

Advanced Cardiac Life Support

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Advanced Cardiac Life Support (ACLS) is comprised of clinical interventions for the urgent treatment of cardiac arrest, respiratory arrest, and other life threatening medical emergencies, as well as the knowledge and skills to execute these interventions.

ACLS is an extension of Basic Life Support (BLS), so medical professionals must carry a valid BLS certification before enlisting in ACLS training. In BLS, the AED (Automatic Defibrillation Device) decides when and how to shock a patient. In ACLS the team leader makes those decisions, based on rhythms analyzed and displayed on the monitor of the manual defibrillator as well as the status of the patient's vital signs. CPR may begin immediately if indicated by the algorithm (guidelines) of ACLS. The next steps in ACLS are insertion of intravenous (IV) lines and placement of various airway devices to oxygenate the patient. Commonly used ACLS drugs, epinephrine, atropine and amiodarone are then administered depending on the patient's heart rhythm (tachycardias, fibrillation, heart blocks, etc). The team must maintain clear closed-loop communication during the "code" to ensure that the leader is aware what interventions have been completed and whether or not they are "correct" interventions. Although this is an intense time, it is important to be respectful to other members of the team and work within the scope of your ability during the code. If you are unable to manage a particular role, you should let the team leader know so someone else may be assigned. During the code, the ACLS personnel should quickly search for possible causes of cardiac arrest (e.g., heart

attack, drug overdose, trauma, hypovolemia, hypoxia, etc). Based on the diagnosis, more specific treatments may be given. These treatments may be as simple as administration of oxygen or IV fluid bolus, or medical such as IV injection of an antidote for drug overdose, or surgical such as insertion of a chest tube for those with tension pneumothorax. While the above mentioned ACLS steps are being carried out, it is crucial to continue chest compression as indicated, with minimal interruptions. This point is emphasized repeatedly in the new ACLS guidelines and the belief that this is most important to maintain survival of these patients, above even medication administration. ACLS continues until the patient has a stable rhythm and can just be observed, or when the heart or brain of a person in arrest cannot be restarted.

ACLS training provides me with additional, specifically-targeted knowledge beyond BLS, to deal with medical emergencies related to the heart and respiratory arrest. This is an area of medical emergencies anticipated to increase with the aging population. It is important to continue to educate ourselves to be better prepared for these medical emergencies as they present themselves during our care of patients in hospitals and other medical facilities, as well as in our communities.