

Public access to the “Restart a Heart – Save a Life” early defibrillation programme in Croatia

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ABSTRACT

In collaboration with the Croatian Institute of Emergency Medicine and the Croatian Institute of Public Health, the Ministry of Health launched the National Public Access to Early Defibrillation Programme entitled “Restart a Heart – Save a Life” in 2013. The main implementing activities are public health education about early defibrillation in the case of sudden cardiac arrest, enlarging the accessibility of the automated external defibrillator (AED) and training laymen to perform cardiopulmonary resuscitation and defibrillation by use of AED. Forty-one training courses were organised and 422 lay people trained in 2013. In addition, 197 AEDs were obtained and fitted in settings where people are expected to assemble permanently or occasionally. The “Restart a Heart – Save a Life” programme ensures a broad platform for joint action of public administration authorities, governmental and nongovernmental agencies, and all organisations and individuals interested in reaching the goal of increasing the rate of survival of people suffering from a sudden cardiac arrest.

Key words: national Public Access to Early Defibrillation Program, sudden cardiac arrest, early defibrillation, automated external defibrillator

Introduction

Cardiovascular diseases are known to be the leading cause of death in industrialised countries worldwide, as well as in Croatia. (1,2) According to estimates reported from international studies, in Croatia 9,000 people die from sudden cardiac death per year or one person per hour. (3) In Europe, 400,000 people suffer a sudden cardiac arrest in outpatient settings, with a survival rate of <10%. (4) Although no survival data are available for Croatia, the country certainly falls within the world statistics. Although being one of the leading causes of mortality, sudden cardiac death still poses a major yet under-recognised public health problem calling for

raised awareness both in the world and in Croatia. Sudden cardiac death is an unexpected death due to instantaneous loss of cardiac function and consequential arrest of blood supply to the brain and other organs. The direct cause of such sudden cardiac arrest is mostly a malignant heart rate impairment called ventricular fibrillation. Its onset is abrupt, without warning, and mostly occurs in individuals without cardiac problems in their medical history and who feel well, thus there are no specific symptoms. This indirectly implies that sudden cardiac death can occur in anyone, at any place, and at any time. Early defibrillation, i.e. restitution of normal heart rate by electric shock, is the only efficient management of ventricular fibrillation. Automated external defibrillators (AEDs), the new generation defibrillators, enable safe defibrillation to be performed by

educated laymen. AED is a simple and ‘smart’ device assessing heart rate automatically and giving instructions on further action. Numerous studies have shown AEDs to be simple and safe enough to be used even by children older than seven years. It is of utmost importance to make the public aware of the fact that an educated layman cannot do any harm, deliberately or inadvertently, by employing AED.

Survival of individuals sustaining a sudden cardiac arrest depends directly on the intervention taken by immediate bystanders and on the availability of early defibrillation, whereby their fast assistance with correct resuscitation procedures and early defibrillation within 3-4 minutes can increase the likelihood of survival by more than 50%. (4,5) There is no emergency medicine service in the world that can reach an individual having a sustained sudden

cardiac arrest so quickly, notwithstanding its high quality organisation and fast action. That is why incentives for the implementation of public access to the early defibrillation programme have been launched, allowing for educated laymen to 'buy time' by performing resuscitation and defibrillation procedures until arrival of the medical service. Educated laymen thus make an important link in the survival of individuals sustaining a sudden cardiac arrest.

The “Restart a Heart – Save a Life” Public Access to Early Defibrillation Programme

There have been some local attempts to launch the public access to early defibrillation programme in Croatia, as well as in Europe. (6) The role of early defibrillation was recognised and AEDs were supplied in some settings, however, their distribution and public education were quite sporadic. Most of these local programmes failed primarily due to legal aspects of defibrillation performed by laymen. According to the international professional literature, the following recommendations should be respected on launching a national programme: stimulating legislative adjustment with the aim to facilitate laymen defibrillation; placing AEDs at the sites where people are expected to assemble; and educating as many laymen as possible. (4,7,8)

Considering all these facts, the European Parliament adopted the Declaration on Establishing a European Cardiac Arrest Awareness Week on 14 June 2012, calling on the European Commission, Council of Europe and all member countries to stimulate enactment and facilitate conduction of the national programme of public access to AEDs. (4) Recommendations from this Declaration have been included in the National Strategy of Healthcare Development 2012-2020. (9)

Based on the European Parliament Declaration and National Strategy of Healthcare Development, the Ministry of Health of the Republic of Croatia

launched the national Public Access to Early Defibrillation Programme entitled “Restart a Heart – Save a Life” (hereafter: the Programme) at the beginning of 2013. (10) The goal of the Programme is to increase the rate of survival of individuals sustaining a sudden cardiac arrest in Croatia from the current 10% to more than 50%. The main Programme activities are as follows: (a) improving public health awareness about the role of early defibrillation through education of citizens and sensitisation of the public at large; (b) increasing AED availability; and (c) educating as many laymen as possible in resuscitation procedures by use of AED. The Croatian Institute of Emergency Medicine (CIEM) and the Croatian Institute of Public Health are in charge of the Programme's implementation.

The establishment of the early defibrillation programme is a relatively clear process; however, its satisfactory implementation requires continuous surveillance, collection and updating of all relevant data and the establishment of a quality control system. One of the European Parliament recommendations refers to systematic data collection to ensure feedback and quality management within each programme. (4) Therefore, the Croatian Ministry of Health passed the Regulations on the Conditions of the Public Access to Early Defibrillation Programme Implementation (hereafter: the Regulations), regulating the conditions for the Programme's performance, the conditions for AED placement and usage at public sites, the way of compulsory training of non-medical individuals in performing basic resuscitation measures by use of AED and establishment of a quality control system. (11)

In order to stimulate the launch of the Programme, the Minister of Health signed collaboration agreements on the Programme's implementation with the Ministers of Defense, of the Interior, of Maritime Affairs, Transportation and Communication, and with the director of the National Protection and Rescue Directorate. Based on these agreements, the Ministry of Health supplied

AEDs and provided the training of the personnel involved.

In the frame of the 2013 Programme, 197 AEDs were purchased and fitted in part at sites where people are expected to assemble permanently or occasionally (national parks, natural parks, police departments, railway stations, airports, port authorities, barracks, etc.), while the rest were allocated to the national intervention units, public fire departments, volunteer fire departments, the Croatian Mountain Rescue Service, etc. At the same time, training was organised for employees at the services where the AEDs were fitted. During 2013, CIEM prepared and (in collaboration with county institutes of emergency medicine) organised 41 courses entitled Basic Resuscitation Measures Using AEDs, through which the participants acquired due knowledge and skills necessary for appropriate and timely recognition and providing first aid in case of sudden cardiac arrest. The courses were harmonised with the recommendations issued by the European Resuscitation Council and held according to the conditions set by the Regulations. CIEM made an educational video material for laymen on the basic resuscitation measures with the use of AEDs in adults sustaining a sudden cardiac arrest. In 2013, a total of 422 laymen including policemen, firemen, employees of ministries, railways, port authorities, national interventional units, national parks, natural parks, etc. attended the courses and received the necessary training.

The AEDs have been included in the emergency medicine service network (the phone number 194). According to the Regulations, all AEDs in the public network have to be registered in the Registry of AEDs kept at CIEM, where data on the sites and addresses of AEDs fitted in the Republic of Croatia are collected and published on CIEM website. Systematic data collection through the Registry's establishment and updating ensures feedback along with systematic professional and technical surveillance of AEDs. This enables

a quality system management within the Programme. The activities undertaken during 2013 were in part financed by available World Bank resources.

The Ministry of Health collaborates with a number of professional and civil society organisations, including the Croatian Society of Emergency Medicine and the Croatian Society of Resuscitation (part of the Croatian Medical Association), the Split "Healthy City" Association, the Red Cross, the Ambulance Association, the Patient Association

and many others, in order to promote and upgrade public awareness of sudden cardiac arrest as a major public health problem.

Conclusion

The national Public Access to Early Defibrillation Programme entitled "Restart a Heart – Save a Life" ensures a broad platform for action of the government administration, governmental and non-governmental organisations, and all agencies and individuals interested in

performing activities that will contribute to increasing the rate of survival of individuals sustaining a sudden cardiac arrest. Very promising examples of active and adequate participation in the Programme have already been recorded in some Croatian counties. The chance of survival of people sustaining a sudden cardiac arrest can only be increased by joint efforts and action of healthcare professionals, citizens, associations, national and local institutions and the mass media.

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