

## 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

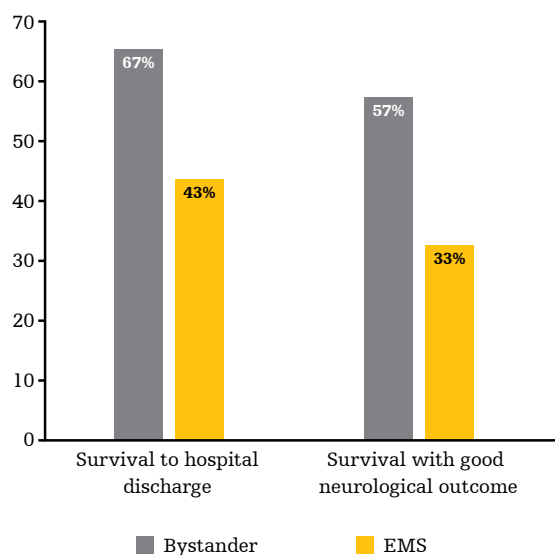
- Prospectively collected detailed information on all cardiac arrests at nine regional emergency medical services (EMS) agencies between 2011-2015. Shock delivered by bystander-applied AEDs were compared to initial defibrillation by EMS

### Primary Outcome

- Hospital discharge with normal or near-normal (favorable) functional status defined as a modified Rankin Score\*  $\leq 2$
- 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  $\leq 2$  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

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- 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](http://www.physio-control.com)**

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