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Letter to the Editor

Mobile phone systems to alert citizens as first responders and to locate automated external defibrillators: A European survey



To the Editor,

Each year in Europe, cardiopulmonary resuscitation (CPR) is attempted in 56 out-of-hospital cardiac arrest (OHCA) patients per 100,000 population, with only 8% surviving to hospital discharge.¹ One of the leading causes of this low survival rate is the delay between OHCA and the initiation of CPR with the use of an automated external defibrillator (AED). Despite extensive efforts in training community members to deliver early CPR and defibrillation, bystander CPR rates remain low, and the majority of trained citizens never have the opportunity to perform CPR and to use an AED. Nowadays, mobile phone technology offers the possibility to locate and alert citizens as first responders to a nearby OHCA. The development of these systems can increase CPR rates performed before ambulance arrival² and improve survival to hospital discharge.³ Moreover, apps and websites were developed to report and locate AEDs. Recently, the ESCAPE-NET network explored first responder treatments after

OHCA through a survey across 29 countries in Europe and a considerable variation between countries was found.⁴

To obtain a picture of available systems to alert citizens as first responders and to locate the nearest AED across Europe, we conducted an online survey from February 6th, 2020 to February 16th, 2020. The survey, composed of nine questions about the availability of these systems, was sent by email to 14,624 members of the European Resuscitation Council (ERC) and ERC Research NET.

We received 805 valid answers from 32 European countries, yielding a response rate of 5.5%. We identified 34 different systems to alert citizens as first responders. More than half of the countries (62%) activated at least one system in one region. Almost every system (94%) required citizens to be trained in basic life support (BLS) to become part of the first responder network. Systems to map and locate the nearest AED were available in 25 European

Table 1 – Summary of systems to alert first responders and locate automated external defibrillators (AED) across Europe (ordered by country).

Country	System technology	System name	Minimal training required	Map of AEDs
Austria	App	Lebensretter	BLS	Lebensretter ^a
	App	Local Response Österr. Rotes Kreuz	BLS	Website: www.144.at/defi ^b
Belgium	App, text message	Evapp	BLS	Staying alive ^b
	App	Reanim	BLS	Reanim ^b EVapp ^a EHBO – Rode Kruis ^a
Bosnia and Herzegovina	No systems	–	–	No
Croatia	App	Staying alive (only in one region)	BLS	Staying alive ^a

(continued on next page)

Table 1 (continued)

Country	System technology	System name	Minimal training required	Map of AEDs
Cyprus	No systems	–	–	No
Czech Republic	App	O2 SOS	BLS	Záchranka ^b
Denmark	App	Hjerteløber (Hearrunner)	Recommended BLS	Hjertestarter ^b
Finland	App	FirstAED	BLS	Hjerteløber ^a
France	No systems	–	–	No
	App	Sauvlife	No	Sauvlife ^b
	App	Stayingalive	BLS	Stayingalive ^b
	App	AFPR–Premiers Répondants	BLS	AFPR–Premiers Répondants ^a
Germany	App	Mobile Retter (Mobile Rescuer)	BLS	Lebensretter App ^a
	App	Lebensretter App	BLS	LandlRetter ^a
	App	Meine Stadt Rettet	BLS	Region der Lebensretter FirstAED ^a
	App	Region der Lebensretter FirstAED	Trained medical staff	Meine Stadt Rettet ^a
	App	Corhelper	BLS	Corhelper ^a
	App	LandlRetter	BLS	MV SCHOCKT ^a
	App	KATRETTER	BLS	Defikataster ^b
			BLS	Defi-Finder ^a
Greece	No systems	–	–	Staying alive ^a Website: http://kidssavelives.gr/map-wide/ ^b
Hungary	App	Szivcity Heart City	–	Szivcity Heart City ^b Website “ http://mnsza.hu/ ” ^b
Iceland	No systems	–	–	No
Ireland	Text message system	–	BLS	Website: http://cfr.i.e./maps/
Italy	App	DAE RespondER SafetyGO	No BLS	DAEDove ^b DAE RespondER ^a AEDs Map AREU Lombardia ^a
Kosovo	No systems	–	–	No
Lithuania	App	Stan AED Alert	BLS	Stan AED Alert ^b
Luxembourg	Pager	–	Firefighter or emergency medicine technician	Website: www.reagis.lu/ ^b
Malta	No systems	–	–	AED Malta ^b
Netherlands	App and text message	HartslagNu (HeartbeatNow)	BLS	EHBO ^b HartslagNu ^b
Norway	No systems	–	–	Hjelp 113 ^b
Poland	No systems	–	–	Ratuj z sercem – mapa AED Ratuj życie Staying alive DAE Portugal ^b
Portugal	No systems	–	–	DAE Portugal ^b
Romania	App	Exista un erou	BLS	Exista un erou ^a
Russia	App	“Спасатель рядом” (Rescuer Nearby)	BLS	No
Serbia	No systems	–	–	Website: http://app.aedplus.rs/ ^b
Slovenia	App	IHELP	?	https://aed-baza.si/ ^b
	Text message	–	BLS	iHELP ^b www.aed.si/ ^a
Spain	App	Cardiocity112	BLS	Cardiocity112 ^a DEACAT ^a Ayuda a la Parada Cardiaca ^a Ariadna ^a Desfibriladores Salvavidas ^b

Table 1 (continued)

Country	System technology	System name	Minimal training required	Map of AEDs
Sweden	App and text message	SMSLivräddare (Heartrunner)	BLS	SMSLivräddare ^a Website: http://hjärtstartarregistret.se/ ^b
Switzerland	App	Fondazione Ticino Cuore	BLS	Fondazione Ticino Cuore ^a
	App	1st Responder Kanton Bern	BLS	1st Responder Kanton Bern ^a
UK	App	CH Responder	BLS	GoodSAM ^b British Heart Foundation “The Circuit” ^b
		GoodSam	BLS	
Ukraine	No systems	–	–	No

BLS = basic life support, AED = automated external defibrillator.
^a Covers some regions.
^b Covers the entire country.

countries (78%). Other details of reported technologies are available in Table 1.

In the context of the International Liaison Committee on Resuscitation (ILCOR) Continuous Evidence Evaluation process, the Education Implementation and Teams (EIT) Task Force has recently systematically reviewed the evidence on first responders engaged by technology.⁵ The 2020 treatment recommendation proposes that individuals registered in a first responders network and near to a suspected OHCA should be notified by a smartphone app or a text message to initiate CPR before ambulance arrival (strong recommendation, very low-certainty evidence).

The results of this survey are consistent with previous reports. We found a large variability across Europe regarding the availability of these systems and their implementation. It would be appropriate to pursue a uniform standard for these systems. Moreover, a standardized approach similar to the Utstein Style form is highly encouraged to obtain a uniform reporting of these systems. In the next ERC 2020 guidelines, a chapter entitled System Saving Lives will cover these issues extensively.

Conflict of interest

None declared.

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Received 18 March 2020

Accepted 21 March 2020

<http://dx.doi.org/10.1016/j.resuscitation.2020.03.009>

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