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## **American Heart Association announces updated emergency care guidelines**

DALLAS, Nov. 28 – New emergency care guidelines include dramatic changes to cardiopulmonary resuscitation (CPR) and emphasis on chest compressions, according to authors of the *2005 American Heart Association Guidelines for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care*.

The guidelines were published online today in *Circulation: Journal of the American Heart Association*. They provide recommendations for how lay rescuers and emergency healthcare providers should resuscitate victims of cardiovascular emergencies. Topics include CPR, the use of automated external defibrillators (AEDs) and recommendations for advanced cardiovascular life support (ACLS) and pediatric advanced life support (PALS).

The 2005 guidelines emphasize that high-quality CPR, particularly effective chest compressions, contributes significantly to the successful resuscitation of cardiac arrest patients. Studies show that effective chest compressions create more blood flow through the heart to the rest of the body, buying a few minutes until defibrillation can be attempted or the heart can pump blood on its own. The guidelines recommend that rescuers minimize interruptions to chest compressions and suggest that rescuers “push hard and push fast” when giving chest compressions.

“The 2005 guidelines take a ‘back to basics’ approach to resuscitation,” said Robert Hickey, M.D., chair of the American Heart Association’s Emergency Cardiovascular Care programs. “Since the 2000 guidelines, research has strengthened our emphasis on effective CPR as a critically important step in helping save lives. CPR is easy to learn and do, and the association believes the new guidelines will contribute to more people doing CPR effectively.”

The most significant change to CPR is to the ratio of chest compressions to rescue breaths – from 15 compressions for every two rescue breaths in the 2000 guidelines to 30 compressions for every two rescue breaths in the 2005 guidelines. The 30-to-two ratio is the same for CPR that a single lay rescuer provides to adults, children and infants (excluding newborns). The change resulted from studies showing that blood circulation increases with each chest compression in a series and must be built back up after interruptions. The only exception to the new ratio is when

two healthcare providers give CPR to a child or infant (except newborns), in which case they should provide 15 compressions for every two rescue breaths.

Another guidelines change emphasizing the importance of CPR is the sequence of rhythm analysis and CPR when using AEDs. Previously, when AED pads were applied to the chest, the device analyzed the heart rhythm, delivered a shock if necessary, and analyzed the heart rhythm again to determine whether the shock successfully stopped the abnormal rhythm. The cycle of analysis, shock and re-analysis could be repeated three times before CPR was recommended, resulting in delays of 37 seconds or more. Now, after one shock, the new guidelines recommend that rescuers provide about two minutes of CPR, beginning with chest compressions, before activating the AED to re-analyze the heart rhythm and attempt another shock. Studies have shown that the first AED shock stops the abnormal cardiac arrest rhythm more than 85 percent of the time and that a brief period of chest compressions between shocks can deliver oxygen to the heart, increasing the likelihood of successful defibrillation. The guidelines also recommend that healthcare providers minimize interruptions to chest compressions by doing heart rhythm checks, inserting airway devices, and administering of drugs without delaying CPR.

The new recommendations continue to encourage greater implementation of AED programs in public locations like airports, casinos, sports facilities and businesses. The 2005 guidelines reflect results of the Public Access Defibrillation trial, which reinforced the importance of planned and practiced response to cardiac emergencies by lay rescuers.

The new guidelines recommend that 911 dispatchers be trained to provide CPR instructions by phone and help callers correctly identify cardiac arrest victims. Dispatchers may walk rescuers through compressions-only CPR for most adult victims of cardiac arrest; however, instructions to do compressions and rescue breaths will be given for infants and children or adult victims of asphyxia, caused by near-drowning or other non-cardiac causes. Dispatchers also should be trained to recognize the symptoms of heart attack and other Acute Coronary Syndromes, and advise such patients to chew an aspirin while awaiting EMS.

To increase successful resuscitation, new guidelines advise EMS systems to evaluate their current protocols, shorten the response time for cardiac arrest patients, then document the impact of such changes on the number of lives saved.

The guidelines are based on the Consensus on Science and Treatment Recommendations (CoSTR), a document developed by the International Liaison Committee on Resuscitation. This group includes the American Heart Association and leading international resuscitation councils. The review of resuscitation literature reflected in CoSTR is the largest ever published. It took more than 36 months and includes input from 380 international experts. CoSTR serves as the scientific basis for many countries' resuscitation treatment guidelines.

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