Introduction
In November 2005, the “2005 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 “2005 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 2005 and early 2006, the Lifesaving Society worked with the Heart and Stroke Foundation of Canada, St. John Ambulance, Canadian Red Cross 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 2005 ILCOR Guidelines continue the process of simplifying and making CPR training easier to do and learn. Most of the changes are relatively minor changes 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. An example is the introduction of a compression:ventilation ratio of 30 compressions to 2 rescue breaths. The result is better blood circulation during CPR. Other changes are designed to improve learning and skill retention. Applying the 30:2 compression:ventilation ratio to adult, child and infant victims means rescuers only have to learn and remember a single 30:2 ratio for all victim types instead of different ratios for each victim type. In this case the change improves medical outcomes as well as learning.

Changes and Rationale
This section summarizes the changes to Resuscitation skills (Basic Life Support skills) that have been incorporated into the Lifesaving Society programs based on the 2005 ILCOR Guidelines. It also includes information about the reasons for the changes.

Type of responder
The 2005 Guidelines define 2 groups of responders: Lay Responders and Health Care Providers (HCP). In Canada, lifeguards, lifesavers and first aiders are defined as Lay Responders. Lay Responders also include the general public and family members. The other responder group is Health Care Providers which includes physicians, nurses, paramedics, etc. HCP responders have access to more advanced skills and training appropriate to a medical environment.

Emphasis on the value of CPR
The research concluded that good, effective CPR resulted in better medical outcomes and survival rates. The guidelines identified 3 components of good, effective CPR:

1. push hard and fast – forceful, fast CPR provides better circulation of blood and oxygen.

2. allow chest to recoil fully between compressions: 50% compression, 50% relaxation – relaxing the pressure on the chest between compressions allows the heart to refill and pump more blood with each compression.

3. minimize interruptions in compressions – blood flow stops if compressions stop.
When to phone EMS
After determining that the victim is unresponsive, the rescuer should send a bystander to phone EMS. If a rescuer is alone with an adult victim, the rescuer immediately goes to phone EMS. If the rescuer is alone with child or infant victims - before leaving the victim to phone EMS, confirm that they are breathing, or if not breathing; perform about 5 cycles of CPR (30:2 compressions:breaths). In children and infants, cardiac arrest is often due to lack of oxygen and they need CPR as soon as possible. Some child and infant victims may improve immediately due to the initial CPR.

Getting an AED (Automated External Defibrillator)
If the rescuer knows an AED and AED trained responder is available, the rescuer should send for them after activating EMS. As AEDs and trained responders become more commonly available in many facilities, they should be recruited to assist with the treatment of unresponsive victims. Use of an AED can significantly improve survival when used in conjunction with good, effective CPR.

Opening airway of suspected spinal injury victim
If rescue breathing is required for a victim with a suspected spinal injury, the rescuer can open the airway using the head-tilt/chin-lift method. The research found that the jaw thrust and the head-tilt/chin-lift methods of opening the airway both cause neck movement and many rescuers have difficulty doing the jaw thrust effectively. If a rescuer tries the jaw thrust and cannot open the airway, use the head-tilt/chin-lift method to open the airway. Teaching the head-tilt/chin-lift method to open the airway reduces the number of different methods the rescuer must learn and remember for opening the airway. When using a rescue breathing barrier device such as a pocket mask, some rescuers may have difficulty using the head-tilt/chin-lift method to open the airway and may need to try the jaw thrust or jaw thrust with a head-tilt.

Checking for breathing
Look, listen and feel for no more than 10 second. For adult victims, check for normal breathing. If an unresponsive adult victim is gasping, begin rescue breathing. An unresponsive, gasping adult victim is probably in cardiac arrest and requires CPR. For child and infant victims, check for the presence or absence of breathing.

Rescue breaths
The depth and duration of the each rescue breath is reduced. The rescuer delivers a normal (not deep) breath over 1 second with just enough force to cause the chest to rise. Because blood flow is reduced during CPR, less ventilation is required. Delivering a normal breath prevents interference with CPR and prevents gastric distention.

Do not check for pulse
If the victim is unresponsive and nonbreathing, start chest compressions immediately after giving 2 rescue breaths. Do not check for a pulse before starting chest compressions. This applies to all Lay Responders including lifeguards, lifesavers and first aiders. Research has found that most Lay Responders do not accurately assess pulse and as a result may not do CPR when required. Many Health Care Providers also have difficulty accurately assessing pulse in an unresponsive nonbreathing victim.

After starting CPR, the rescuer continues CPR until EMS takes over treatment, or an AED trained responder with AED begins treatment, or the victim begins to move. If the victim begins to move - reassess ABCs and treat appropriately.
New Resuscitation Standards

Summary of changes

Landmarking for chest compressions
For adult and child victims, landmark on the centre of a line drawn between the nipples. Landmark for infant victims is 1 finger width below the nipple line. Using the nipple line for landmarking provides an easy visual reference for all victim types.

Chest compressions for child and adult victims - use 2 hands
Rescuers use 2 hands for chest compressions of both child and adult victims. This simplifies the procedure by providing a single method for adult and child victims and makes it easier for rescuers to learn and retain their compression skills. Many rescuers also find it easier to balance and control their compressions when using 2 hands instead of 1 hand. Still use 2 fingers for infant chest compressions. It is also an option to use 1 hand compressions for child victims.

Compression depth
Adult compression depth remains 4-5 cm (1.5-2 inches). For child and infant victims the compression depth is changed to about ⅓ to ½ the depth of the chest. Using compression depth based on chest depth for child and infant victims adjusts the compression depth to fit the large variation in the size of child and infant victims.

Single compression: ventilation ratio of 30:2 for all victim types
Beginning with chest compressions, the rescuer performs CPR with repeating cycles of 30 chest compressions followed by 2 rescue breaths for all victim types: infant, child and adult. The 30:2 ratio reduces interruptions in compressions and produces more effective circulation during CPR. A single ratio makes it easier for rescuers to learn and remember their CPR skills.

Two Rescuer CPR – reducing fatigue
The research found that fatigue began to affect the effectiveness of compressions in as little as 2 minutes. Two rescuer CPR allows rescuers to take turns doing compressions and minimize fatigue by changing compressors every 5 cycles of 30:2 (about 2 minutes). Two rescuer CPR options include:

1. 2 rescuers taking turns doing single rescuer CPR – for many rescuers this will be the easiest version to do and coordinate with the other rescuer.

2. 1 rescuer does chest compressions while other does rescue breathing – switch roles every 2 minutes.

3. trained rescuer recruits a bystander to assist with compressions - bystander does chest compressions for 2 minutes while trained rescuer does rescue breathing. Bystander rests while the trained rescuer does compressions and rescue breathing for 2 minutes. Repeat.

Assessing conscious airway obstruction – mild vs. severe
The description of the assessment of airway obstruction in a conscious victim has been simplified to mild or severe. Assume severe obstruction if victim nods “yes” when asked “Are you choking”, clutches neck or cannot speak or make any sound. Rescuer takes action to expel obstruction. For mild obstruction – encourage coughing. No change to the methods used to treat this type of obstruction.

Unconscious obstructed airway – chest compressions
Chest compressions will continue to be used to try to expel an obstruction in an unresponsive, nonbreathing victim. The number of chest compressions for all victim types (infant, child and adult) is 30 – the same as for CPR. After 30 compressions, look in the mouth for obstruction before attempting rescue breathing.