Training, Lay Rescuers Key to Better CPR Results

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Bystander-initiated cardiopulmonary resuscitation saves lives but occurs far too infrequently and is often provided inadequately, according to a new scientific statement from the American Heart Association.

The statement calls for a concerted effort by health care providers, policy makers, and community leaders to provide education and training to improve the rate and quality of bystander CPR.

"CPR is an inexpensive and readily available technique that can save lives. Therefore, the number of people trained in CPR must increase, and the quality of CPR provided must improve," wrote Dr. Benjamin S. Abella, lead author of the statement, and his colleagues (Circulation 2008;117;704-9).

Although it has been shown that high-quality CPR provided by bystanders can improve the rates of survival to hospital discharge, in many communities only 15%-30% of victims receive bystander CPR before emergency medical services personnel arrive. With arrival times often occurring after 7-8 minutes, and a drop in survival rates of 7%-10% for each minute without CPR, the lack of bystander-initiated CPR can have a dramatic impact on patient outcome.

"In communities where widespread CPR training has been provided, survival rates from witnessed sudden cardiac arrest associated with [ventricular fibrillation] have been reportedly as high as 49% to 74% … unfortunately, on average, about 6% of out-of-hospital sudden cardiac arrest victims survive to hospital discharge in the United States," Dr. Abella, clinical research director for the Center for Resuscitation Science at the University of Pennsylvania, Philadelphia, said in a press statement.

Study findings have shown that even when CPR by a bystander and CPR by trained health care professionals are provided, they are too often provided inadequately, with chest compressions that are too shallow or interrupted too often, and with excessive rates of rescue breathing. The authors provide a number of recommendations to improve the rate and quality of bystander CPR, including:

► **Broadening CPR training.** New approaches in training are needed to reach a larger public audience. A 22-minute, self-instructional program available through the AHA is an example of a tool that can be used outside the classroom. The statement also calls for community and corporate programs to encourage CPR education, and suggests that training be provided in high schools as a prerequisite for graduation and in hospitals for families of patients at risk for sudden cardiac arrest.

► **Addressing common barriers to lay rescuer action.** Bystanders are often reluctant to perform CPR out of fear of disease transmission, fear of legal liability, or as a result of the complexity of guidelines and instructional materials (which hampers both learning and delivery of bystander CPR). Thus, in addition to education about the value of quick action for saving lives, the public should be better informed about the very low risk of disease transmission (there have been no reported cases of HIV transmission or hepatitis via CPR, for example) and the availability of mouth-to-mouth barrier devices and gloves, which should be mandated wherever an automatic external defibrillator (AED) is stationed. Information about Good Samaritan laws that protect bystanders from liability should be included in CPR training and posted prominently near AED stations.

► **Improving lay rescuer and emergency medical services programs.** These programs can be upgraded by providing a process for continuous quality improvement. Reviews of resuscitation efforts and quality of CPR provided by bystanders and dispatchers are needed, as is monitoring (by health care systems that provide CPR services) of the quality of CPR provided during resuscitation efforts.

The AHA also suggests Internet-based CPR education and certification programs be developed, and that research be done to identify the best educational methods for delivering CPR training, the optimal target populations for CPR education, the value of dispatch-assisted CPR in a variety of communities, and the public perceptions that serve as barriers to CPR training and administration. ■

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