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Evolution of Resuscitation

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by Gerald M. Dworkin
January 8, 1999



In order to appreciate the resuscitation protocols being advocated today, as well as new innovations in techniques, protocols, and technologies, it is important to know how these resuscitation procedures have evolved over the years. Therefore, this presentation has been developed for this purpose.

Early Ages – Heat Method

When a victim's respiratory and circulatory systems fail and metabolism ceases, the body temperature cools. In the early ages, hot ashes and coals were placed on the victim's chest in an effort to re-initiate breathing and heartbeat as well as to re-warm the patient. If the victim was only asleep, this procedure was remarkably successful. However, if the victim were in respiratory and/or circulatory arrest, this procedure was futile.

Early Ages – Flagellation Method

Due to the success of this procedure, national CPR training organizations adopted this procedure as the initial steps which must be used to determine the level of responsiveness of the unconscious victim. In the early ages, the would-be rescuers would actually whip the victim in an attempt to stimulate some type of response.

1530 – Bellows Method

Unfortunately, not many people carried fireplace bellows with them, but the success of this procedure motivated various manufacturers to design and manufacture Bag-Valve-Mask Resuscitators. However, back in 1530, the medical authorities were not aware of the anatomy of the respiratory system and did not appreciate the need to hyperextend the victim's airway in order to obtain a patent airway.

1711 – Fumigation Method

I, personally, have been active in the field of EMS education since 1968. Many times, a procedure advocated at some time, is then considered obsolete, only to be re-introduced into the field many years later. However, the day this procedure is re-introduced into the field is the day I resign and retire from this field. According to the literature, smoke was blown into an animal bladder, then into the victim's rectum. Used successfully by North American Indians and American colonists. This procedure was introduced in England in 1767. Why this procedure was successful – I have no idea. But, this is where the expression, "Smoke blown", came from.

1770 – Inversion Method

Back in the 1770's, Lifeguard Personnel had to be big and strong because of the resuscitation procedures being advocated at the time. Stanchions were added onto the beach Lifeguard stands. When a victim was rescued, the Lifeguard would tie the victim's ankles together and attach the victim to the stanchion where the victim would be alternately raised and lowered in an attempt to force air in and out of the victim's chest cavity. Unlike Lifeguard Competitions of today, imagine the Lifeguard being timed during the competition in a resuscitation event which looked more like a rodeo event with the cowboy tying the legs of a calf and throwing his arms in the air once they were secure.

1773 – Barrel Method

In an effort to force air in and out of the victim's chest cavity, the rescuer would hoist the Victim onto a large wine barrel and alternately roll him back and forth. This action would result in a compression of the victim's chest cavity, forcing air out, and then a release of pressure which would allow the chest to expand resulting in air being drawn in.

1803 – Russian Method

This procedure was extremely difficult for use by Lifeguard Personnel during the summer. But, the concept was to reduce the body's metabolism by freezing the body under a layer of snow and ice. Unfortunately, what the medical authorities did not realize at the time, was that the most critical organ which needed to be frozen in order to accomplish a reduction of the body's metabolism was the brain.

1812 – Trotting Horse Method

Today, many Aquatic Facility Managers balk at having to supply Lifeguard Personnel with Personal Resuscitation Masks, Bloodborne Pathogen Protection Equipment, whistles and lanyards, sunglasses, uniforms, etc. However, in 1812 Lifeguards were equipped with a horse which was tied to the Lifeguard station. When a victim was rescued and removed from the water, the Lifeguard would hoist the victim onto his horse and run horse up and down the beach. This resulted in an alternate compression and relaxation of the chest cavity as a result of the bouncing of the body on the horse. This procedure as banned across the

United States in 1815 as a result of complaints by “Citizens for Clean Beaches”.

1950 – Mouth-to-Mouth Resuscitation

During World War II, this procedure was advocated within the United States military services. In 1950, organizations like the American Red Cross began an aggressive education campaign in order to educate the American public. In the 1960’s this training was expanded by which Lifeguard Personnel were instructed in this procedure by performing mouth-to-mouth resuscitation in the water using Rescue buoys, paddleboards, and boats and canoes as flotation supports while performing this procedure in the water.

1973 – CPR

In 1973, the American Red Cross and the American Heart Association began an aggressive campaign to educate the American public in basic life support CPR procedures. The initial emphasis was on the training of Public Safety and Rescue personnel. Once this training was introduced to that market, it was soon expanded to train the general public. However, it was soon realized that CPR was only effective if it was immediately followed by Advanced Life Support efforts which included definitive care consisting of intubation, drug administration and defibrillation.

1990 – Chain of Survival

In the early 1990’s the American Heart Association developed the concept of the Chain of Survival in order to educate Public Safety and Rescue Personnel, as well as the general public, in the protocols necessary to increase the survivability of respiratory and cardiac arrest patients. The medical authorities finally acknowledged that CPR was not a lifesaving procedure, but rather a life-sustaining procedure designed to be administered until a defibrillator could be obtained. The factors impacting the Chain of Survival include (A) Early Access to the EMS System through an enhanced 9-1-1 System; (B) Early Bystander CPR upon recognition of the patient’s cardiac arrest; (C) Early Defibrillation by First Responder personnel; and (D) Early Advanced Life Support by advanced trained EMS personnel.

1996 – Early Defibrillation

The American Heart Association released their position paper which states that “all emergency personnel should be trained and permitted to operate an appropriately maintained defibrillator if their professional activities require that they respond to persons experiencing cardiac arrest”. Emergency personnel were to include Law Enforcement, Fire, EMS, Lifeguard and Security Personnel, in addition to school teachers, flight attendants, Recreation facility supervisors, etc.

Many advances in resuscitation techniques and procedures have been developed over the years. However, with the availability of the new Automated Electronic Defibrillator (AED) technology, we now have the tools to save more lives than ever before. Therefore, we encourage all First Response agencies to immediately consider the purchase of and implementation of AED’s into their Basic Life Support Systems.

This article was developed to educate as well as to entertain and we hope no one takes any offense to my sick humor. However, these photographs came out of the American Heart Association archives and these procedures were actually advocated within the periods stated.

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