

GLOSSARY OF TERMS

Advanced Life Support (ALS): The knowledge and skills necessary to treat cardiopulmonary arrest. Includes basic life support, as well as techniques for patient monitoring, arrhythmia interpretation, defibrillation, intubation, and administration of intravenous drugs.

Arrhythmia: Abnormal electrical activity of the heart. Ventricular fibrillation is a type of arrhythmia most commonly associated with the onset of sudden cardiac arrest.

Automated External Defibrillator (AED): See defibrillator.

Basic life support (BLS): Emergency care that prevents respiratory or circulatory arrest or insufficiency through recognition and intervention, or supports respiration and/or circulation through the techniques of cardiopulmonary resuscitation, including defibrillation with a portable defibrillator.

Biphasic waveform: A pattern of electrical flow where the current reverses direction in the middle of the waveform, flowing first from one electrode pad, through the heart, to the second electrode pad, and then from the second pad, through the heart to the first. A biphasic waveform requires less energy than the monophasic waveform to achieve superior defibrillation efficacy. Biphasic waveforms can now be considered a standard of care and intervention of choice.

Cardiopulmonary Resuscitation (CPR): A technique used to keep oxygenated blood flowing to vital organs in the event of cardiac arrest until definitive intervention can be instituted. Steps include airway management, mouth-to-mouth or mask ventilation, and external chest compressions.

Chain of Survival: American Heart Association-recommended sequence of action to rescue a person who suffers cardiac arrest. The system includes four steps: early access to an emergency medical system, early CPR, early defibrillation, and early advanced cardiac life support. Any break in this chain can compromise survival.

Community Early Defibrillation Program: A comprehensive community-based defibrillator program managed by community leaders. Community programs entail broad, strategic defibrillator placement throughout a city or county to ensure that defibrillation therapy is readily available in the event of a cardiac emergency. A successful community program includes broad-based training of public and private constituents.

Defibrillation: Delivery of an electrical shock to the heart to treat the arrhythmias most commonly associated with sudden cardiac arrest.

Defibrillator: A device that can deliver electrical current to the heart to treat arrhythmias. Many are portable and have electrocardiographic monitoring capacity.

Manual defibrillators require the operator to read and interpret the ECG tracing, and may require specific steps to program and administer the electric shock.

Automated external defibrillators (AEDs) are portable devices that contain sophisticated electronics to monitor and identify the cardiac rhythm. The AED will only permit the operator to deliver the shock if ventricular fibrillation or certain ventricular tachycardias are detected.

Electrocardiogram (EKG/ECG): A graphical representation of the electrical impulses produced by the heart.

Emergency Medical Services (EMS): The standing organization of a community to provide emergency medical care to its citizens. May include: notification system (e.g., 911); paramedics; emergency medical technicians; and fire, police, or ambulance personnel.

Emergency Medical Technician (EMT): A professional who typically receives about 110 hours of training in basic emergency medical care. Provides basic life support with techniques including CPR and defibrillation with an automated external defibrillator (AED).

External defibrillation: Defibrillation current delivered to the heart by means of electrodes attached to the chest.

First-responder laws: Regulations permitting people with state-approved training to use defibrillators to treat sudden cardiac arrest.

Good Samaritan laws: Laws granting limited liability protection to persons who, in good faith, give first aid or emergency assistance at the scene of an accident. All 50 states have enacted Good Samaritan laws to protect citizens who provide emergency medical assistance to sudden cardiac arrest victims with the use of a defibrillator.

Heart attack: Death of a portion of the heart muscle caused by a sudden decrease in blood supply to that area. Also known as myocardial infarction or MI. This condition is not the same as but may lead to sudden cardiac arrest.

Implantable cardioverter-defibrillator (ICD): Small, surgically implanted defibrillator. Weighing less than four ounces, these devices are able to sense abnormal heart rhythms and, within seconds of detecting fibrillation, deliver an electric shock to the heart.

Joule: A measurement of energy equal to the work done when a current of 1 ampere is passed through the resistance of 1 ohm for 1 second. The electric energy delivered by defibrillators is measured in Joules.

Monophasic waveform: Pattern of electrical flow where the current, throughout the pulse, flows in one direction, from one electrode pad, through the heart to the other electrode pad.

Over-the-counter (OTC) Drug or Device: A medical device or drug for which a prescription from a physician is not required.

Paramedic: A professional trained to evaluate and provide treatment for a wide variety of medical emergencies. Initially receives 800-2,000 hours of training. Qualified to treat sudden cardiac arrest with defibrillation and advanced cardiac life support.

Public access defibrillation: Public access to timely defibrillation through the widespread deployment of defibrillators in public places.

SMART Biphasic: A low-energy biphasic waveform (fixed at 150 Joules) pioneered by Heartstream, Inc. in 1992 to be used in a portable defibrillator.

Sudden cardiac arrest (SCA): Precipitous loss of effective pulse and blood pressure usually due to a cardiac arrhythmia, primarily ventricular fibrillation.

Sudden cardiac death (SCD): Death resulting from an abrupt loss of heart function (cardiac arrest).

Ventricular fibrillation: A chaotic arrhythmia that causes the heart to quiver rather than contract in a coordinated fashion. No effective pulse or blood pressure is generated, unconsciousness is nearly immediate, and death follows within minutes if the arrhythmia is not halted.

Ventricular tachycardia: A condition in which an area of the lower heart muscle develops pacemaker activity, resulting in a very fast, abnormal heartbeat often leading to sudden cardiac arrest.

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