What is the role of general practice in the Chain of Survival for treating people with cardiac arrest?

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Patient survival is more likely when general practitioners and their staff are trained in resuscitation and equipped with defibrillators

With increasing appreciation of the importance of post-resuscitation care and long term patient outcomes, the Chain of Survival for patients with cardiac arrest has evolved.[1] However, the first three links have not changed: early recognition and an emergency call for medical help; early cardiopulmonary resuscitation; and early defibrillation. If these steps are not immediately and sequentially activated, further links in the Chain of Survival have little or no impact on survival. The study by Haskins and colleagues[2] reported in this issue of the *MJA* re-affirms the importance of these three links, and provides direction on how they can be further strengthened in community general practice.

Haskins and his colleagues examined the frequency and outcomes of cardiac arrests in general practice clinics in Victoria over 20 years and compared them with those of paramedic-witnessed arrests. Their findings are striking for a number of reasons. Firstly, cases of cardiac arrest of non-traumatic aetiology in general practices in which resuscitation could be attempted were rare, accounting for only 216 of the 104 110 cardiac arrests attended by Ambulance Victoria (0.2%). Secondly, survival for patients for whom general practice clinic staff attempted defibrillation was similar to that of people who collapsed after paramedic-witnessed arrests. Thirdly, the prospect of survival for patients who suffered cardiac arrests in GP clinics with defibrillators was approximately twice as great as for patients who collapsed in clinics where general practice clinic defibrillation was not performed.

Unexpected cardiac arrests rarely occur in general practice clinics, but they are also rare events in many other settings. For example, we found an incidence of just 2.4 cardiac arrests per 10 million passengers in international airports.[3] Nevertheless, people expect airports to be equipped with public access defibrillators. It is therefore reasonable that they also expect GPs and their clinic staff to be trained and equipped to deal with unexpected cardiac arrests.

The study by Haskins and colleagues adds to an international body of evidence that GPs and their clinic staff can contribute to higher rates of survival if they are trained in resuscitation and have access to defibrillators.[4] The survival rates they report for patients who had cardiac arrests witnessed by paramedics and

for those who were defibrillated in general medical clinics were similar. These findings suggest that a crucial opportunity for influencing survival may be lost when general practice clinics do not have defibrillators. They also indicate that patients with prodromal symptoms should not travel to general practices; they are not emergency departments, and the risk of collapse en route or in a location where medical staff are not available mean that making a call for help and waiting for the arrival of emergency services is the course of action most likely to result in survival.

Improving cardiac arrest survival rates requires incremental strengthening of each link in the Chain of Survival. Having the training and equipment to deal with unexpected events on site is one way in which GPs can contribute; participating in the organised emergency medical service (EMS) response to cardiac arrests in their communities would also be beneficial. Our experience in Ireland is that trained and equipped GPs add unique value by playing a cardiac arrest first responder role. In a rural region with a GP defibrillator program, GPs provided the first shock to about 30% of survivors during 1992–2008.[5] An analysis of national data confirmed that GP participation in resuscitation attempts was associated with improved survival,[6] as have subsequent Irish studies.[7,8] The Irish experience was also that resuscitation was more likely to be ceased at the scene of the cardiac arrest if a GP was present, highlighting the role that GPs can play in compassionately managing the death of a patient when their resuscitation is no longer feasible.

Having a defibrillator on site is not a requirement for accreditation of GP practices in Australia. Resuscitation training and defibrillator purchase and maintenance cost money, and innovative funding models have been devised in some countries. In Ireland, such models have cultivated a culture of emergency readiness in general practice, facilitated the participation of GPs as first responders, and enabled data capture that has affirmed the value of these systems. The study by Haskins and colleagues confirms that GPs and their staff can improve survival after cardiac arrest in Australia. We encourage our Australian colleagues to consider how GPs can be equipped for unexpected cardiac arrest events and integrated into the emergency medical service response to such events.

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