



Improving other's luck

One survivor of sudden cardiac arrest is now pushing for greater public access to defibrillation

Who/where

Paul Keetch, Member of Parliament for Hereford, England

On a transatlantic flight from London, England to Washington D.C., USA

Challenge

Improving access to defibrillation by making defibrillators more widely available, and making people realize that they can make the difference in saving lives

Solution

Public access defibrillation, where trained, non-medical responders provide both cardio-pulmonary resuscitation and defibrillation as first aid in public places or on business premises, using devices such as the Philips HeartStart FR2 defibrillator

Paul Keetch, Member of Parliament for Hereford, England, suffered a sudden cardiac arrest on a flight to Washington D.C. on July 8th, 2007. Technically, he was dead for 7 minutes. Prompt reactions from the cabin crew and medical personnel on the flight ensured his survival. Key to his recovery was the automated external defibrillator (AED) on the plane. Now he is campaigning for laws to increase public access to defibrillation, particularly in the air.

There is a gap in Paul Keetch's memory for the days surrounding his cardiac arrest and reanimation. This is normal. It is the mind's way of coping with the stress. However, he has pieced together the events from talking to the people who were with him and who saved his life. Though they are not his memories, it is an emotionally challenging subject for him.

"Certainly, without the defibrillator, I would have died."

But as a Member of Parliament, he knows that it is important to talk about it, because he is in a position to ensure others can be as lucky.

No warning

Mr. Keetch was part of a delegation of the NATO Parliamentary Assembly on its way to a meeting in Washington D.C.. After the seat belt signs had been turned off, he was standing in the Upper Class bar area, going through some papers with a colleague, preparing for the visit, when he fell over in mid-sentence.



Paul Keetch, Member of Parliament for Hereford, England, is a survivor of Sudden Cardiac Arrest

His colleague remarked afterwards there was no hint of what was about to happen. He had looked his normal, healthy self, and he had not complained of even the slightest discomfort.

PHILIPS



Because of his own experience and conviction, Paul Keetch is now pushing for greater public access to defibrillation

“My colleague told me afterwards that it was ‘just like turning somebody off,’” reports Mr. Keetch. There was no turbulence, and the flight attendant at the bar, Miss Claire Jamieson, assumed he had tripped.

As he fell, his head hit a drinks trolley and started bleeding. An English general practitioner (GP) heard this happen and came forward. Miss Jamieson had alerted the rest of the crew, and a call went out for medical help. A Brazilian military medic, who was among the passengers, responded. Initially, attention was focused on the wound. But one of the cabin crew then noticed Mr. Keetch had no pulse, though the English GP still detected some exhalation, which added to the confusion. The Brazilian medic started providing cardiac massage and Miss Jamieson worked with him to give Mr. Keetch mouth-to-mouth resuscitation.

One of the cabin crew raised the alert to code Delta Foxtrot – a need for defibrillation – and the Flight Services Manager, Jane Fear, raced to the front of the plane to get the automated external defibrillator (AED). The crew at the scene opened Mr. Keetch’s shirt for Miss Fear to attach the pads to his chest. There was still some confusion about the exact cause of Mr. Keetch’s unconsciousness until the defibrillator detected ventricular fibrillation, and signalled there was a need to provide a shock.

“Sudden cardiac arrest can happen to anyone, and it kills 94% of the people it happens to.”

Mrs. Fear cleared the people away and pressed the button. Mr. Keetch’s heart restarted immediately. “Certainly, without the defibrillator, I would have died,” he says.

Mr. Keetch remained unconscious as the plane turned around and returned to Heathrow airport. The doctors on-board put him on a drip and when they landed Mr. Keetch was

transferred to an ambulance on the runway. He spent about 40 minutes there until his condition stabilised. The flight records show that seven minutes had passed between the first alarm and defibrillation. In ventricular fibrillation, instead of pumping rhythmically, the muscle of the heart quivers ineffectually.

“Next time you fly, ask if the plane has a defibrillator.”

The blood supply to the rest of the body stops. Seven minutes without blood could do much damage to the brain. Mr. Keetch was not reacting even to pinpricks, indicating he was in a deep coma. The greatest danger seemed to be of severe and lasting brain damage, so he was then taken by helicopter first to the neurologists at the Royal London Hospital in Whitechapel.

One in a hundred

When the neurologists could do no more he was transferred to The London Chest Hospital in nearby Bethnal Green. After six days in a coma, he is told he was conscious and communicating for a further three days that he does not remember. This was the first sign that he could make a good recovery. For those three days, he was disoriented, at times distressed, and occasionally belligerent. After this period his memory, and his normal behaviour returned, and his family and friends could start relaxing. Some people have seen a change in him. But in his energy for working on other people’s behalves, the biggest change has been his more vigorous championing of a further cause: wider access to defibrillation.

Apart from having to ease himself back into his normal routine, initially his biggest problem was the pain in his chest from two cracked ribs. But even for this, he was

ultimately grateful. Before his cardiac arrest, Mr. Keetch was Patron of Herefordshire Heartstart, a charity in his constituency that teaches cardiopulmonary resuscitation (CPR). He had taken their course, so he knew that when CPR is done properly it is not unusual for a few ribs to get cracked. He was glad the Brazilian medic and crew had given him proper CPR – it seems likely that this had ensured circulation to his brain, thus preventing any serious damage.

Only months earlier Mr. Keetch had had an extensive medical check-up and passed with flying colors. In trying to work out what happened, the doctors at the London Chest Hospital concluded there were no mechanical or cardiovascular problems, and the electrical problem was spontaneous. This is known as an idiopathic ventricular fibrillation, or in short, there was no foreseeable reason for it to have happened. This is true of 1% of cases.

“My view is very simple. I think we should have them.”

“Sudden cardiac arrest can happen to anyone, and it kills 94% of the people it happens to,” Mr. Keetch adds. “Once it happens and the heart stops pumping blood, then the only way to survive is by electrically restarting the heart.” This is what defibrillation does.

An evident need

Mr. Keetch can now continue his life largely as normal. He swapped offices with another Member of Parliament in a further part of the government buildings, to increase his daily exercise. He now has an implantable cardioverter defibrillator (ICD), just in case the electrical disturbance should strike again so he no longer needs a defibrillator on any plane he takes. But he has raised awareness



Paul Keetch with Jane Fear (left) and Claire Jamieson (right) from Virgin Atlantic who played a major part in his rescue

among his colleagues on the Foreign Affairs Committee, who often travel. “I tell people,” says Mr. Keetch, “next time you fly, ask if the plane has a defibrillator.” Some of his colleagues do just that, or choose airlines on that basis.

But Mr. Keetch does not stop with encouraging his colleagues. Since his incident, he has started campaigning for regulation. The law in the United States of America requires all aircraft flying in its airspace to carry a defibrillator. This is not the case elsewhere.

“It's so simple. The machine tells you what to do.”

“I am aware of just how lucky I was,” says Mr. Keetch. “If I had been on an internal British flight with another airline, I could be dead now.” The seven minutes for which Mr. Keetch’s heart stopped pumping blood was long, given the distraction of his head wound; this is still a tiny fraction of the time it would take a plane to land, even if it was directly above an airport. “There is no way without a defibrillator that somebody having a cardiac arrest is actually going to survive.”

Practical issues

Arguments against wider availability of defibrillators start with the possibility of hurting the victim. This is possible with traditional, manual defibrillators. However, modern automated external defibrillators (AEDs) make it impossible to do any harm. An AED examines the disturbance of the victim’s heart, recognizes whether defibrillation can correct the condition, and only allows the user to shock the patient if it will help.

Another argument relates to ventricular fibrillation being rare. This is a specific type of what are commonly referred to as heart attacks, and the only one that can be treated by defibrillation. Virgin Atlantic has had several heart attacks on board since 1990. Not all of them were ventricular fibrillation, and some cases of ventricular fibrillation did not respond because of other complications. But apart from Mr. Keetch, another victim has also survived and gone on with his life. This is reason enough for Mr. Keetch to see AEDs as useful.

The other common argument is that some victims survive but then have a low quality of life, or need costly, ongoing treatment. Here Mr. Keetch counters by stressing the value of the productive lives, like his own, that are saved. "My view is very simple. I think we should have them."

"I would support any campaign to improve people's awareness of defibrillators."

He points out that the devices are no longer expensive, and charities, like Herefordshire Heartstart, or other organisations may support the cost of buying one. They also need little training, which again might be available free or at reduced costs, for example from local ambulance services. The model used on Mr. Keetch in the plane was a Philips HeartStart FR2. This is distributed by Laerdal Medical in the U.K., and Mr. Keetch has taken a training course at their Simulation Training Centre. He testifies that the training is "so simple. The machine tells you what to do."

The HeartStart FR2 even provides feedback on CPR. Here Mr. Keetch comments from his own experience that "you can have the best



Public access to AEDs can save lives. There is a 75% chance of survival with immediate defibrillation¹

AED in the world, but delivering effective CPR is just as important for a successful recovery."

Creating legislation

Mr. Keetch first explored the possibility of changing the law in the U.K. However, with the support of Jim Fitzpatrick MP, the Parliamentary Under Secretary of State for Transport, they have now started the process of creating a more effective European Union law. The current focus is on airlines, but Mr. Keetch sees this as a first step in wider public access to defibrillation. In the U.K., with a population of just over 60 million, there are 250 cases of sudden cardiac arrest every day. Only 5% of these survive, and defibrillators in public spaces and within companies could go a long way in improving that survival rate.

"If better access to defibrillation can save a few people a year, then isn't that a good thing?"

This is a view also supported by the appearance of defibrillators in increasing numbers of public buildings, from airports and railway stations to shopping centers and offices. "I would support any campaign to improve people's awareness of defibrillators, make them more widely available, and make people realise that they can make the difference in saving somebody's life," adds Mr. Keetch. "If better access to defibrillation can save a few people a year, then isn't that a good thing?"

¹Handley, Koster, et al, Resuscitation(2005) 67S1: S25-S37



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Printed in The Netherlands
4522 962 44981 * MAY 2009

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