

Bystander CPR: why all the fuss?

Simon Attard Montalto

In Europe, approximately one person suffers a cardiac arrest every 45 seconds, totalling 2-3,000 per day and 350,000 per annum.¹⁻² Indeed, sudden cardiac arrest without resuscitation is the third most common cause of death in industrialised nations.³ In the majority of cases, cardiac arrest is fatal and <10% of victims of 'out-of-hospital' arrest survive to discharge from hospital.⁴ Furthermore, given that irreversible brain damage secondary to the cessation of cerebral blood flow is established within just 3-4 minutes, survival is often associated with significant neurological disability and an inferior quality of life compared with their pre-arrest state.⁵⁻⁶ Cardiopulmonary resuscitation (CPR) associated with defibrillation, if delivered effectively and promptly within 1-2 minutes of cardiac arrest, may improve the chances of survival 3-4 fold or, rather more optimistically, to around 60%.⁴⁻⁶ However, the 'time to intervention' is paramount and survival decreases by 10% for every minute delay in the initiation of CPR.⁷⁻⁸ Conversely, studies from Denmark, amongst others, have shown that prompt initiation of effective bystander CPR will more than triple survival and save 200,000 victims in Europe and the US and, if extrapolated worldwide, save more than 300,000 lives per annum.⁹

The vast majority of cardiac arrests occur in the community, away from a suitably equipped medical setting and are witnessed by bystanders in around 80% of cases.¹⁰⁻¹¹ In Malta in 2016-17, despite 71% of cardiac arrests being witnessed by laypersons, intervention only occurred in 39% of cases, including bystander defibrillation in 9% (data, MRC). It is not surprising, therefore, that the survival to discharge from hospital after out-of-hospital arrest in Malta was just 6% (data, MRC). The importance of good, bystander CPR cannot be underestimated. This requires laypersons to identify the signs of collapse, and be competent to initiate good CPR without delay and certainly before medical help arrives. In Malta, as elsewhere, the average time for an urgent ambulance to reach a victim varies but, even with optimal circumstances, this is likely to exceed 10 minutes⁸ and is probably too late for most victims of cardiac arrest. So the timely intervention of laypersons is absolutely crucial if survival figures after an out-of-hospital cardiac arrest are to reach the European Resuscitation Council (ERC) goal of 60%. CPR and the use of an AED are relatively uncomplicated skills that can be mastered easily by non-medically trained laypersons.¹²⁻¹³ This also applies to children whose retentive skills for the CPR algorithm may be better than adults, provided they are old enough to perform forceful and effective chest compressions.¹⁴⁻¹⁵

Malta is fortunate in that several bodies including the Malta Resuscitation Council (MRC), the Red Cross, St John Ambulance, Malta Heart Foundation, Order of St Lazarus and others, regularly provide courses in combined CPR-AED training. These, together with the MRC that runs ERC-certified courses, have set the standard of training required. To-date, the MRC alone has trained more than 2,000 medical personnel and 1,000 laypersons, and has helped train and equip the Health and Safety Unit within the Education Division who, so far, have trained around 300 schoolchildren. Whilst CPR-AED training is now mandatory for all medical students, General Practitioners and young hospital trainees are also

Simon Attard Montalto MBChB, MD (L'pool),
FRCPCH, FRCP, DCH
Chair, Malta Resuscitation Council
Head, Department of Paediatrics,
The Medical School,
Msida, Malta
simon.attard-montalto@gov.mt

required to complete ILS and more advanced resuscitation courses. Ideally, all doctors, nurses and paramedics should complete basic training in CPR as a 'core skill'. Ultimately, the aim would be for CPR-AED skills to be included in the National School Curriculum for all 14 year olds (i.e. at an age when children not encumbered with major examinations but mature enough to appreciate the importance of CPR and strong enough to deliver this effectively). This goal has been championed by the European Resuscitation Council's aptly named 'Kids Save Lives'¹⁵⁻¹⁶ and 'Restart a Heart' Campaigns launched in 2013,¹⁷ and is supported by the World Health Organisation in 2015.¹⁸ So far, five European countries including Belgium, Denmark, France, Italy and Portugal, have mandated the requirement to introduce CPR training onto the Education Curriculum by law, whilst others including Malta have recommended this initiative.¹⁹ In practice, however, the introduction of CPR training in schools is still not widespread, even in those countries where this initiative is mandatory.^{9,19} To-date, both Ministers for Health and Education in Malta have endorsed the ERC's request to promote the 'Kids Save Lives' Campaign and to lobby the World Health Organisation to place CPR training on their annual agenda. Linking CPR training with specific job applications, for example in the hospitality and tourism sector, managerial/supervisory posts in large institutions, factories, etc, and before the award of a valid driving or maritime licence would also boost the number of trained laypersons. The advent of the 'Good Samaritan' act that is currently under debate in Parliament will protect both victims and rescuers, and will further encourage bystanders to act without fear 'of retribution'.

However, training alone without the availability of AEDs is suboptimal, especially in the case of cardiac arrest in adults where fibrillation is present in approximately 25-33% of cases.²⁰ At present there are almost 600 AEDs spread around the island, but most are located in private institutions and are not available to the public. Moreover, some of these AEDs are not operative, usually because the battery has lost charge and/or expired. Although the Malta International Airport, Air Malta planes, Gozo ferries, most schools, banks, some hotels, factories and social clubs, amongst others, do have at least one AED, Malta needs many more in key and accessible locations to

be truly 'covered'. The Victoria Council responsible for the Gozo Citadel has recently taken the lead in this regard and work is ongoing to install 8 AEDs with 24/7 public access in Valletta. A mobile phone AED locator app for Malta is also 'work in progress'. Malta should strive to install (and maintain) AEDs in most if not all key positions where significant numbers of individuals are likely to aggregate. As in other countries and major cities, the distinctive AED locating sign (a green square with a medical cross, heart and lightning bolt) should be widely distributed and clearly visible in numerous locations. Only this eventuality, combined with a sufficient body of trained bystanders who can initiate CPR and operate an AED, will significantly improve our survival figures for out-of-hospital cardiac arrest and justify all the fuss!

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The Journal Editor on the 10th Malta Medical School Conference

Dear Colleagues,

You are aware that you are all invited to the triennial 10th Malta Medical School Conference. This will be held 29 th November 2018 - 1 st December 2018 at the Westin Dragonara Hotel in St. Julians. The event is the largest local medical meeting and is performed highly multidisciplinary, with the presentations of papers and posters relating to clinical work and research that are carried out locally and overseas. Furthermore, a number of eminent Malta Medical School graduates working abroad, as well as renowned foreign colleagues, will deliver plenary lectures. On behalf of the Conference Scientific and Organising Committees, and of the Journal, we wish you a pleasant yet educational time at the conference. If you are presenting work, do please bear in mind that if you do not write up your research work as a formal paper/s, and succeed in publishing, it is as if your work simply has not been done. Please, we exhort you, go forth, write a scientific paper, and publish!

Cover Picture:
 ‘Valletta by night’
Acrylic
 By Faye Grech

Faye Grech was born on the 19th of August 1995. She is currently reading for a Master of Psychology in hopes of becoming an educational psychologist. Her experience centres around work with children. She was also voluntarily involved in the planning and implementation of a children’s summer camp in Swansea, Wales, along with the sisters of the Daughters of the Sacred Heart. She hopes to continue to work towards improving the well-being of children.