010 Guidelines?

A: This action was removed from the CPR sequence since the sequence now begins with compressions. Also, this action delays the resuscitation process for rescuers performing CPR with both compressions and breaths. The 2010 Guidelines recommend that after delivery of 30 compressions, the rescuer should open the airway and deliver 2 breaths. Breaths should be given if the adult is unresponsive and not breathing or not breathing normally.

Q: What is the simplified universal algorithm for adult CPR and why was it created?

A: An algorithm is a sequence of actions depicted visually. A universal algorithm for adult CPR was created as part of the 2010 Guidelines in an effort to simplify lay rescuer training and continue to emphasize need for early chest compressions for adult victims of SCA.

Q: If chest compressions are so important, why aren’t ventilations eliminated completely?

A: Studies have shown that CPR that combines chest compressions and ventilations is the most effective method for treating children and infants, because cardiac arrest in children and infants is typically secondary to conditions that compromise or prevent breathing (hypoxia). A combination of compressions and breaths is also the most effective in the treatment of adult cardiac arrest caused by near-drowning, trauma, drug overdose and other non-cardiac causes.

The challenge in adopting compression-only CPR as the ONLY form of CPR is that rescuers would not be prepared to give ventilations to those who need them the most. If two forms of CPR are taught, rescuers also would need to be trained to differentiate between cardiac arrests caused by different circumstances– either resulting from cardiac or respiratory causes. This would complicate training, especially for bystanders, and reduce the likelihood that they would take correct and prompt action in an emergency.

Q: What are the key changes for EMS dispatchers?

New Guidelines include recommendations specific to dispatchers, including:

- Dispatchers should be trained to identify agonal gasps to help rescuers who may be confused by agonal gasps or seizure-like activity.
- A strong recommendation that dispatchers instruct untrained rescuers to provide compression only CPR for victims who are not breathing or not breathing normally and provide instructions for both compressions and breathing if they suspect respiratory arrest.

Q: Are there key changes affecting emergency medical services (EMS)?

A: Yes, among the 2010 Guidelines recommendations for healthcare professionals are new recommendations for the activation of EMS. Instead of immediately activating EMS after finding an unresponsive victim, as recommended in the 2005 Guidelines, healthcare professions should now first check for response to determine if the victim is not breathing or not breathing normally.

Once the healthcare professional identifies an adult victim unresponsive with no breathing or no normal breathing he/she should activate EMS response. He/she then should retrieve an AED or send someone to do so. If the healthcare provider does not feel a pulse within 10 seconds, he/she should begin CPR and use the AED when it is ready.



Q: What are the key recommendations for healthcare professionals?

Key recommendations for healthcare professionals include:

- Effective teamwork techniques should be learned and practiced regularly
- Professional rescuers should use quantitative waveform capnography — the monitoring and measuring of carbon dioxide output — to confirm intubation and monitor CPR quality
- Therapeutic hypothermia, or cooling, should be part of an overall interdisciplinary system of care after resuscitation from cardiac arrest
- Atropine is no longer recommended for routine use in managing and treating pulseless electrical activity (PEA) or asystole

Q: Are there key changes regarding use of AEDs?

A: The 2010 Guidelines include the following recommendations regarding AEDs:

- For infants, while a manual defibrillator is preferred, an AED may now be used if a manual defibrillator is not available

Q: Will the changes to the CPR sequence mean that AEDs have to be reprogrammed?

A: It is currently not a requirement for AED manufacturers to make changes to devices based on the new Guidelines. However, some manufacturers may wish to make changes to their devices' voice prompts to emphasize or reiterate the new sequence.

Q: Were AED or other device manufacturers told in advance about the changes in the 2010 Guidelines?

A: No. Due to the strict embargo of the 2010 Guidelines for CPR & ECC, manufacturers of CPR, first aid or other ECC devices were not provided with any information prior to October 18, 2010. It is understood that it would take time for manufacturers to update devices to reflect changes to the Guidelines. Rescuers should continue to follow the prompts of any AED or other device that they may encounter even if it is programmed to follow the CPR sequence in the 2005 Guidelines. The release of new recommendations is not meant to imply that care involving the use of earlier Guidelines is either unsafe or ineffective.

Q: Now that new Guidelines for CPR and ECC have been released, does that mean the “old” Guidelines and the “old” way of performing CPR are not safe or effective?

A: The recommendations in the 2010 Guidelines for CPR & ECC confirm the safety and effectiveness of many existing approaches, acknowledge that some may not be optimal, and introduce new treatments that have undergone intensive evaluation. These new recommendations do not imply that care involving the use of earlier Guidelines is either unsafe or ineffective. This includes providing CPR using the A-B-C sequence. People should continue to perform CPR just as they were last trained and follow the prompts of the AED that they are using.

Q: When will the new Guidelines for CPR “go into effect” since new materials are not yet available?

A: You can begin incorporating the new guidelines in to your classes once you have completed a Provincial Instructor update for your discipline(s) and received the teaching bridging materials. You will also need to ensure you have viewed the HSFC 2010 Guidelines webinar prior to attendance at the update. Until Instructors receive these materials, they should continue to teach the same science they have been teaching using the current materials. Training materials reflecting the new Guidelines will launch throughout 2011.



Q: If I just took a CPR or ECC course, will I need to take the class again?

A: No, anyone who took an HSFC CPR or advanced cardiovascular care course prior to the release of new Guidelines does not need to take the course again until it is time for retraining. An employer or regulatory agency may set specific requirements for either an in-service update, or require employees to retake the course with the new Guidelines.

Q: If I don't have to take another class until my course completion card expires, should I perform CPR using the "old" sequence of A-B-C versus the new sequence of C-A-B?

A: You should continue to perform CPR the way you were taught to in your CPR class by your Instructor. New recommendations do not imply that care involving the use of earlier Guidelines is either unsafe or ineffective.

Q: What about legal aspects of performing CPR using the "old" sequence?

A: 'Good Samaritan laws', which apply in most provinces, state that as long as a person is acting in good faith, he/she cannot be held liable. Performing CPR in the manner in which a person was taught is acting in good faith. The most important thing is that people take immediate action. The new recommendations do not imply that care involving the use of earlier Guidelines is either unsafe or ineffective.

Q: Should EMS and hospitals (or everyone for that matter) begin implementing the new C-A-B CPR sequence immediately?

A: Local EMS and hospital protocols are determined by the medical director of those respective healthcare systems and may be changed by those authorities at any time. An EMS system or hospital may opt to implement C-A-B CPR at any time.

However, through HSF Guidelines Instructor Updates, HSF will begin providing Instructors with the tools that will allow them to integrate the new science into their current courses. New training materials reflecting new Guidelines will become available throughout 2011.

Q: I have purchased (or received) an HSFC CPR Anytime kit, which teaches CPR using the A-B-C sequence. Should I not use the CPR taught through the kit? Will I be able to receive a refund or an updated CPR practice DVD reflecting the C-A-B sequence?

A: The CPR that is taught in the CPR Anytime kits is safe and effective, and those who purchased CPR Anytime kits should continue to perform CPR the way it is taught on the CPR Anytime Skills Practice DVD. For this reason, there will not be a "replacement" DVD for the kit.

The kit teaches the core skills of CPR (both compressions and ventilations) and emphasizes the use and effectiveness of compression only CPR for rescuers who are unwilling or unable to provide ventilations. Being prepared to respond with CPR is the most important part of CPR Anytime training.



[Key Questions from the 2010 Guidelines on CPR and ECC Webinar](#)

Q: Why is atropine no longer recommended in the management and treatment of pulseless electrical activity (PEA) or asystole?

A: Five prospective controlled nonrandomized cohort studies in adults showed that treatment with atropine was not associated with any consistent benefits after in-hospital or out-of-hospital cardiac arrest. For this reason atropine has been removed from the cardiac arrest algorithm.

Q: In unstable bradycardia are the guidelines now saying use atropine rather than pacing as a first line treatment?

A: Yes. The Guidelines publication answers the why fairly well:

Transcutaneous pacing (TCP) may be useful for the treatment of symptomatic bradycardias. **There are limited studies comparing TCP with drug therapy** for the treatment of symptomatic bradycardia. A randomized controlled trial in which atropine and glycopyrrolate were compared with TCP showed few differences in outcome and survival, although the TCP group obtained a more consistent heart rate. In a study evaluating the feasibility of treatment with dopamine as compared with TCP, no differences were observed between treatment groups in survival to hospital discharge. **TCP is, at best, a temporizing measure.** TCP is painful in conscious patients, and, whether effective or not (achieving inconsistent capture), the patient should be prepared for transvenous pacing and expert consultation should be obtained. It is reasonable for healthcare providers to initiate TCP in unstable patients who do not respond to atropine (Class IIa, LOE B). **Immediate pacing might be considered in unstable patients with high-degree AV block when IV access is not available (Class IIb, LOE C).** If the patient does not respond to drugs or TCP, transvenous pacing is probably indicated (Class IIa, LOE C).

Q: How has BLS changed if I am an ACLS provider in a team?

A: Practically, perhaps not at all. The emphasis of ACLS is provision of good BLS. Once you have a team of providers, interventions can occur simultaneously with CPR. Interventions should not interfere with or supersede BLS and defibrillation.

Q: Can I use adult automated external defibrillator (AED) electrode pads/paddles on an infant? If so where do I place them?

A:

- Small ('infant') pads/paddles are recommended for patients under 10 kg (or 1 year).
- Larger pads/paddles reduce transthoracic impedance thereby increasing the current reaching the heart (what we want when defibrillating a patient) therefore it is recommended to use adult paddles as soon as they can fit on the chest without touching each other.
- If the rescuer or healthcare provider only has adult pads/paddles available they can be used on an infant in the anterior/posterior position. The anterior pad should be placed on the chest just to the left of the sternum and the posterior pad/paddle over the back. In a case of known dextrocardia the anterior pad/paddle should be placed just to the right of the sternum.
- Always apply firm pressure to paddle to create good contact between the paddle and the skin as this has been shown to reduce transthoracic impedance.



Q: If I am not a trained rescuer what can I do to help save a life?

A: The new guidelines empower everyone in saving a life. If not trained in CPR, then call 911 or your local emergency number and start CPR by pushing hard and fast in the centre of the chest. When CPR is combined with an Automated External Defibrillator (AED), survival rates from cardiac arrest are greatly improved.

Q: If I am a health care provider do I have to check a pulse?

A: Health care providers are recommended to check for a pulse, but to limit a pulse check to less than 10 seconds in duration.

Q: Will I do any harm if I start compressions on a beating heart?

A: It is not dangerous to perform chest compressions even if the heart is still beating. Properly placed and effective chest compressions have not been demonstrated to cause serious harm to patients.

Q: What has changed in the BLS for children and infants?

A: The major changes for BLS in children are as follows:

- Compression only for those untrained in CPR and those trained but not proficient in providing ventilations.
- The BLS sequencing of C-A-B for children and infants is now recommended.
- 'Look, listen and feel' is removed.
- 30:2 compressions-ventilations for single providers, and 15:2 compressions-ventilations for two health care providers.
- To achieve effective chest compressions, rescuers should compress at least one third the anterior-posterior diameter of the chest (5 cm in children, 4 cm in infants).
- For infants, a manual defibrillator is preferred to an AED. If not available, an AED equipped with a pediatric dose attenuator is preferred. If neither is available, an AED without an attenuator may be used.

Q: When will HSFC courses reflect the new Guidelines?

A: HSFC training materials updated to reflect new Guidelines will launch throughout 2011. Below are the current product release dates. Preliminary dates are subject to change at any time.

Release Dates by Calendar Quarter:

First Quarter 2011 (January – March)

- 2010 Handbook of ECC for Healthcare Providers
 - Basic Life Support for Healthcare Providers (BLS HCP)
 - Family & Friends CPR
 - Family & Friends CPR Anytime kit

Second Quarter 2011 (April – June)

- Advanced Cardiovascular Life Support (ACLS)
- Heartsaver products, including:
 - Heartsaver CPR/AED

Third Quarter 2011 (July – Sept.)

- Pediatric Advanced Life Support (PALS)

All products within the product lines will be released at the same time (i.e., Instructor and Student materials together).