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A Non-Profit Cooperative to Improve Health Care and Reduce Members' Costs

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CPR Performance by Emergency First Responders

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Introduction:

In a recent state study it was found that first responders – police, fire and EMS – initiated Cardiopulmonary Resuscitation (CPR) in 83% of prehospital cardiac arrests. American Heart Association (AHA) 2005 Emergency Cardiac Care guidelines focus on the importance of early high quality CPR for successful resuscitation. Many studies show early CPR is the single most important link in the Chain of Survival. This study will measure the ability of first responders to meet AHA CPR time standards.

Hypothesis:

CPR performed by first responders often does not meet AHA timing standards.

Methods:

This prospective study evaluated one-rescuer Healthcare Provider (HCP) Adult CPR. AHA instructors used a standardized skill sheet of AHA established criteria to document performance on a manikin. The study group consisted of 651 practicing first responders – police, fire, and EMS with a current HCP CPR card. Three critical tasks were timed, the initial breathing check, initial pulse check, and delivery of 30 compressions.

Results:

Only 33.33% (217/651) demonstrated correct timing in all 3 critical tasks. One timing error occurred with 24.58% (160/651), two errors with 22.27% (145/651), and errors occurred in all three tasks with 19.82% (129/651).

First responders demonstrated adequate initial breathing checks (5 to 10 seconds) 58.68% of the time (382/651). Average time was only 4.87 seconds, with 95.17% of the incorrect checks performed too fast.

First responders demonstrated adequate initial pulse checks (5 to 10 seconds) 58.22% of the time (379/651). Average time was only 4.89 seconds, with 94.85% of the incorrect checks performed too fast.

First responders delivered 30 chest compressions at the correct rate (15 to 23 seconds) 54.53% of the time (355/651). The average time was 19.67 seconds. 57.43% of the incorrect compressions were delivered too slowly and 42.57% too fast.

Conclusion & Recommendations:

This study showed that despite HCP CPR certification, there is still a high incidence of critical CPR performance errors by first responders. Early high quality CPR is an essential component of successful resuscitation. Emergency first responders who do not perform CPR regularly must practice CPR frequently. Further research is needed to determine what method is most efficacious in helping first responders maintain their CPR proficiency.