Survival unchanged five months after implementing the 2005 AHA CPR and ECC guidelines for out-of-hospital cardiac arrest.

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Clinical Studies in Resuscitation

Abstract 2686: Survival Unchanged Five Months After Implementing The 2005 AHA CPR And ECC Guidelines For Out-of-hospital Cardiac Arrest

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Introduction: To improve survival from out of hospital cardiac arrest (OHCA), the American Heart Association released guidelines in 2005. We examined the effect of these guidelines on survival in the Resuscitation Outcomes Consortium (ROC) Epistry - Cardiac Arrest. We hypothesized that survival would increase after guideline implementation.
Methods: 174 EMS agencies from 8 of 10 ROC sites were surveyed to determine 2005 AHA guideline implementation, or crossover, date. Two sites with 2005 compatible treatment algorithms prior to guideline release were not included. Patients with OHCA secondary to a non cardiac cause, EMS witnessed events, patients <18 years old, and patients with do-not-resuscitate orders were excluded. A linear mixed effects model was applied for survival controlling for time and agency. The "crossover" date was added to the model to determine the effect of the 2005 guidelines.

Results: Of 174 agencies, 83 contributed cases to both cohorts during the 18 month period between 2005/12/01 and 2007/05/31. Of 7403 cases, 4897 occurred during the 13 month (median) interval before crossover and 2506 occurred in the 5 month (median) interval after crossover. The overall survival rate was 5.9%. Our model estimated an overall increase in survival over time (monthly OR 1.02, 95% CI 0.99, 1.04, p=0.23), a decrease in survival at crossover (OR 0.92, 95% CI 0.66, 1.26, p=0.59), and a further increase in survival over time after crossover (monthly OR 1.005, 95% CI 0.96, 1.05, p=0.84).

Conclusion: This study found a trend towards increased survival over time and no statistically significant effect of the 2005 guidelines early after implementation. This observed increase in survival over time may be attributed to the Hawthorne effect or participation in ROC or improved quality assurance. A delay in knowledge and skill acquisition amongst EMS providers and the need to rechoreograph their cardiac arrest treatment may explain why no significant increase in survival was observed after implementation. EMS providers may require more time to gain proficiency in the guideline changes before the full potential of the guidelines can be realized. Further longitudinal study is needed to determine the full impact of the guidelines on survival.