

HEART

Public defibrillator shortage helping to boost heart attack deaths away from hospital

Decade-long campaigns to increase public availability and awareness have gone unheeded

[Public access to defibrillation remains out of reach for most victims of out of hospital sudden cardiac arrest Online First doi 10.1136/heartjnl-2013-305030]

[Accelerating progress in community resuscitation Online First doi 10.1136/heartjnl-2013-305356]

The restricted availability of defibrillators, and poor understanding of how to use them, are helping to boost the number of deaths from heart attacks occurring outside hospitals, suggests a study of one English county, published online in the journal Heart.

This is despite several campaigns to increase the numbers of these life-saving devices in public places, and the acknowledgement of the importance of their role in the English government's Cardiovascular Disease Outcomes Strategy, published last March, say the authors.

Every minute of delay in administering resuscitation increases the risk of death after a heart attack by between 7% and 10%. Currently, only between 2% and 12% of those who have a heart attack outside hospital live to tell the tale, with the death toll reaching an annual 30,000 across the UK.

External defibrillators can be used to shock an arrested heart back into rhythm before the arrival of an ambulance. They don't require any specialist expertise, and can be used by anyone - which is particularly important as the evidence shows they can triple the chances of survival, say the authors.

They wanted to find out how available external defibrillators are, given the push for their deployment in public places, such as shopping centres and train stations, over the past decade.

They concentrated on one typical county of England - Hampshire - which has a mix of rural and urban settlements, covering an area of 1400 square miles, with a population of around 1.76 million, 12% of whom are aged over 70.

They reviewed all calls made to the South Central Ambulance Service between September 2011 and August 2012 following a heart attack. For all emergency calls made from locations other than a person's home, the service specifically asks whether the caller can access a defibrillator, and if so, instructions are given in how to use it.

During the study period, 1035 calls were made following confirmed cardiac arrests away from a hospital, equivalent to one for every 600 members of the public each year.

For 44 of these incidents (4.25%), in 34 different locations, the caller was able to access an external defibrillator, but only attach it to the victim in less than half the cases (18, 41%) before the arrival of the emergency services.

This gives an overall deployment rate of just 1.74% of all cardiac arrests recorded, which the authors describe as "disappointingly low."

Across the county, 673 external defibrillators were located in 278 places as of October 2012, including in all large shopping centres. But only just over one in 10 nursing homes, around one in 20 train stations, and a similar proportion of community centres/village halls had these devices.

The authors acknowledge that they did not investigate the availability of public defibrillators across the UK, but suggest that their findings “would probably be similar elsewhere.”

They add: “The poor survival rates in [out of hospital] cardiac arrest are in part related to delays in defibrillation. More defibrillators are required in public areas and more education is needed to give bystanders the confidence to use the [device] when it is available.”

In an accompanying editorial, Drs Mickey Eisenberg and Tom Rea, of King County Emergency Medical Services in Seattle, USA, acknowledge that it would not be possible to make these devices available everywhere.

But they say that they should be considered a public safety device of the same order and ubiquity as smoke alarms and fire extinguishers.

Currently defibrillators are expensive, but if regulations were relaxed a little, they could be manufactured more cheaply and still bring similar benefits, they argue.

“We can be thankful for the handful who are saved with early defibrillation, but we should be troubled by the many who are denied the benefit,” they write. “Collectively, we need to strive to deliver this proven treatment. If we are successful, the next decade will bring a fuller realisation of the [device’s] lifesaving promise.”