

Sesiwn Dystiolaeth: Diffibrilwyr
Evidence Session: Defibrillators (29.04.14)

[1] **William Powell:** I would like to welcome you all here this morning. We have the lead petitioner Phil Hill, Richard Lee from the Welsh Ambulance Services NHS Trust and June Thomas, who is a local defibrillator campaigner on the petition, which is P-04-471, Mandatory Welsh legislation to ensure Defibrillators in all public places. We have a helpful research brief that all Members have seen. I would like now to ask you to introduce yourselves briefly to check the audio levels and for the Record of Proceedings. I also believe, Mr Hill, that you have an opening short presentation to share with us.

[2] **Mr Hill:** Thank you for the introduction. I would like to thank the Chair and the committee for inviting us today. My background is as an advanced nurse practitioner and prescriber, currently working within the Aneurin Bevan Local Health Board, but I have 25 years of special interest and professional interest in pre-hospital care and resuscitation. I have been an instructor for the Resuscitation Council (UK) for 18 years.

[3] I would like to introduce Mr Richard Lee, who is a clinical services manager and paramedic with the Welsh Ambulance Services NHS Trust. Part of Richard's remit is the management of the department that oversees public access defibrillator sites and community first responder schemes. Their professional input in the last two and a half years with my studies and with this petition has been invaluable.

[4] I would also like to thank June Thomas for showing such courage in agreeing to attend with us today. June has been a community defib campaigner since the sudden unexplained death of her 15-year-old son, Jack, at his girlfriend's home in the Gwent Valleys in 2012. He was previously fit and well, and had no warning symptoms before he arrested and collapsed on the sofa. Jack had received immediate continued basic life support—CPR—from friends and family, and the ambulance arrived very quickly with a defibrillator. Despite this excellent care, Jack could still not be saved. June works tirelessly currently with the local media in Gwent and charity organisations to get as many defibs into local schools as possible and cardiac risk assessments for young people. It was her wish that, like Jack, other victims of sudden cardiac arrest would get the best possible chances of survival with the ambulance service.

[5] In the last seven years, I have worked closely with WAST on a voluntary basis, setting up a first responder scheme near my home. However, for nearly two and a half years, I have been focused on my Master's study in developing a pilot tool with the public on awareness of, and attitudes to, public access defibrillators. This literature search led to the petition, because I wanted to put my studies and literature search to immediate use. I hope that the evidence that I have provided to you over the months has highlighted the importance of automated external defibrillators in public places. For every minute provision of an AED is delayed to a victim, the chance of survival is said to deplete 10% per minute. This is even if CPR is ongoing. Regardless of who funds the AED, such proliferation of AEDs in public places in Wales has led to questions about their availability and even public awareness of their use. It would be an absolute tragedy if somebody died near a building where there was an AED available, and yet it was locked away or only a select few knew it was there or were allowed to use it. This is contrary to national guidance from the Resuscitation Council, and this is maybe because there are currently many misconceptions about AEDs and public access defib schemes, including, 'Everybody has to have one, do they not?' To show this, I have done a map; sorry, I do not have many of them to hand out. It is a snapshot survey from my own memory of about a 4.5 by five mile radius near my home and it demonstrates the amount of defibrillators that are already in place. Obviously, funding is a big issue, but what people are surprised to know is that the defibs are already there; it is just that when the surgeries or whatever are closed, they are locked away.

[6] International evidence is starting to emerge that with simple, co-ordinated public awareness and training campaigns, reinforced with public access defibrillator legislation, survival rates can not only be doubled, but more than tripled on occasion. I feel passionately that AEDs should be treated with the same, if not greater, importance as first aid kits, firefighting equipment and even river rescue equipment, which have similar laws under health and safety legislation to reinforce their importance. As with the smoking bans and the organ donation law, I feel that, yet again, Wales could lead the way in the UK on this vital public health and life-saving issue. I would like now to invite both colleagues to speak for a few minutes on why they think this law would be important.

[7] **Ms Thomas:** Since Jack's death on 12 February 2012—I was unaware of Phil's petition—I set up Jack's Appeal. I have been fundraising to get defibrillators in the Rhymney Valley and Gwent comprehensive schools. The first one went into Oakdale Comprehensive School in October last year and

we are due to deliver another four to schools in the area. Obviously, as a mum, losing a child, it is about the importance of having this equipment to save a life; £1,000 is nothing and, as Phil has already said, the public should have easy access to it so that everybody can use it.

[8] **William Powell:** Thank you very much for that contribution. Mr Lee, you are next.

[9] **Mr Lee:** Hello, everyone. From an ambulance service point of view, we are aware of about 230 locations across Wales where there are currently public access defibrillators and we have good systems in place for activating those defibrillators when there is an appropriate incident nearby. A defibrillator, as June has already said, is a £1,000 device—there is one on the table here—that is increasingly designed to be used by somebody with no formal training. The machine talks when you turn it on; it gives you very clear instructions on what to do, including starting by telling you to remain calm and giving some reassurance to the user. There are a lot of myths about AEDs that they might make the situation worse. It is impossible to inappropriately treat a patient with an automated defibrillator. That is the whole point of them being automated; they will deliver an electric shock only to somebody whose heart has stopped and whose heart is in a particular type of rhythm when it has stopped. Members will be aware, I am sure, that your heart is an electrically powered device and rhythmically pumps blood around the body. From time to time, for various reasons, the heart goes into a condition called fibrillation, where the heart, instead of beating, is just quivering. The defibrillator is the only treatment that will reverse that. We have heard from Phil that, with every minute that passes, there is a 10% reduction in overall survival. An electric shock via a defibrillator from a lay person has saved many lives across Wales and across the UK, and could save more if more public access defibrillators were available.

[10] **William Powell:** Thank you very much. We are particularly grateful to you all, and to Phil, for having had the commitment to bring this petition forward, as well as for your joining us this morning. We are particularly grateful, for the reasons stated, to you, June, for having the courage to bring the issue forward in this particular way. I know that you have done some media work already this morning on this issue, and I know that there is a lot of media interest in these matters. We have limited time, and we have some important questions that we would like to bring forward with you.

[11] Phil, you have already addressed the issue regarding the fact that

quite a number of defibrillators are in buildings that are not accessible for large portions of time. However, what other barriers currently exist that prevent the installation and the effective use of automated external defibrillators in public places in Wales, and how would you propose that these problems are addressed so as to provide greater access to and public benefit from defibrillators throughout Wales?

[12] **Mr Hill:** I think that this is why the legislation is important. As I have shown, a lot of places, especially clinical areas, have a defib already, but, even among professionals, there is a misconception about who can use it and who they should let have it. As we have said, perhaps some focus could be put on changing the law to make people aware of their commitment of making a defib available 24/7, and, instead of just buying defibrillators all the time, making cabinets available, and reassuring people about legislation, litigation, and the fact that they are really fool-proof. So, I think that a lot of the barriers are around legislation and funding, when, as hopefully the map demonstrates, there are already an awful lot of defibs out there in Wales—extrapolated across the entire area—that could be co-ordinated with public training and charity work, as well as with the ambulance service.

[13] **William Powell:** We are very grateful for your bringing us the snapshot of this particular area near your home, which really brings home to us what a spread there already is of defibs, but, as you have said, many of them are not accessible. What action, in your view, should be undertaken to map across the whole of Wales the current provision that exists of defibrillators in order to identify where there are gaps?

[14] **Mr Hill:** I have my ideas for my research, but I will refer the question to Richard, because I know that he had similar ideas already.

[15] **Mr Lee:** We have good records of where these machines currently are. On the computer systems that we use within our clinical contact centres to manage 999 calls to the ambulance service, an information box pops up to our call taker to alert them to a presence of an AED, if we know that there is one there. We have processes in place to make sure that we capture new machines in the public sector, and especially in the health sector. There is a need for a greater co-ordination of defibs that are privately funded. A lot of companies will have provided a defibrillator in their workplace, and we need to find a way to make sure that all of those are captured.

[16] I think that the big opportunity is for us to ensure, in Wales, that,

where there is a defibrillator in a building, as Phil says, it is available 24 hours a day to the local community. That is as simple as the defibrillator being mounted in a cabinet on the outside of the building rather than being locked away in the building when that facility is closed. We know that a considerable number of cardiac arrests do not occur in public places, but occur at home. The thing that will make cardiac arrest a disease of the past is for a defibrillator to be widely available immediately for people in domestic situations. That can be achieved only by increasing the number of defibrillators that are available to the public in their residential areas.

[17] **William Powell:** Thanks. My colleagues are keen to open up their lines of questioning. Russell George is first.

[18] **Russell George:** Thank you, Chair. Thanks for attending. I have become more knowledgeable on this issue just in the last 10 minutes. However, where I live and work, I do not know where my nearest defibrillator is. I would guess that it is in the surgery, but, clearly, there is one nearer than that, and I did not know that before. Part of the issue, it seems to me, is that it is more an issue not of having more defibrillators made available but of making the ones that are there more easily available. I am just wondering how, and I take your point—. You are talking about having a public list of where the equipment is held. Have you any idea as to how that could be done? I am thinking of modern technology, apps and all sorts of things, but how could that be mapped and how could that information be sent to the public?

10:00

[19] **Mr Hill:** I think that it all has to be co-ordinated by the Welsh ambulance service, and the legislation is important, because of the evidence from other countries. For example, in north America—and I believe that this is happening in England—they have said that any new school build will have to have a defib, like a sprinkler system. However, if somebody has an arrest in a burger bar just over the road, they have no access to that defib. So, that person might then die. It is the same with airlines. Everybody assumes that there is a law that says that an aeroplane has to have a defib, and there is not. So, I think that the law would make—. Whether it is a charity, a school, or a train station, we do not really mind where or who you get your defib from, so long as it is a proper one and so long as it meets the requirements of the Welsh ambulance service and is mapped.

[20] **Mr Lee:** May I just pick up on the mapping issue? There are map applications available and there is a project being co-ordinated at the moment across the UK to look at a national database of AEDs and locations. That is being co-ordinated through one of the large charities.

[21] **Russell George:** I am also wondering how people—you can make them easily available, but how then do people know how to use them? I know that you mentioned that they can be used by anybody, but I did not know that. I would not know where to start, so that must be part of improving the situation.

[22] **Mr Hill:** It is a wider campaign.

[23] **Russell George:** It is. Absolutely.

[24] **Mr Hill:** That can be led by charities; it can be led by charities along with the Welsh ambulance service. There are at least two charities in Wales that provide free training, because the cost of training is often a concern. I think that part of the legislation should be signage. There is signage in this building now that tells us where we can escape from a fire, but, although there is national Europe-wide signage for a defib, that is no help if it is locked away on a trolley somewhere, or in a first aid room. So, that is part of the legislation. It is about signage and training and the Welsh ambulance service dispatcher talking the person through it.

[25] **Mr Lee:** That system is in place. If you dial 999 from a location where we know there is an AED, our call taker will give you advice on what to do. That does include talking through never having used a defibrillator before. The other thing that should not be underestimated is the power of the television. Certainly, I am aware of a colleague who is working hard to try to make sure that some story lines in some national dramas include AED usage, because we have seen in other health topics that a story line on *EastEnders* or *Pobol y Cwm* about something being done does drive up public awareness.

[26] **William Powell:** Bethan, you have a question.

[27] **Bethan Jenkins:** Yes. I do remember the situation with your son, and I am really sorry to hear about that. On a positive note, I think that what you are doing now is great in terms of taking something positive from a very tragic situation. I suppose, for me, it is interesting to know that we need

legislation, but I would like to understand, for the schools around your area and for the children, how that has affected them and changed their thinking. I was trained as a lifeguard, but I never used a defibrillator, and, as Russell asked, how could people at an early age benefit so that they have the confidence then when they are adults not to have to worry about or be intimidated by its usage? Perhaps it is about not just looking at the Minister for health and the health side of things, but more at the educational aspect through schools, because I see that as integral to giving people the armour for the future, really. So, could you just say a few things about what the school did, or what your area did, because if it is happening in your area, how can we make sure that it happens across other areas in Wales then so best practice can flow through?

[28] **Ms Thomas:** My experience of Jack was that he was a 6 ft 3 in healthy boy who never had any underlying health problems whatsoever. It was such a shock. He was just sat on the sofa and his heart just stopped and we still do not know to this day what happened to Jack. The school rallied around. I also work with another charity, called CRY—Cardiac Risk in the Young. I have a heart-screening programme coming into Oakdale Comprehensive School on 6 June, which would have been Jack’s eighteenth birthday. Along with that, I thought about the defibs; the screening and the defibs go hand in hand. So, I approached the schools first. I approached Oakdale Comprehensive School and spoke to the headteacher there. He was more than willing to have a defib, and have charities coming in to train all of the children. There are four other schools now involved. So, that is all lined up.

[29] I think that it was such a shock, especially for the younger children, as people think that heart attacks and stuff are for old people. When they see that this happened to Jack, they see that it can happen to anyone. A lot of these children are rallying around; they are doing the fundraising because they want the defibs in the schools. I went to Risca Community Comprehensive School and spoke to 20 students there. They asked me questions about Jack and we talked about the defib. We are running Jack’s Appeal with the *South Wales Argus*, but they turned to their headteacher saying, ‘Yes, we’ll help Jack’s appeal, but are there any funds, sir, for us to buy our defib now?’ The headteacher said, ‘Yes, there are’. So, that school has gone out and bought a defib, and they are all having their training.

[30] **Bethan Jenkins:** Okay. Thank you.

[31] **William Powell:** Joyce, you indicated that you had a question.

[32] **Joyce Watson:** Yes, I have a couple of questions. One is that your statement said that you cannot shock a heart that should not be shocked. I am just trying to think outside here what sort of situation might people meet. If you were to meet someone who had a heart pacemaker, for example, because they had atrial fibrillation or such like, is it possible, if they had an attack—an AF—which people might actually think is a heart attack, that that person would be harmed by the use of an automated external defibrillator? Is that possible? I am just trying to think—and this is what has come to my head because I am not a medical professional, as you might have worked out—of the sort of scenario where there could be confusion and possible harm done. That is why I am asking that question.

[33] **Mr Lee:** Without suggesting that we do this, I could put this machine on Phil now and turn it on and it would tell us to stay calm; it would tell us to wait and not touch him; and then, very quickly, it would come back and say, 'No shock advised; start cardiopulmonary resuscitation'. That is what it would say because the software inside the machine would realise that Phil is not in cardiac arrest. Now, the machine cannot see him, so it would advise us to start CPR, but it will not deliver an electric shock. So, if someone has fainted and they are unconscious, we would encourage people to stick the pads on and turn the machine on; the machine will then either advise an electric shock if the patient is in cardiac arrest, or will not if the patient has fainted. These machines are used in large organisations on a daily basis, such as the London Underground, Virgin Atlantic and British Airways. Due to the number of people that they deal with every day, they will apply these machines every day and they are used very safely. When they were new, 20 years ago, the technology was such that there were errors, but these machines now are entirely reliable.

[34] **Joyce Watson:** My next question, following on from the fact that you cannot make a mistake, is about optimum time. It seems obvious to me that there must be an optimum time between the urgent need to re-start someone's heart, which would go alongside the availability. Do you have any information regarding that, because you are calling for legislation to make the defibrillators available from inside the building to outside the building? I am assuming that that is to do with time.

[35] **Mr Lee:** The evidence shows us that if someone's heart stops, within three to four minutes their brain will start to suffer through lack of oxygen. So, the first three or four minutes in a cardiac arrest are vital. It is vital that

someone starts CPR because that will buy time. It is vital that someone dials 999 to get professional help on the way, and it is vital that someone delivers an electric shock through a defibrillator. If those things are done in the first three or four minutes, that will give the patient the greatest chance of survival. As Phil said, with every minute that passes between someone's heart stopping and a defibrillator being applied, the chance of survival dwindles by 10%.

[36] **Mr Hill:** And that is with CPR.

[37] **Mr Lee:** That is with CPR. A large chunk of our best successes for cardiac arrest patients whose hearts have stopped and have been re-started and who go on to live a healthy life are people who were in leisure centres or other areas where, at the point that they went into cardiac arrest, a member of staff applied a defibrillator. There is one leisure centre in Wales that I am aware of that, on three occasions over the past five years, has resuscitated people before we have arrived. That is really powerful for a device that costs £1,000. Those are three young people who have gone home to their families to lead a well life. In terms of the prudent healthcare agenda, good outcomes are prudent healthcare. Reviving somebody who goes on to live a functional life after their injury or illness is a good example of spending health money wisely. With every minute that goes by, that outcome becomes worse and, therefore, the patient will need more support in future.

[38] **Joyce Watson:** My final question—I thought I would bunch them all together, with your permission, Chair—

[39] **William Powell:** Yes.

[40] **Joyce Watson:** You call for legislation, but where will the duty be placed? I think that that has to be the biggest question that has not been asked yet. According to where you place that duty, there are all sorts of complications, possibly, that might fall out from that.

[41] **Mr Hill:** As we have said, with the best care—the best resuscitation care—as with Jack, the outcome can be negative. It is only really ever going to be—I hate to put stats on individuals—50:50, is it not, even with the best care? So, the worry is obvious, namely that if a leisure centre or a hotel has to have one by law, with the signage in the cabinets, 'We will be sued if someone dies in the foyer'. The evidence, as I have said, from other countries is that it is more a case that the finger of blame gets pointed where there is

half-hearted legislation that says, 'We only need them for certain buildings', because everybody just assumes then that everywhere has got to have one and this building will not let that building have one and whatever. Whereas, if it is a blanket rule that, if you are a public area or a clinical area, you need to let people have access to a defib in case of an arrest near your premises, everyone has that expectation. The Resuscitation Council and the British Heart Foundation released a statement last October that was very clear. They said that, although it is not law—and they have obviously sought legal advice—it would be very unlikely—. You are more likely to get into trouble, probably, if next door has one, but you do not and then the person could not access it. So, if you have one, yes, it has to be maintained and there needs to be a level of training for those staff, but it is about having them available. That is the key, in the same way as we have fire extinguishers available. As you say, nobody really worries about, 'Oh my God, if I use this fire extinguisher now, will I get sued?' There should be the same mentality with the defibs.

[42] **William Powell:** Bethan, I think you had a brief final question.

[43] **Bethan Jenkins:** This might seem like a stupid question now—nobody steals fire extinguishers—but I have this vision that if you put defibrillators just randomly outside places—. They are only £1,000, but £1,000 is £1,000. Do you have evidence from different countries on where they put them, so that there is at least somebody around who would know what to do? I have a concern that, if it was in a residential area, someone could take it into their house and not steal it essentially, but not put it back. What are the practicalities of having them so public that they are everywhere and that we lose control over the situation? I am not saying that that will happen, but I always work from that basis.

[44] **Mr Lee:** In all the train stations, they are in unlocked cabinets. Certainly, in Swansea, there is one right in the centre of the city in an unlocked cabinet. I am only aware, over the past five years, of one occasion when a machine went missing and, following a front-page article in the local paper, it was miraculously returned to a local police station, having been found. So, we do not see these things going missing. As you say, fire equipment does not go missing and this would be similar.

[45] **William Powell:** This has been an incredibly powerful evidence session. We are running into the last couple of moments, but I think that it would be that bit more powerful—. Phil, I know that you spoke about doing a brief

demonstration regarding this—or perhaps it was Richard who was leading on that. You also spoke of the power of television. I wonder if you could undertake, as has been suggested, a brief demonstration to skill us up in the way that we have requested.

10:15

[46] **Mr Hill:** While Richard is setting up, I will just say that, when we do these sessions for children, they have absolutely no fear of technology. Post Olympics, I did some teaching for children and, literally, they are operating it as quickly as this. They see the pictures and they work. Children have no fear of technology in my experience.

[47] **William Powell:** We have much to learn from them, absolutely.

[48] **Mr Hill:** You teach them CPR and they are straight in there.

[49] **Mr Lee:** Okay, here is the machine. This is one make; there is a different model here as well. When you open the machine there is an ‘on’ button, which does this: the machine comes on, and the machine will prompt you what to do. So, if we open that one up, Phil, and turn it on, we can hear it talk.

[50] **Mr Hill:** This is a training one.

[51] **Mr Lee:** So, the first thing it does is say ‘Unit okay’ to tell you it is going to work. Then it tells you, ‘Attach the defib pads to the patient’s bare chest’. The defib pads come out of this packet, and you stick them to the patient’s chest. You can see that there are pictures on them. So, we have attached the pads, and then the machine will run through advising us what to do. We have got the pads on, and the machine now says that it is analysing. The machine is deciding what to do. It is telling you, ‘Don’t touch the patient’. Then it will either tell you that it wants to give the patient an electric shock, or—. It is telling you to press the button. It will keep making that high-pitched noise until you do. Now it is telling me to start CPR. It gives me a beeper to tell me how quickly to do the chest compression. There is even a mark on the chest to tell me where to do it. It will continue to beep like this for two minutes. Then it will say that it is analysing again, and then it will deliver another shock if it needs to. You can hear from the beeps that the CPR gets quicker as the person gets more confident with it. It will continue to do this for two minutes or until such time—. The gap now is for us to do

rescue breaths on the patient. Then it will continue with the metronome, and at two minutes it will tell me that it is going to analyse the patient again. Then it will deliver another shock if that is indicated. If there is no shock at the end of the two minutes, it will say, 'No shock advised', and it will tell you to continue CPR. That is how simple they are.

[52] This one is actually more complicated because it is a training one, so there is a remote control. However, on the real one, there is one button. As you can see, there is an on/off switch, and there is a switch to deliver the electric shock, and that is as complicated as they are. They really are designed to be dead simple to use. There are even some real simple instructions on the front cover in pictorial form, for anyone who is hard of hearing or who cannot deal with the instructions.

[53] **Mr Hill:** This is why the signage is important.

[54] **William Powell:** Absolutely.

[55] **Mr Lee:** These machines really are very simple to use for £1,000.

[56] **William Powell:** Thank you very much to lead petitioner, Phil Hill, Richard Lee, and especially to June Thomas for coming today and giving us this really special insight into why you have brought the petition, and the potential that the wider availability of defibrillators would offer the people of Wales. Thank you very much indeed. Just to reassure you, we will provide you with a transcript of the evidence session today, and that because of shortage of time, we will come back on 13 May, at the next meeting of this committee, to consider the matter in the round, and the evidence that you have brought today. Thank you very much indeed for your time and all the trouble that you have taken.

[57] Colleagues, I will just alert you to the fact that we have had notice that ITV Wales will be interviewing the petitioners and, just after this meeting—obviously the timing is difficult for some of us—I think they are keen to speak to some of us, if that is possible. I just flag that up as a—

[58] **Joyce Watson:** If we finish at 10.45 a.m., it will be possible.