

CPR—DO YOU KNOW THE NEWEST TECHNIQUE?

By: Pamela H Caudell, RN, CNOR, CSPDS, ACSP

Objectives:

- Discuss the history of CPR
- Describe the changes in new standards regarding chest compressions

You and your work partner are having a good time working and talking at the same time. Suddenly, there is a look of extreme pain on your friend’s face and she drops to the floor. Oh my goodness, what do you do now? If this happened to you, would you know what to do?

CPR, short for cardiopulmonary resuscitation, is the only known effective method of keeping someone who has suffered a cardiac arrest long enough for treatment to be delivered. In the middle portion of the 1700s, in the city of Amsterdam, a large city of canals, here were listed as many as 450 deaths per year. A group of citizens got together to discuss the possibility of saving drowning victims. From this group called the “Society for Recovery of Drowned Persons”, there came about several methodologies for stimulating the body to breathe again.

Some of these were:

- ◆ Warming the victim
- ◆ Removing swallowed or aspirated water by positioning the victim’s head lower than the feet
- ◆ Applying manual pressure to the abdomen
- ◆ Respirations in the victim’s mouth, either by using bellows or with a mouth-to-mouth method. In this description there was advised to use a cloth or handkerchief to render the operation less indelicate.
- ◆ Tickling the victim’s throat
- ◆ Bloodletting

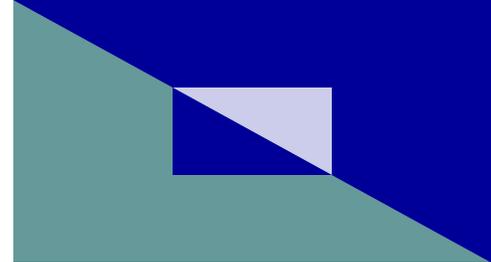
- ◆ “stimulating” the victim by such means as oral fumigation. It is believed that nicotine was enough to stimulate a response in the “almost” dead.

Now I grant you fumigation is not something we practice now but some of the others are still in practice today. These practices proved that it was indeed possible to resuscitate someone who was actively drowning which eventually led to our current practices.

In 1769, Hamburg, Germany passed an ordinance that notices be read during church services describing ways to assist victims of drowning, strangulation, frozen persons as well as those overcome by noxious fumes. These notices could actually have been the first mass medical training.

For the next 150 years, literally everybody in the scientific field had their own way of doing what we now know as CPR. Up until the late 1950s, the Boy Scouts were taught the “out goes the bad air in comes the good”. We now know that this process only works when there is still a heart beat. Circulation has now been proven to be even more important than originally thought.

Both doctors and scientists, in more modern times, have set about devising new techniques and looking at possible risk factors as well as exploring other uses for medications in use during the late 1940s and early 1950s. In 1954, a physician, Dr. James Elam, an anesthesiologist, showed the technique of exhaled-air ventilation was a sound technique for providing respirations to non-breathing victims. The problem became a matter of getting people to believe in this technique and to get the scientific public to adopt this method for the betterment of the public. Several years later, Dr. Elam met up with Dr. Peter Safar who was also an anesthesiologist. Together the two of them did studies to show it was possible to keep people aerated with either mouth-to-mouth or manual methodologies. In 1957, the United States Military accepted and endorsed the method and in 1958, the AMA followed with their approval.



However, chest compression for circulation was not practiced or studied because it was not something that was easily spotted, particularly not by the average public. It really came about quite by accident. William Bennett Kouwenhoven, Guy Knickerbocker and James Jude at Johns Hopkins University were doing research using defibrillators on dogs. They noticed that when putting pressure on the paddles for defibrillation, they got a pulse in the femoral area. With further experimentation, they were able to achieve circulation with chest compressions.

In 1960, Safar, Jude and Kouwenhoven presented convincing data to the Maryland Medical Society, the use of chest compressions and mouth-to-mouth respiration together were necessary to prevent death.

In 1962, a training video was produced to instruct the public on this new technique. The mnemonic of A, B & C was devised during the making of this video because it was easy to remember and stood for the steps that needed to be done sequentially; airway, breathing and circulation. In 1963, The American Heart Association officially endorsed CPR as a method of saving lives. In 1966 a conference was held to establish a standardized method of teaching CPR and what the performance standards were to be.

From then until now, the practice of CPR-cardiopulmonary resuscitation- became nationally used as the method to prevent cardiac death in anyone suffering a heart attack, drowning, freezing or electrical shock. The defibrillator was expanded upon to the point of being able to use such a device in the field where the trauma occurred. We even have trained medical technicians working in the field able to give the necessary treatment to patients based on a diagnosis from a physician based in an ER, not in the field.

In 2010, data from continuing research showed that keeping the circulation going had become more important than just maintaining an airway. This has happened largely because most cardiac arrests happen in adults. The critical initial elements of basic life support for this age group are chest compressions and defibrillation.

As a consequence, A-B-C has now been changed to C-A-B. This has been endorsed by the American Heart Association and is now starting to be taught in the BLS classes. The rationale for this is to ensure that chest compressions are started sooner while the blood is still oxygenated. It has been proven that if a person looks for breathing first and tries to open the airway, it takes 30 seconds longer to start chest compressions.

If you are or have been trained in CPR, the recommendation still includes ventilation breaths. This is to be done at a ratio of 30 chest compressions to 2 breaths. This is also the standard for infants and children but not newly born infants.

The new recommendations include:

Compressions of at least 100/minute

Compressions should be to a depth of at least 2 inches in adults and children but only 1.5 inches in infants

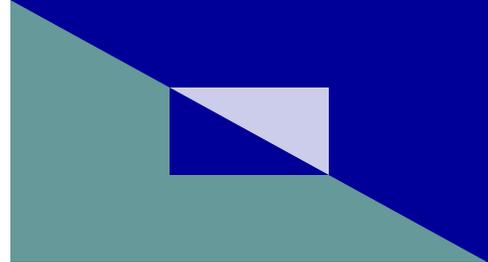
Allow chest to come back to start position after each compression.

Minimize all interruptions to chest compressions (don't stop and start) Call 9-1-1 first then start hard and fast on chest compressions until help comes

Avoid excessive ventilation (if you know how to do it)

The idea behind all of this is two fold. The first is to ensure all arrested persons have the same opportunity for recovery. Most lay people are uncomfortable doing ventilation on a person, particularly one they don't know. Chest compressions are something that can and should be started immediately to assist in the recovery of a stricken patient and practically everyone feels they can do that much. Secondarily, it is something that can, if necessary, be taught over the phone. 9-1-1 operators are able to talk almost everyone thru doing chest compressions which again may save additional lives. For all of us, whether professional or not need to be aware of what we can do to assist someone in need. With these changes in our CPR, the chances of assisting more people have definitely improved. Help yourself and those around you. Learn CPR.

CPR and YOU
2010-2011



1. One of the original methods for stimulating the body to breathe included bloodletting.
TRUE FALSE
2. One of the 1st mass medical trainings took place during church services as descriptions were read describing ways to resuscitate drowning victims.
TRUE FALSE
3. The Boy Scouts had one method of resuscitation dealing w/”out goes bad air—in comes the good”.
TRUE FALSE
4. Circulation is now proven to be even less important than originally thought.
TRUE FALSE
5. Dr. James Elam, who used the technique of exhaled air ventilations as a sound technique to assist non-breathing victims.
TRUE FALSE
6. In 1968, the AMA approved the use of mouth-to-mouth resuscitation.
TRUE FALSE
7. Chest compressions have been practiced since the early 1700’s.
TRUE FALSE
8. A, B, C steps were instituted because they were easy to remember.
TRUE FALSE
9. In 2010, data showed that keeping the circulation going was more important than just maintaining an airway.
TRUE FALSE
10. One of the new recommendations include compressions of at least 140 compressions per minute.
TRUE FALSE

EVALUATION--Please evaluate this in-service by selecting a rating between 0 and 4.

0=Not Applicable, 1=Poor, 4=Excellent

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Author’s Methodology, Interesting/Creativity **0 1 2 3 4**

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