

Available online at www.sciencedirect.com

Resuscitation

journal homepage: www.elsevier.com/locate/resuscitation

Letter to the Editor

DAE Responder: The Emilia Romagna app for a regional “community saving lives” system



To the Editor,

Out-of-hospital cardiac arrest (OHCA) is the third leading cause of death in industrialized countries.¹ In Italy OHCA has an incidence of 116 per 100,000 population per year: bystander CPR is initiated in 29,7% only of instances; overall, return of spontaneous circulation (ROSC) occurs in 16,6% with a poor 6.4% survival to hospital discharge.² Outcome could improve up to four-folds³ if basic life support (BLS) with defibrillation would be provided timely by bystanders, before emergency medical service (EMS) arrival.

Public access defibrillation (PAD) programs, including EMS activation and bystander BLS with automated external defibrillators (AED), have been widely implemented. Recently, softwares and apps for mobile phones have been developed to support PAD programs.⁴ These technologies can help the dispatch center to confirm OHCA diagnosis, localize the site and notify trained volunteers in the victim's surroundings to offer assistance as first responder (FR). In the Italian region Emilia Romagna, the Regional Healthcare Service, in collaboration with the Regional EMS, has activated an app named “DAE Responder”, which uses a composed approach based on the AEDs regional registry, the EMS' cartographic system, and data from the 118 dispatch center.

The App (www.118er.it/dae) has been developed for Android and iOS (Fig. 1) and released on October 1st, 2017. It is able to track and monitor the presence and functionality of registered AEDs alerting for

anomalies. Most importantly, the App alerts its users when a OHCA occurs and is recognized by a dispatch center in the Region. The adhesion to the program is on a voluntary basis and does not imply any obligation for the users. BLS formal training is not compulsory: if the dispatch center engages an untrained responder, he/she can simply retrieve the nearest AED or receive pre-arrival instructions with chest compression-only procedure. In other words, anyone can be part of the DAE Responder network by simply registering in the App. In the first two years, 7.130 users (1.716 in Bologna city) registered in the system while 4.771 AEDs (726 AED in Bologna) have been mapped. During the same period, 2024 events occurred and in 26% at least one user accepted to intervene. FRs arrived before EMS vehicles in 19% of cases. In approximately 25% of calls, the volunteers were within 1 km from the victim and were able to intervene in approximately 2 min. Further analysis still has to be made in order to better understand how the bystander engagement affects OHCA survival rate. On July 30th, 2019, the Italian Parliament approved a law supporting “Systems Saving Lives” programs and DAE Responder was proposed by experts as a model to be used nationwide.⁵ DAE Responder is the first Regional app developed to engage the community in an integrated system with the EMS dispatch center; it is working successfully in one Region and could become the standard reference for the other Italian Regions.

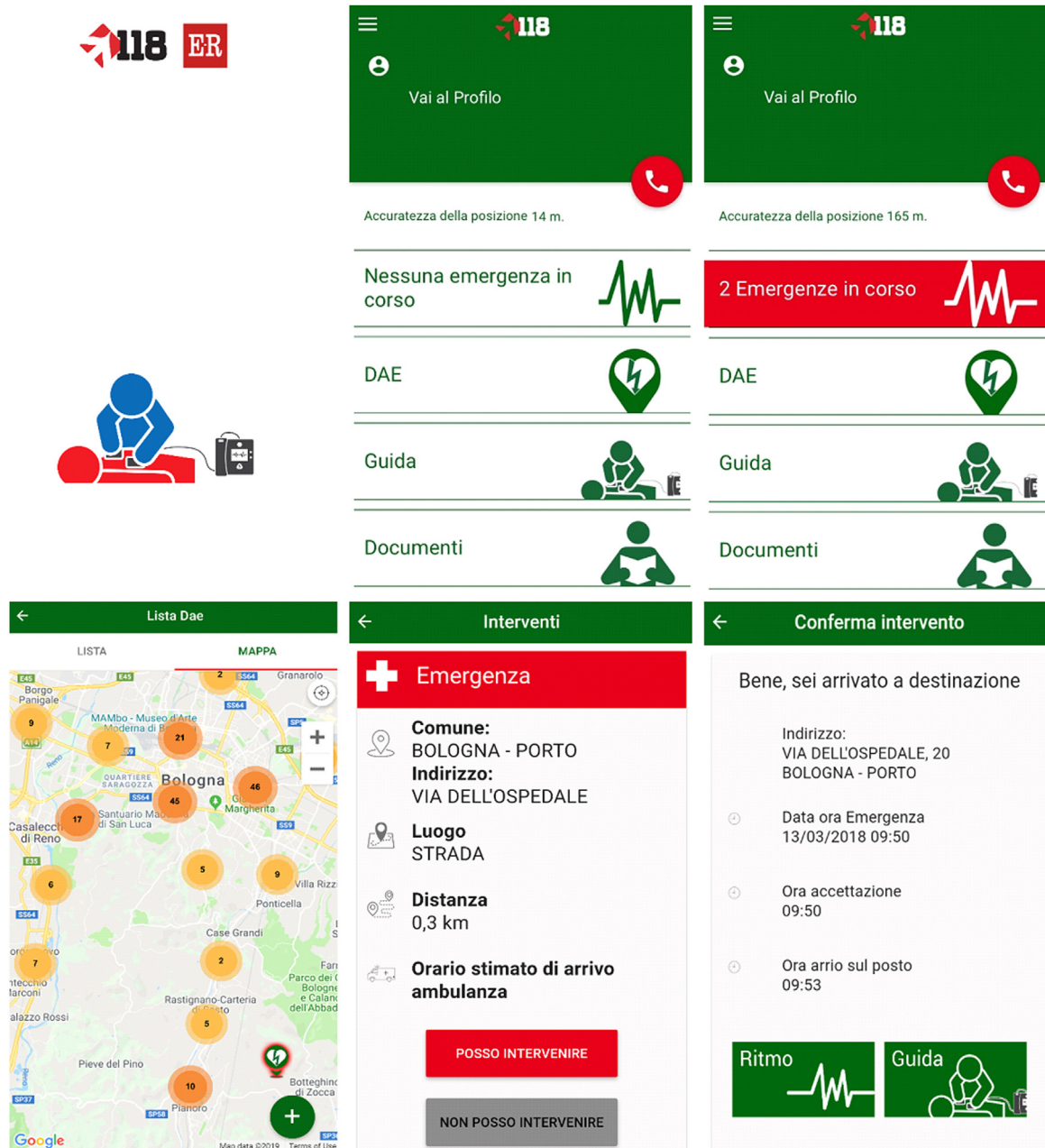


Fig. 1 – DAE RespondER.

Conflict of interest

No conflict of interest.

REFERENCES

1. Berdowski J, Berg RA, Tijssen JG, Koster RW. Global incidences of out-of-hospital cardiac arrest and survival rates: systematic review of 67 prospective studies. *Resuscitation* 2010;81:1479–87.
2. Gräsner JT, Lefering R, Koster RW, et al. EuReCa ONE-27 Nations, ONE Europe, ONE Registry: a prospective one month analysis of out-of-hospital cardiac arrest outcomes in 27 countries in Europe. *Resuscitation* 2016;105:188–95.
3. Monsieurs KG, Nolan JP, Bossaert LL, et al. European resuscitation council guidelines for resuscitation 2015: section 1. Executive summary. *Resuscitation* 2015;95:1–80.
4. Ringh M, Rosenqvist M, Hollenberg J, et al. Mobile-phone dispatch of laypersons for CPR in out-of-hospital cardiac arrest. *N Engl J Med* 2015;372:2316–25.
5. Scapigliati A, Ristagno G, Grieco NB, et al. A system to save lives in Italy: a cultural challenge for community and government. *Resuscitation* 2019;142:25–7.

Donatella Del Giudice

EMS 118 Regional Programme, Ospedale Maggiore, Bologna, Italy

Federico Semeraro*

Department of Anaesthesia, Intensive Care and Emergency Medical Services, Ospedale Maggiore, Bologna, Italy

Giuseppe Ristagno

Department of Pathophysiology and Transplantation, University of Milan, Milan, Italy

Cosimo Picoco

Fiorella Cordenons

Oscar Dell'Arciprete

Fabio Mora

EMS 118 Dispatch Center, Ospedale Maggiore, Bologna, Italy

Andrea Scapigliati

Fondazione Policlinico Universitario A. Gemelli, IRCCS, Institute of Anaesthesia and Intensive Care, Catholic University of the Sacred Heart, Rome, Italy

Giovanni Gordini

Department of Emergency, Ospedale Maggiore, Bologna, Italy

* Corresponding author.

E-mail address: F.Semeraro@118er.it (F. Semeraro).

Received 30 September 2019

<http://dx.doi.org/10.1016/j.resuscitation.2019.10.002>

© 2019 Elsevier B.V. All rights reserved.