

Clinical Summary

60% of out-of-hospital cardiac arrests (OHCA) occurring in a public setting are shockable—making Public Access Defibrillation (PAD) more important than ever.

Introduction

This study published in the prestigious American Heart Association Journal *Circulation* is good news to adopters of workplace and community AED programs. Knowing that over half of the time an AED could be used to deliver a shock in a witnessed cardiac arrest is powerful information.

Clinical Summary

Pollack R, Brown S, Rea T, et al. Impact of bystander automated external defibrillator use on survival and functional outcomes in shockable observed public cardiac arrests. *Circulation*. 2018;137:00–00. DOI: 10.1161/CIRCULATIONAHA.117.030700

Study Objectives

- To determine the association of bystander automated external defibrillator (AED) use with survival and functional outcomes in shockable witnessed OHCA in the public setting

Methods

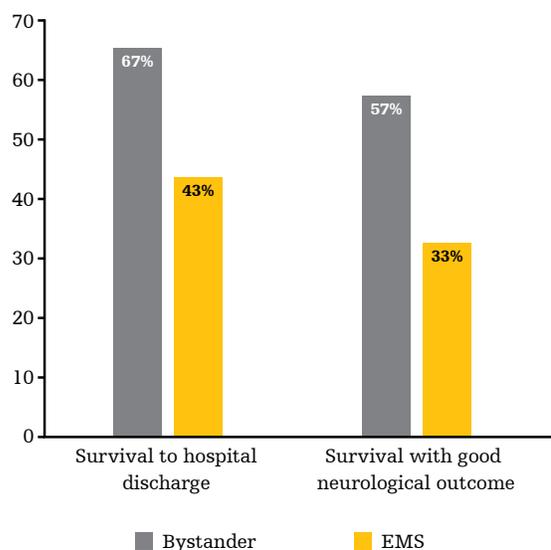
- Prospectively collected detailed information on all cardiac arrests at nine regional emergency medical services (EMS) agencies between 2011-2015. Shock delivered by bystander-applied AEDs were compared to initial defibrillation by EMS

Primary Outcome

- Hospital discharge with normal or near-normal (favorable) functional status defined as a modified Rankin Score* ≤ 2
- Survival to hospital discharge was the secondary outcome measure

Results

- 4115 observed public OHCA were analyzed
- 8.3% were witnessed OHCA in a public setting
- 60.8% had a shockable initial heart rhythm
- Bystander shock using an AED occurred in 18.8% of the shockable arrests
- Benefit of bystander AED use was strongest at industrial locations and places of recreation
- Benefit of bystander AED use increases as the arrival of EMS is longer (e.g. 8-12 minutes)



*Modified Rankin Score (mRS)

The mRS uses a scoring system from 0 to 6 to quantify functional outcome (0=no symptoms; 1=no significant disability; 2=slight disability; 3=moderate disability, requiring some help but able to walk without assistance; 4=moderately severe disability, unable to walk or attend to bodily needs without assistance; 5=severe disability; 6=death). An mRS ≤ 2 is a validated indicator of favorable functional outcome.

(Banks J, Marotta C. Outcomes validity and reliability of the modified Rankin scale: implications for stroke clinical trials: a literature review and synthesis. *Stroke*. 2007;38:1091–1096. doi: 10.1161/01.STR.0000258355.23810.c6).

Conclusions

- Bystander AED use before EMS arrival in shockable witnessed OHCA in a public setting was associated with better survival and functional (neurological) outcomes.
- Continued emphasis on PAD programs may further improve outcomes of OHCA.

Physio-Control Discussion Points

- This study validates our long-held position that increasing the availability and use of AEDs in public locations can improve survival from OHCA.
- As the study highlights, the effective allocation of AEDs and training may benefit from an emphasis on locations where the response time for emergency medical response is longer.
- LIFEPAK[®] and HeartSine[®] samaritan PAD AEDs are specifically designed to be easy-to-use by the public access rescuer.

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For further information, please contact Physio-Control at 800.442.1142 (U.S.), 800.668.8323 (Canada) or visit our website at www.physio-control.com

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