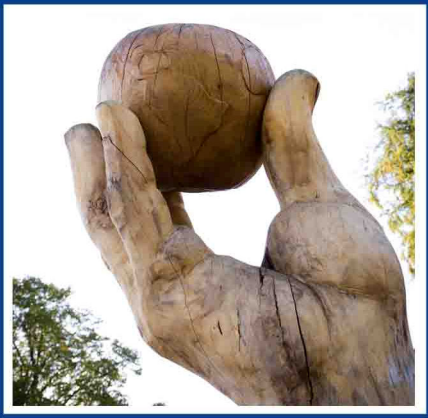
Defibrillator provision within South Kesteven District Council

Scrutiny Review



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Index

Foreword and Acknowledgements

Following the high profile resuscitation of footballer Fabrice Muamba during a football match using a portable defibrillator, we wanted to find out whether South Kesteven District Council had any defibrillators and if not, whether it should have.

The Scrutiny Committee set up this working group to investigate the issue. After an introductory report (ENV578) at its meeting on 22 January 2013 the committee agreed key lines of enquiry which we subsequently investigated and addressed. This has formed the basis of our recommendations.

Thanks to...

The working Group would like to thank the following individuals, groups and organisations who gave up their time and shared their experience and knowledge by providing evidence and answering questions:

- Professor Douglas Chamberlain (cardiologist and Editor Emeritus of 'Resuscitation' the official journal of the European Resuscitation Council)
- David Price (Environmental Health Services Manager)
- Michael Chester (Operations Manager from Grantham Meres Leisure Centre)
- David Hickman (Clinical Trainer, LIVES) and Stephen Hyde (Marketing and Fundraising Manager, LIVES)
- John Armstrong (Legal and Democratic Services Manager)
- Tracey Elliott (Governance and Risk Officer)
- Staff first aiders who responded to the working group's questionnaire

Councillor Paul Cosham (Chairman)
Councillor Mrs Rosemary Kaberry-Brown
Councillor Bob Sampson
Councillor Mrs Judy Smith

1.0 Introduction

When the heart beats at an abnormal rhythm (arrhythmia), it can beat too fast, too slow or stop beating. When an arrhythmia causes the heart to stop beating, a patient suffers a cardiac arrest. Causes of cardiac arrest include: coronary heart disease, heart attack, electrocution, drowning or choking.

Without medical attention, the patient will die within a few minutes. People are less likely to die if they have early cardiopulmonary resuscitation (CPR) and defibrillation, which means delivering an electric shock to restore the heart to its normal rhythm. Electrical defibrillation is the only effective therapy for cardiac arrest caused by ventricular fibrillation.[1]

Every year, more than 100,000 people in England alone die from cardiovascular disease[2] and 83,000 across the UK die of a heart attack[3]. Around 30,000 people each year have a cardiac arrest outside of hospital[4].

Survival rates for patients who suffer cardiac arrest decrease by 10% with every minute that passes. Chances of survival are optimised through rapid intervention including defibrillation within 4-6 minutes. After that time brain damage begins to occur.[5]

[1] NIH: National Heart, Lung and Blood Institute, viewed 1 February 2013, http://www.nlm.nih.gov/medlineplus/cardiacarrest.html
[2] Boots Health, viewed 4 February 2012, http://www.webmd.boots.com/heart-disease/guide/automated-external-defibrillators
[3] British Red Cross, viewed 11 February 2013, http://www.redcross.org.uk/About-us/Media-centre/Press-releases/2012/November/Lifesaving-fundraisers-coming-to-a-street-near-you
[4] St John Ambulance, 11 February 2013, htt://www.sja.org.uk/sja/training-courses/training=news/guide-to-defibrillators.aspx
[5] The DeFib Centre, viewed 8 February 2013, http://www.thedefibcentre.co.uk/defib_work_place.htm

2.0 What is the Council's Current Provision

2.1 Legislative requirements

Requirements for first aid provision in the work place are set out in the Health and Safety (First Aid) Regulations 1981.

The legislation provides guidance on:

- Managing the provision of first aid (first aid kit, equipment, rooms, etc.)
- Requirements and training for first aiders
- Requirements for appointed persons
- Making employees aware of first aid arrangements
- First aid and the self-employed
- Cases where first aid regulations do not apply

2.2 Current cover

The council has arrangements in place to meet the requirements of the regulations with first aid provision (equipment and 19 staff) at suitable locations. Defibrillation equipment is not covered by nor specified within the regulations.

In the event of a cardiac arrest on site, first aiders would be relied on to give CPR while awaiting a response which would be provided by East Midlands Ambulance Service and the Lincolnshire Integrated Voluntary Emergency Service (LIVES).

The breakdown of first aiders across the organisation is as follows:

Location	Section(s)	Number of trained staff
Main offices	Customer Services Housing Management Revenues & Benefits Property Services	3 1 1 2
		Total 7
Guildhall Arts Centre	Cultural	5
Bourne Community Access Point	Leisure & Amenities	1
Markets	Leisure & Amenities	1
CCTV	Community Safety & Licensing	1
Depot	Waste & Recycling	2
Miscellaneous	Property Services	2

First aiders have all completed a first aid at work certificate. This is refreshed every three years.

During the group's interview with the district council's Environmental Health Services Manager, Mr Price advised the group that records showed a very small number of incidents that required the attendance of a first aider (one incident each year between 2009 and 2011).

The working group learned that while there was no category for recording cardiac incidents within health and safety statistics there were no recorded incidences of heart attacks. Excluding the leisure centres, there were no reports of cardiac arrests at council-operated venues between 2008 and 2013.

2.3 Beyond the legislation

A number of individuals from whom the working group received evidence challenged legislative provision and gave an analogy between defibrillators and fire extinguishers. They stated that fire extinguishers were required by law yet the risk of being killed by a fire was lower than suffering a cardiac arrest.

An e-petition created by the Oliver King Foundation, which called for the Government to take action on Sudden Adult Death Syndrome, included a request that the Government introduce defibrillators to all public buildings by 2017. When it closed on 10 February 2013 the petition had received 110,657 signatures. As the petition achieved over 100,000 signatures it would be debated by the House of Commons Backbench Business Committee. The issue was debated on 25 March 2013 where a resolution for the Committee to further consider the question was agreed.

A government response was also supplied by the relevant government department, which included:

"With regard to providing defibrillators in all public buildings, the National Defibrillator Programme, which was coordinated by the Department of Health from 2000, began placing automated external defibrillators in public places. From February 2007, responsibility for continuing the legacy of the National Defibrillator Programme was devolved to ambulance trusts. Most of the ambulance trusts across the UK have community resuscitation departments or similar, which work to place defibrillators in the community, and in areas of need."[6]

[6] The Oliver King Foundation – SADS (2013) HM Government e-petition, viewed 22 February 2013, http://epetitions.direct.gov.uk/petitions/29399e-petition

Section 3 of this report will include investigations into static automatic external defibrillators and the community schemes which run alongside the Ambulance Trust.

3.0 Community Provision

3.1 What are the different community defibrillator schemes?

The group's research identified several different examples of community defibrillator schemes.

- LIVES-style first responder schemes where volunteers provide cover in their local communities
- Arrangements within individual organisations (e.g. business, school, college, etc)
- Public access defibrillators: defibrillators positioned at strategic points in public places (e.g. airports, railway stations and villages, town and city centres)

3.2 LIVES First Responders

The Lincolnshire Integrated Voluntary Emergency Service (LIVES) is a collection of medics and first responders who volunteer their time to respond to emergencies in their communities.

When a 999 call is placed, the LIVES medic or responder on call in the area will receive notification of incidents when an ambulance is despatched. LIVES responders attend patients with breathing difficulties, strokes, heart attacks, collapse, chest pain or cardiac arrests and provide basic life support before the ambulance arrives.

LIVES aims to support First Responder groups in every community in Lincolnshire. They are managed by an elected local co-ordinator and plan their own on-call rota.

A minimum of five volunteers is required to set up a scheme. Ideally every community would have 24-hour cover 365 days a year but this might not be possible if there are only a few volunteers. The group established through its interviews that it was often harder for Community First Responder groups to provide cover during working hours, because many of the volunteers would themselves be working.

It costs approximately £4,000 to train and equip a group of volunteers. First Responder training is carried out over three days covering all the skills a first responder would need including basic life support and use of a defibrillator. Training is provided by experienced trainers and reflects the best of current first aid and emergency care practice in the UK. Each first responder has to complete written and practical tests and must undergo annual requalification.

On 25 April 2013, the LIVES website reported that there were 158 First Responder groups operating throughout Lincolnshire with 20 groups in South Kesteven (Allington, Barkston, Bourne, Carlby, Caythorpe and Fulbeck, Claypole, Colsterworth, The Deepings, Folkingham, Grantham East, Grantham West, Langtoft, Long Bennington, Morton, Pontons, Ropsley and Welby, South Witham, Stamford West, Swayfield and Woolsthorpe by Belvoir).

During its evidence gathering, the working group discovered that North Kesteven District Council had three staff members who were trained as LIVES responders who formed a local scheme. Defibrillation equipment is kept within the Council Offices. The authority makes provision for those staff members who are First Responders to attend emergencies off-site.

3.3 Arrangements within individual organisations

Some organisations have defibrillators on-site for use within that organisation including larger businesses, schools and colleges (including Grantham College). Also of note was the defibrillator kept for use at the Meres Leisure Centre, Grantham.

3.4 Public Access Defibrillators (PADs)

Representatives from LIVES identified Heathrow Airport as an example of a good practice in respect of public access defibrillator scheme; LIVES representatives cited a survival rate of 76%. Automatic External Defibrillators (AEDs) were placed at the airport so that wherever a patient might be, they would be within two minutes of a defibrillator.

Similar arrangements are made in railway and underground stations. A number of European countries were cited where defibrillators are placed in public squares and buildings. In this country, there are increasing numbers of rural villages which have publicly accessible defibrillation equipment.

The Community Heartbeat Trust, a national charity focused on provision of defibrillation services to local communities, is approaching parish councils within the district. They support the locating of defibrillation equipment in a range of public spaces including disused telephone boxes, on the side of village halls, sports pavilions and pubs.

Examples of public access defibrillators within the district include Pickworth and Colsterworth with Folkingham and Sapperton both interested in PADs.

3.5 Community provision V public access defibrillators

While it is difficult to quantify the impact of defibrillation on survival rates, a number of studies have shown a positive correlation. The Public Access Defibrillation trial which covered 24 sites in the USA and Canada between July 2000 and September 2003 attempted a direct comparison of the application of CPR against CPR with defibrillation by varying the treatment provided across the test sites. The percentage of patients who survived to discharge from hospital was higher when a combination of CPR and defibrillation was used (14 of 97 (14.43%) patients in the CPR only group opposed to 29 of 139 (20.86%) patients in the CPR and defibrillation group)[7].

In a study which ran from April 2000 to November 2002 on the Department of Health's National Defibrillator Programme, Whitfield *et al* reported that "[t]he 25% observed survival was appreciably higher than is generally obtained with out-of-hospital cardiac arrests treated by conventional ambulance systems."[8] In this study resuscitation was considered successful if a patient was discharged alive from hospital.

A clinical paper by Colquhoun *et al* (2008) further compared the rate of resuscitation when defibrillation was applied in a number of different circumstances including by laypeople using static automatic external defibrillators and mobile defibrillators by community responders.

Table 1 at appendix 1 to the report shows the outcome in three groups of patients defined according to responder and location. It demonstrates that a patient's survival rate is improved in circumstances when a defibrillator is used (from an average of 1.6% when no shock is applied to 18% when a shock is applied).

The table also shows a correlation between the response and the survival rate; the faster defibrillation occurs, the greater the chance of survival. When a shock is applied by a first responder in the home, the survival rate achieved in the study was 5.1%. A shock applied by a first responder outside the home saw the survival rate increase to 9.8%. When a shock was delivered using an on-site external defibrillator the survival rate in the study rose to 30.5%.

The investigation highlighted the importance of fast reactions as "regardless of whether shocks were given, more patients attended by on-

[7] Nichol, G *et al* (August 2009). Cost-effectiveness of Lay Responder Defibrillation for Out-of-Hospital Cardiac Arrest. *Annals of Emergency Medicine.* **Volume 2** (no. 2), pages 226-235.
[8] Whitfield, R *et al* (2005). The Department of Health National Defibrillator Programme: analysis of downloads from 250 deployments of public access defibrillators. *Elsevier.* **Resuscitation 64**, pages 269-277.

site personnel achieved ROSC [return of spontaneous circulation]…or survived…than when attended by CFRs (Community First Responders) with mobile AEDs outside the home."[9]

Colquhoun's research also concluded that "The results were very much better when the AED was immediately available as part of the on-site strategy than when it had to be transported to a patient...For the on-site strategy to be effective, there must be a considerable density of units in the vulnerable area. Inevitably the chance of any one AED being used is small but if it is used then the chance of success is high. In the 'mobile' strategy the number of units required is relatively small, they tend to be used more frequently, but with appreciably less success."[10]

All three studies indicate that a fast response by lay individuals "on the ground" can lead to increased likelihood of resuscitation and a better long-term prognosis than relying on community response schemes. The working group's investigation of the LIVES organisation highlighted that the voluntary nature of the organisation meant that a response could not be guaranteed 24 hours a day, 7 days a week. The working group considered whether this could provide sufficient cover for all of the District Council's activities from the day-to-day running of the council offices to out-of-hours activities at the arts centres.

Conclusion

Having considered the importance of early intervention following a cardiac arrest, the working group was convinced of the benefits of defibrillation and the importance of having access to defibrillators on-site.

While the working group understood that current first aid provision within the authority fulfilled statutory requirements they did not feel that relying on a response from LIVES, which was a voluntary organisation without 24/7 cover, was sufficient.

The working group agreed that the next stage of its investigation should look at the possibility of installing defibrillators in Council building and the costs and practicalities associated with that.

[9] Colquhoun, M.C. (2008). A national scheme for public access defibrillation in England and Wales: Early results. *Elsevier.* **78**, pages 275-280
[10] Ibid.

4.0 About defibrillators

4.1 What different types of defibrillators are there?

An automatic external defibrillator is a portable device that can check the heart rhythm, diagnose arrhythmias and, where needed, shock the heart into a normal rhythm.

4.2 How do they work?

Two electrode pads are placed on a patient's bare chest. The AED will analyse a patient's condition; during this period it is important that nobody touches the patient. If the patient's heart is in a shockable rhythm the system will charge in preparation for giving a shock (the two heart rhythms that are shockable with automatic external defibrillators are ventricular fibrillation and ventricular tachycardia). The device will tell the user to ensure no one is touching the patient and deliver the shock. A voice prompt will tell the user to resume CPR immediately after the shock for a period of two minutes, then there will be further analysis of the patient and the administration of further shocks as required[11].

Similar prompts are given by semi-automatic external defibrillators however human intervention is required to initiate a shock at the device's instruction.

4.3 What training is needed?

LIVES trains its first responders in basic first aid and life support over three days. Representatives stressed that it is not essential for an individual to receive training in order to use an AED. However they advised that a key element of their half-day training concentrates on building confidence.

St John Ambulance provides a comprehensive 4-hour introductory course which should be renewed at a 2-hour annual refresher training session.

The Department of Health community defibrillator scheme incorporated a 4-hour basic life support training session for all lay-volunteers[12].

In Scandinavian countries school programmes teach children how to use defibrillators from an early age

In illustrating how simple AEDs were to use, the representatives explained that at public events they would call on children from the

[11] Resuscitation council (UK), accessed on 8 February 2013, http://www.resus.org.uk/pages/GL2010.pdf
[12] Colquhoun *et al* (2008) *op cit*

audience to carry out demonstrations. LIVES also ran training sessions on defibrillator use in conjunction with local secondary schools.

4.4 How often does training need refreshing?

Training is not considered essential by LIVES representatives in order to use defibrillators.

The Council staff's first aid training is refreshed every three years. If SKDC used LIVES as the provider for first aid at work training and purchased defibrillators, then the sessions would include the use the equipment.

The training provided by St John Ambulance is certified for one year, after which a delegate must complete a refresher course to keep their certification current.

4.5 What is the shelf-life of a defibrillator?

Defibrillators need updating regularly to make sure they meet the latest requirements. Representatives from LIVES informed the working group that equipment can be kept current through software upgrades, which they can provide at little or no cost when defibrillators are purchased from them.

4.6 What are their maintenance requirements?

When LIVES representatives gave evidence to the working group, they explained the processes for checking the equipment. The machine performs self-checks on a daily basis during the night. A warning light and audible tone provide an alert to indicate any maintenance issues. They also explained that as part of the checks, the machines would partially charge weekly and fully charge on a monthly basis. If SKDC agreed to introduce defibrillation equipment in its offices, it would be the responsibility of the staff to check and maintain the equipment.

4.7 What consumables are needed?

- Pads – These are single use and need replacing on a regular basis to ensure sufficient adhesion. Pads have a shelf-life of approximately two years before they lose their adhesiveness. Pads should not be used if they exceed their use-by dates.
- Batteries – AEDs can be purchased with chargeable or non-rechargeable batteries.
- Packs – LIVES recommended keeping a pack with a razor, pocket mask and absorbent cloth with the defibrillator.

Conclusion

Members of the working group agreed that a fully automatic external defibrillator provided the best option for treating a patient and providing confidence and reassurance for the user.

5.0 Costs

5.1 How much does a unit cost?

The representatives from LIVES informed the working group that a fully automatic external defibrillator would cost £1,350 if purchased through them. Training was included in the cost. Each defibrillator purchased would generate approximately 12 training spaces. The working group noted that if purchased through LIVES, there would be discounts for buying in quantity.

St John Ambulance also offers defibrillator packages that include training:

	Description	Price*
Package 1	Defibrillator, carry case, responder kit plus training for 1 person on a scheduled 4-hour comprehensive starter course	£1195
Package 2	Defibrillator, carry case, responder kit plus training for up to 8 people on a 2-hour AED refresher course (delegates must have completed the 4-hour comprehensive starter course)	£1495
Package 3	Defibrillator, carry case, responder kit plus training for up to 8 people on 4-hour comprehensive starter course	£1695

**Prices listed on website from 2012*[13]

5.2 How much does training cost?

Examples of AED packages that incorporate training in their price are detailed above.

If the authority decided to purchase defibrillators from a different supplier places could be booked on specific courses not associated with the packages. St John Ambulance runs a 4-hour comprehensive training course which costs £95 per person and an AED 2-hour requalification course which costs £55 per person. Prices are based on delegates attending scheduled courses rather than specific sessions for the authority delivered on-site.

One option to train staff on-site became apparent during the group's interview with Michael Chester, who advised that he was trained to teach people how to use defibrillators.

[13] St John Ambulance, accessed on 7 May 2013, http://www.sja.org.uk/sja/training-courses/training-news/guide-to-defibrillators.aspx

5.3 What are the ongoing costs?

With the exception of consumables, the primary potential ongoing cost is any software upgrade. There would also be small costs associated with ensuring defibrillators were action-ready, as they would require a constant trickle charge of power.

5.4 How much do consumables cost?

The different consumables required were:

- Pads (shelf-life 2 years) - £25
- Single-use battery (battery life approximately 2 years) - £250
- Rechargeable battery (battery life 5-7 years) – £1,000.

LIVES representatives recommended that single use batteries provided better value for money than re-chargeable batteries.

5.5 Is there any grant funding available?

The working group could not find any grant funding that would cover defibrillator provision for the organisation. A number of websites sign-posted the British Heart Foundation as a potential grant funder however there was no information on active schemes to which the authority could apply.

It was noted however, that funding may be available for community defibrillator schemes. If the Council agreed to set up a community responders scheme like North Kesteven District, through which officers would attend off-site incidents, funding may be available and equipment would be available for use by those responders on-site.

5.6 Leasing an AED

One alternative to purchasing an AED is rental. Preliminary research identified two companies that would hire AEDs, both for one-off events, or longer-term leases.

Elite Medical Group hires AEDs for £20 a week (£1,040 per annum), including an annual maintenance check, general maintenance including repair should a fault be identified[14]. The Council could seek to negotiate an improved rate for a longer-term lease.

Bull Products provides a number of different lease agreements. The longest available lease is three years. The package featuring the Zoll AED

[14] Elite Medical Group accessed 7 May 2013. http://www.elitemedicalgroup.co.uk/rent-a-defibrillator/

costs £39.80 a month (£477.60 p.a.) and the package featuring the Life Point Pro AED costs £26 a month (£312 p.a.)[15].

If the Council was to hire defibrillation equipment, it would still be responsible for the cost of the pads. If a hired defibrillator was used, it would be collected and replaced with a new machine. Data within the old machine would be studied thoroughly.

[15] Bull Products accessed 7 May 2013. http://www.defibrillatoruk.co.uk/products/defibrillator-rental/rental-packages.php

6.0 The practicalities of implementing a defibrillator scheme at SKDC

6.1 Would first aid trained staff use a defibrillator?

The Environmental Health Services Manager raised concerns that staff might be reluctant to use a defibrillator and those staff members who were first aiders might not want to be charged with the additional responsibility. The working group decided to investigate this by carrying out questionnaires with first aid trained members of staff.

The working group sent out questionnaires to first aid trained staff within the authority to which ten responses were received. The length of time for which individuals have been first aiders varies from 1 month to 16 years. 9 out of the 10 respondents had applied their first aid training, 8 of whom were confident in its application. When asked about defibrillators, two respondents stated that they had received training on the equipment, with one using a defibrillator in a real-life situation.

The first aiders were asked whether they would be interested in being trained to use defibrillators, 6 said they would, 2 said they would not (one of these two said they would not be refreshing their first aid certificate). Of the respondents, 2 expressed concerns about whether they were insured to treat members of the public in addition to staff. The respondents who were supportive of the introduction of defibrillators agreed that their introduction would be worth it as they could save someone's life. 2 respondents said they were prepared to train but expressed apprehension about the possibility of using defibrillators.

6.2 Feedback from Leisure Connection Staff

The working group interviewed Michael Chester who was the Operations Manager for Grantham Meres Leisure Centre. He explained that the leisure centre had a defibrillator on site. A risk assessment identified the potential usefulness of a defibrillator because of some users' vulnerability as the centre operated a GP referral scheme.

The defibrillator at the Leisure Centre had been use once in 18 months by an on-duty lifeguard. In this instance resuscitation was successful (the patient was taken to hospital and subsequently discharged).

6.3 Is there a risk to staff of litigation? Is there any case law?

Colquhoun *et al* briefly considered the risk of litigation. They highlighted that there was no legal impediment under UK law that would protect lay-users, highlighting 'Good Samaritan' legislation, exemplified by the USA and Canada. While there is an absence of legislation to protect the user of

a defibrillator, the conclusion is drawn that "the present legal climate...makes it very unlikely that an operator or their responsible organisation could be sued for consequences arising from responding to an emergency in a PAD [public access defibrillator] scheme."[16]

Cardiff University Health Centre published a number of considerations to determine the need for defibrillators on campus which included legal implications. They surmised that a person who attempted resuscitation would only be liable "if negligent intervention directly causes injury which would not otherwise have occurred or if it exacerbates an injury."[17] There was some concern in the paper that a rescuer may be held liable for substantial damages if the standard of care he or she employed fell below that which could be expected of him/her in the given circumstances, whether a trained or lay-person. Conversely the working group considered that failure to take action could also lead to litigation.

The working group asked for advice from the Legal and Democratic Services Manager in respect of potential liability in relation to CPR and AEDs. His response explained that the same areas of legal liability arose with traditional methods of resuscitation as with defibrillation. Three areas of common law were highlighted: trespass to the person on the grounds an intervention constituted a battery to the victim, negligence for breach of duty of care to them and liability for assault in criminal law. This would mean that a claim could be brought either by the victim or, in the event of their death, by their estate. If the actions of the rescuer led to serious personal injury or death the court could order them to pay damages by way of compensation.

A person who attempted resuscitation would only be liable in a claim of negligence if the intervention left a patient in a worse position than he would have been had no action been taken. This would include directly causing injury which would not otherwise have occurred or exacerbating an injury. It is more easily envisaged how intervention of a rescuer using traditional resuscitation methods might potentially leave a patient worse off than using an AED. For example inappropriate administration of chest compressions can cause damage to the chest wall or organs.

In addition to the rescuer, third parties could also be held responsible under the law and would include those who train rescuers, those who provide and maintain the equipment and those who administer the system under which the rescuers operate.

Consideration was also given to whether the Council could be found potentially liable by not providing AEDs. Under English Law there can be liability in negligence for failing to provide appropriate safety precautions

[16] Colquhoun (2008) *op cit.*
[17] Judge, J (May 2009) Cardiff University Health Centre

on premises. An employer is also under a statutory duty to provide first-aiders in the workplace for the benefit of his employees under the Health and Safety at Work Act 1974 and subsequent Health and Safety (First Aid) Regulations 1981. As previously stated, the Council fulfilled its statutory responsibilities.

Before the introduction of defibrillation equipment, an assessment would need to be made which considered the potential benefit against likely harm, recognising the profile of users of that facility and how likely they are to have a cardiac arrest.

The representatives from LIVES brought an additional risk to the working group's attention; if a patient was treated with consumables that were out of date, relatives may be able to make a successful claim if the patient cannot be resuscitated.

6.4 Are staff insured to use a defibrillator?

The working group interviewed the Council's Governance and Risk Officer about insurance. She confirmed that first aiders were insured to treat staff and members of the public. She added, having spoken to the Council's underwriters, that if the working group recommended acquisition of defibrillators, a risk assessment would need undertaking but their use on staff and customers would be insured. The preference of the underwriters was that first aiders trained in the use of the equipment provide treatment, however if an untrained member of staff was required to treat a patient with a defibrillator, they too would be insured.

Conclusion

The working group identified a number of different means through which the Council could acquire defibrillators. An assessment into the most appropriate arrangements to provide cover for the authority would need considering taking account of one-off and ongoing costs.

As a response to comments made by the Environmental Health Services Manager, the working group discovered a general willingness amongst first aiders to train in defibrillation. Follow-up work on liability and insurance raised no greater concern than the risks associated with CPR.

7.0 Recommendations

1. That the Council install automatic external defibrillators in its buildings across the district (Grantham offices, area offices, Bourne Community Access Point, arts centres and the Alexandra Road depot). The quantity and location should be determined by site surveys of each building.

2. LIVES should be invited to make a presentation to a full Council meeting to raise awareness of the organisation

3. LIVES should be invited to run a drop-in session for staff to raise awareness of the organisation and try and identify individuals who could become community first responders

4. LIVES be considered as the provider for South Kesteven District Council's first aid training courses

Appendix 1

Table 1: Outcome in three groups of patients defined according to responder and location

Responder	No. (%)	Patients shocked			Patients not shocked		
		No. (%)	ROSC* no. (%)	Survival no. (%)	No. (%)	ROSC no. (%)	Survival no. (%)
On-site automatic external defibrillator	437 (28.6)	347 (79.4)	163 (47.0)	106 (30.5)	90 (20.6)	7 (7.8)	7 (7.8)
First responder outside home	255 (16.7)	132 (51.8)	37 (28.0)	13 (9.8)	123 (48.2)	8 (6.5)	1 (0.8)
First responder at home	838 (54.8)	256 (30.5)	45 (17.6)	13 (5.1)	582 (69.5)	20 (3.4)	5 (0.9)
Whole group	**1,530**	**735 (48.0)**	**245 (33.3)**	**132 (18.0)**	**795 (52.0)**	**35 (4.4)**	**13 (1.6)**

*ROSC defined as return of spontaneous circulation on leaving scene

Information extracted from Colquhoun, M.C. (2008).

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