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Use of Automated External Defibrillators by Police Officers for Treatment of Out-of-Hospital Cardiac Arrest ...

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Abstract

Objective: To determine the feasibility of police officers providing defibrillation with automated external defibrillators (AEDs) and to assess the effectiveness of this strategy in reducing time to defibrillation of victims of out-of-hospital sudden cardiac arrest.

Methods: This was a prospective, interventional cohort study with historical controls conducted in 7 suburban communities in which police usually arrived at the scene of medical emergencies before EMS personnel. All adult patients who suffered cardiac arrest before EMS arrival and on whom EMS personnel attempted resuscitation were enrolled. Police officers who were trained to use and equipped with AEDs during the intervention phase were dispatched simultaneously with EMS to medical emergencies. Police were instructed to use the AED immediately on determination of pulselessness.

Outcome measures were the difference between control and intervention phases in interval from the time the call was received at dispatch to the time of first defibrillation and in rate of survival to hospital discharge for patients initially in ventricular fibrillation.

Results: EMS personnel attempted 183 resuscitations in the control phase and 283 during the intervention; of these, 80 (44%) and 127 (45%), respectively, involved patients with initial ventricular fibrillation rhythms. Mean time to defibrillation decreased from 11.8 ± 4.7 minutes in the control phase to 8.7 ± 3.7 minutes in the intervention phase ($P < .0001$). Survival to hospital discharge of patients in ventricular fibrillation did not differ between phases (6% control versus 14% intervention, $P = .1$). When police arrived before EMS personnel, shock administered by police compared with shock administered by EMS was associated with improved survival (26% [12/46] versus 3% [1/29], $P = .01$). Logistic regression analysis revealed AED use was an independent predictor of survival to hospital discharge.

Conclusion: In 7 suburban communities, police use of AEDs decreased time to defibrillation and was an independent predictor of survival to hospital discharge.

[Mosesso VN Jr, Davis EA, Auble TE, Paris PM, Yealy DM: Use of automated external defibrillators by police officers for treatment of out-of-hospital cardiac arrest. *Ann Emerg Med* August 1998; 32:200-207.]



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