OSHA: Cardiopulmonary Resuscitation (CPR) Overview

Key Takeaways:

- Understanding the steps and actions needed to administer CPR correctly.
- Learning the purpose of an AED, the precautions for its use, and the correct method of use.

Course Description
There is a 4 to 6 minute window in which the human brain can survive without oxygen; afterwards, irreversible brain damage or death is certain.

The technique of cardiopulmonary resuscitation (CPR) is used to inhibit the process of brain death by restarting the heart and getting a person breathing again. CPR forces oxygen to the brain and other vital organs of a person who, by every indication, is dead. When performed early and correctly, the technique can buy time for the victim until proper medical attention can be given. Typically, CPR will be used for someone undergoing cardiac arrest.

Cardiac arrest occurs when the heart malfunctions and unexpectedly stops beating. Cardiac arrest can be triggered by an electrical irregularity in the heart that causes an arrhythmia (an irregular heartbeat or interruption of the heart’s normal rhythm) and disrupts or shuts down the organ’s pumping action completely. If the heart shuts down, blood fails to reach other vital organs and causes them to fail. approximately 10,000 incidents of cardiac arrest occur at work each year and according to the American Heart Association, nearly all cardiac arrest victims die before reaching the hospital.

Heart attack is another common cause of cardiac arrest. Heart attacks (myocardial infarction) are the death of heart muscle because of sudden blockage from plaque or a blood clot of the coronary artery supplying the heart with oxygenated blood from the lungs. Majority of heart attack victims do survive the first

attack. Common treatment for heart attacks include angioplasty and drugs that destroy the plaque or blood clot.

Lastly, heart stoppage can be related to a disease-induced heart attack where heart muscles die from lack of oxygen. For every case without immediate medical attention, the victim collapses, loses consciousness, becomes unresponsive, and dies. Unfortunately, the survival rate for such incidents occurring away from the hospital setting is only between 1 and 5 percent.

In order to increase the survivorship rate of cardiac arrest events, the Occupational Safety & Health Administration (OSHA), the American Heart Association, and the Red Cross now recommend and encourage the use of automated external defibrillators (AEDs) and CPR when responding to a victim of cardiac arrest. AEDs have become smaller, more affordable, and increasingly portable over time, and they help fix the condition of arrhythmia with restorative electrical impulses.

In the case that someone is suffering cardiac arrest, defibrillation is the sole way to re-establish a regular heartbeat. CPR by itself will not restart a heart in cardiac arrest. You should know that CPR is just a temporary measure used to continue a minimal supply of oxygen to the brain and other organs. Other treatment for cardiac arrest involves CPR, drugs, and defibrillation.

Studies have proven that 90% of victims survive if they are defibrillated during the first minute after collapse and up to 70% are more likely to survive if they are defibrillated within the first five minutes after the onset of an attack. Although, each minute of delay in defibrillation causes 10% fewer survive, so by 10 minutes survival is unexpected.

Keep in mind that even if someone is worried their knowledge or abilities aren’t 100 percent complete, it’s far better to do something than nothing. You could mean all the difference between someone’s life or death.

CAB Method for Cardiopulmonary Resuscitation (CPR) Training:

- Chest compressions
- Airway
- Breathing

Here are 7 common CPR mistakes you should watch out for:

1. Never become another victim. Quickly assess the situation before beginning CPR, especially when you are at risk of drowning, electrocution or poisoning.
2. Never forget to call for help first. Prior to performing CPR, call for help so additional support is on the way. Majority of people cannot perform adequate CPR for more than a few minutes.
3. Never stop CPR by attending to minor injuries. The victim's chances of survival are lowered every minute without chest compressions.
4. Never give mouth-to-mouth resuscitation priority over chest compressions. Especially if you're not trained in mouth-to-mouth breathing, it's more important to only do chest compressions.
5. Never do compressions too slowly or quickly. Make sure to follow standard protocol of around 100 chest compressions per minute.
6. Never bend your elbows, keep them straight and fingers interlocked to help you apply the right amount of pressure.
7. Never forget to exert sufficient force when performing chest compressions. You cannot be scared of hurting the victim. Although, you may hear a pop or crack in their chest, you aren't putting them in any more danger than they are already in. Try to compress the chest in about 2 inches for adults and 1 inch for young children.