



From The Managing Director

Thanks for expressing an interest in learning more about Life-Saving AEDs and the current state of play with regards to the law and liability. We unapologetically promote AED adoption. They save lives and we wish that they were everywhere. Let me be very clear though that the current law and guidelines don't mandate that to be true and we would never misrepresent that situation with our customers.

This paper aims to provide clarity to organisations with regards to their obligations and the implications should they choose to make AEDs a part of their safety regime or not. There is already some excellent commentary from various groups, some like us with an agenda for AED promotion, others like Michael Eburn an independent legal expert who has a focus on this area. This is not a definitive work. We refer to and build on these bodies and Michael's work and we encourage you to read them in detail if the topic is of further interest. The motivation for this work came from working with a great many customers who were unclear on their obligations with regards to AEDs and workplace safety. The two greatest cause for concern were the following untrue beliefs.

- **UNTRUE BELIEF NUMBER 1 - The guidelines don't say I must have an AED, so they're saying I don't need one – They don't**
- **UNTRUE BELIEF NUMBER 2 - Having an AED may make my liability or risk position worse – It won't**

We feel that there is a compelling case that having an AED at your workplaces is represents the best practice implementation of your obligations, but we also respect that some organisations can't afford or indeed don't want to achieve best practice. If that's you there is also some information in this paper on what might be reasonable reasons not to include AEDs at your workplace and what type of workplaces those reasons would be more viable than others.

Thankfully while all these issues are being debated businesses and community organisations are learning more about AEDs, seeing their cost decrease and are choosing to install them at an unprecedented level. There is still a long way to go though and I genuinely hope this document helps make you more confident in whatever your existing regime is, or to select a strategy that is best for your organisation moving forward.

Kind Regards

Ben Cannon
Managing Director Corporate AED Solutions and theDEFIBwarehouse

©Copyright Corporate AED Solutions 2019

Automatic External Defibrillators:

Effectiveness, Liability, and Duty of Care

Executive Summary	3
History	4
Background	6
The Research	10
Scope	10
Survival Rates	11
Field Research	12
The Workplace	14
AEDs and WHS	16
Risk Assessment	17
Are AEDs Mandatory?	18
Boland Review	20
Ease of Use	21
Maintenance and Monitoring	22
Cost/Benefit	23
Risk Reduction and Compensation	23
Reputation and Social Responsibility	23
Training	24
Liability and Risk	24
First Aiders	24

Employers	26
Additional Information and FAQ	29
Quality of Devices	29
Frequently Asked Questions	30
How Many AEDs Do I Need?	30
What if Someone Nearby Already Has One?	30

Executive Summary

Sudden Cardiac Arrest (SCA) is Australia’s biggest killer. An average of 30,000¹ lives per year are claimed by SCA, with survival rates flagged as worryingly low. It is noteworthy that an average of 56 fatalities per year from fire related incidents prompted a legislative change mandating the installation of smoke alarms, whereas a much larger incidence of fatalities from SCA has yet to prompt a similar response. Automatic External Defibrillator (AED) installation has repeatedly been flagged in submissions to government as being the most effective response, with the survivability of cardiac arrest being shown to increase by two to three times with early intervention using an AED.

This paper seeks to investigate the efficacy of AED installation as a response to these risks. A consideration of statistical and social research on this subject will be undertaken, as well as an appreciation of the various social, legal, and commercial aspects of AED installation and use, with a primary focus on the nexus between liability, duty of care, and social responsibility.

¹ Safe Work Australia Submission: <https://engage.swa.gov.au/32134/documents/77363>
©Copyright Corporate AED Solutions 2019

PART 1

DEFIBRILLATION – HISTORY AND BACKGROUND INFORMATION

This part contains a brief introduction to the history and domestic and international context surrounding AED technology, as well as a precis of the current epidemiology of Sudden Cardiac Arrest.

History

Defibrillation has a surprisingly long history, with experiments in cardiac recovery in both animals and humans stretching back nearly to the first harnessing of electricity in the mid-eighteenth century².

Fibrillation, or very rapid irregular contractions of the muscle fibers of the heart resulting in a lack of synchronism between heartbeat and pulse, has been an observed phenomenon for at least two centuries, and scientists were quick to ascertain the link between this condition and electricity. In the nineteenth century, the Royal Humane Society commissioned one of the earliest studies into the use of electricity to prevent death from fibrillation and the techniques which they described and recommended look uncannily like contemporary interventions³.

“When the several measures recommended above have been steadily pursued for an hour or more, without any appearance of returning life, Electricity should be tried... Moderate shocks are found to answer best, and these should, at intervals, be passed through the chest in different directions, in order, if possible, to rouse the heart to act.”⁴

² Bianchi G. Réponse à la lettre du Docteur Bassani. JM éd 1756;4:4

³ Kite C. An Essay on the Recovery of the Apparently Dead. London: C. Dilly, 1788:166

⁴ Stillings D. The first defibrillator? Med Prog Technol 1974;2:205–206

The middle of the twentieth century, especially the period during and post World War II, saw the emergence of standardised and mass produced internal and external closed chest defibrillators. American scientist William B Kouwenhoven, having spent his college years as a labourer wiring houses for the transition to electric power, observed the relatively frequent phenomenon of workers dying from fibrillation induced by electrocution. His interest in the connection between cardiac function and electricity remained with him as he entered Johns Hopkins University and eventually led to the most fruitful of the many research projects associated with defibrillation which have taken place over the last few centuries⁵. It is largely to Kouwenhoven that we owe the modern external defibrillator⁶.

This long and storied history demonstrates that defibrillation is a mature and demonstrably effective form of medical intervention. Beginning as an experimental conceit associated with Romantic Triumphalism's quest for immortality⁷, and developing into a serious life-saving pursuit tested first in the Royal Humane Society's mission to eradicate preventable deaths⁸, and then later in the crucible of World War II, when hospitals evolved into their final form as venues for critical health intervention⁹, defibrillation and its associated technologies have been repeatedly refined and proven over a period which spans several centuries¹⁰.

⁵ Kouwenhoven W, Hooker DR. Resuscitation by countershock. *Electrical Eng* 1933;52:475-477

⁶ Cavagnaro, Louise, and Barbara J. Kiviat. "Simply CPR." *Johns Hopkins Magazine* Apr. 2000

⁷ Schechter DC. Early experience with resuscitation by means of electricity. *Surgery* 1971;69:360-372

⁸ Kite C. *ibid.*

⁹ Jeffrey K. Pacing the heart: growth and redefinition of a medical technology, 1952-1975. *Technol Cult* 1995;36:583-624

¹⁰ *Ibid.*

Background

Sudden Cardiac Arrest (SCA) is defined by most medical researchers as cardiac incidents which occur outside a hospital or emergency room¹¹. SCA accounts for between 15-25% of global deaths¹². Given the extraordinarily large share of global mortality attributed to this single cause, developed nations have invested heavily in research and epidemiology and implemented varying legislative and regulatory frameworks accordingly.

The US Federal government has acted to encourage a 'chain of survival' approach in place with good samaritan legislation enacted to protect AED users. The basic principle of the 'chain of survival' is that emergency first responders become part of a longer chain of response, with early intervention provided by means of first aiders and AEDs. The rationale, as stated in the American Heart Association's report on Emergency Cardiac Care¹³, is that emergency service providers alone are insufficient for the optimal prevention of SCA deaths. The key recommendations cited both in this committee's findings, and amendments to federal law (see below) are:

1. Adopt the principle of early defibrillation.
2. Develop community-wide education and publicity programs that focus on cardiac emergencies and a proper response by citizens.
3. More widespread use of automated external defibrillators by community responders and allied health responders¹⁴.

Further to this, the installation of AEDs has been made mandatory in all Federal buildings under the Cardiac Arrest Survival Act (2000)¹⁵. As part of the development of this legislation, compelling evidence was presented to the House Committee responsible for approving and drafting the bill.

¹¹ Hayashi et al. The Spectrum of Epidemiology Underlying Sudden Cardiac Death: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4929621/>

¹² Berdowski J, Berg RA, Tijssen JG, Koster RW Resuscitation. 2010 Nov; 81(11):1479-87

¹³ <https://www.ncbi.nlm.nih.gov/pubmed/1344085>

¹⁴ Ibid.

¹⁵ <https://www.congress.gov/congressional-report/106th-congress/house-report/634/1>

The following accounts are drawn from testimony recorded by the House Committee¹⁶.

¹⁶ Ibid.

Mr. Robert T. Adams, Esq., testified that he had been in perfect health, as certified by numerous doctor examinations for his part-time work as an NCAA basketball referee, when he was victimized by a sudden cardiac arrest at Grand Central Station.

He testified that he probably would not be alive today if the station had not purchased an automated external defibrillator just one day before, which was used to save his life while emergency medical services personnel were in transit.

Richard Hardman, Ph.D., NREMT-P, and EMS Training Coordinator for the Clark County Fire Department, testified at the May 9th hearing that after widespread placement of AEDs and implementation of AED training in Las Vegas casinos, survival rates for sudden cardiac arrest increased from less than 10% to an astounding 57%. Other experts estimate survival rates increasing to 30--40% where victims have access to immediate medical response including defibrillation [...].

Mr. Lazar testified that: "We are not seeing [AEDs] widely deployed, notwithstanding their ease of use, their relatively low cost, and the clear public health interest in them being widely deployed. One of the critical reasons why that is is because there is this perception among would-be purchasers and users of AEDs that if they do this they are going to get sued. Now, statistically, and if you look in the courts, that is not really justified. But you know what, perception is reality, and perception is, indeed, creating a huge barrier to the widespread deployment and adoption of AED programs."

The report goes on to encourage the Federal Government to be "an example to private industry" in the implementation of defibrillation programs across all government installations¹⁷.

The Australian government's response has been less prescriptive than the US, with Work Health and Safety Regulations requiring that individual risk assessments be undertaken by employers in order to determine which safety equipment, above a mandated minimum benchmark, be installed.

A challenge this presents to Australian health and safety professionals is twofold. There is firstly a question of how to meaningfully assess the risk of an occurrence as lethal and widespread as SCA. Identification of specific risk factors associated with cardiac arrest can be a complex process. Statistical considerations with respect to micro-population densities in various environments, high or low risk activities, employee

¹⁷ <https://www.congress.gov/congressional-report/106th-congress/house-report/634/1>
©Copyright Corporate AED Solutions 2019

and visitor demographics, and a whole host of other considerations must be taken into account, which process can initially seem intimidating and exhaustive, especially considering the nature of the risk being assessed.

Secondly, there is the simple fact of change. Initiatives relating to office or workspace centralisation or decentralisation, the institution of health/sporting programs, change and adaptation in the constitution of workforce demographics and numbers from attrition, rationalisation, or expansion – a workplace is a fluid risk environment, and it can be a serious challenge to create a risk profile which is both sufficiently comprehensive and adaptive.

It is therefore instructive to examine approaches taken by other, potentially allied organisations with regard to the installation of AEDs. Many organisations such as Qantas, Lang O'Rourke, and Railcorp NSW have opted for the installation of AEDs across their sites as a result of their own assessments of risk and duty of care in accordance with WHS regulations¹⁸.

¹⁸ McKell Institute. AEDs on Australian Worksites: A Low Cost Proposal to Save Lives
©Copyright Corporate AED Solutions 2019

PART 2

FACTORS FOR CONSIDERATION IN DECIDING FOR OR AGAINST AED INSTALLATION

This part examines the installation of AEDs from a best practice perspective. Legislative and regulatory requirements are explored, with commentary related to interpretations of the relevant codes and acts.

These perspectives are drawn from a variety of sources, including specialist emergency and safety law experts, but does not constitute legal advice. The aim is rather to provide the reader with a bank of research and data designed to assist with increasing confidence for those considering the acquisition of an AED.

The Research

Scope

Cardiac arrest is 3 times more likely to cause death than all the major cancers combined, 16 times more likely to cause death than a traffic accident, and 300 times more likely to be a cause of death than fire¹⁹. In the case of fires and traffic accidents, a whole raft of mandatory training and equipment measures have been legislatively enforced, and there is a strong and growing movement to bring in similar measures with relation to AEDs. Multiple submissions from prominent health organisations have already been made to government, all of which state their case using the

¹⁹ McKell Institute. AEDs on Australian Worksites: A Low Cost Proposal to Save Lives
©Copyright Corporate AED Solutions 2019

enormous wealth of statistical data and meta-analysis already available in this area.

Survival Rates

The figures linking the use of AEDs to increased survival are both undeniable and dramatic. Intervention with an AED within the first three minutes of cardiac arrest has been shown to triple an individual's survival probability, whereas the same intervention within the first five minutes will double it. The American Heart Association has calculated that survival chances decrease by a minimum of 10% for every minute without AED intervention²⁰.

These statistics are unusually unanimous. The Heart Foundation, Australian Hearts, the aforementioned American Heart Association, and countless other prominent and respectable bodies all agree that by far the most effective intervention is the use of an AED. While they generally join in praising ambulance and other uniformed first responders such as police, they also uniformly point out that even the very best possible wait time for such intervention is a major contributing factor in the staggeringly high fatality rate associated with SCA.

The peculiarly diffuse settlement patterns of Australian population centres mean that any near term significant improvement in first responder wait times is highly improbable.

The Ambulance Service of NSW puts its average response time at between eight and eleven minutes²¹. There is, of course, a very wide range of times across the state. Times will on average be significantly longer in rural and regional areas, and in urban areas at various times or key locations such as the Sydney CBD²².

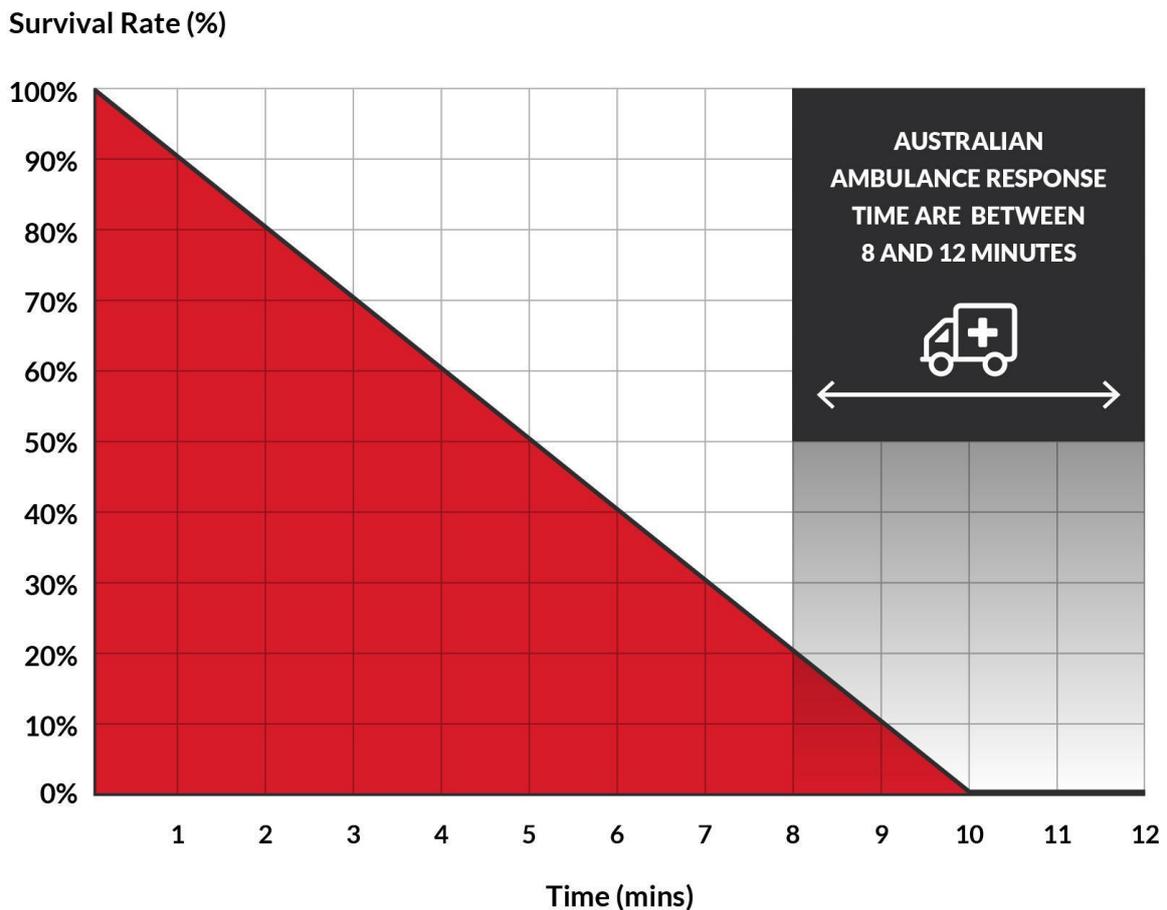
Given that survival probability drops by approximately 10% per minute post cardiac arrest, this would make the survival rate as low as 6%

²⁰ https://www.heart.org/idc/groups/heart-public/@wcm/@adv/documents/downloadable/ucm_301646.pdf

²¹ <http://www.ambulance.nsw.gov.au/Our-Performance/response-times.html>

²² Ibid.

without intervention prior to ambulance arrival. This can rise to 85% survival probability when an AED is applied within the first few minutes²³.



Field Research

Numerous programs aimed at limited implementation of AED for surveillance and evaluation have been run in recent years. One of the largest and most notable is the Seattle “Bystander AED” program, which reported in 2018. The figures from this particular pilot were dramatic. The initial survival rate for what the researchers termed ‘Out of Hospital Cardiac Arrest’ (OHCA) were significantly less than 10%²⁴. A program of AED installations in public places, coupled with staff training and

²³ McKell Institute. AEDs on Australian Worksites: A Low Cost Proposal to Save Lives

²⁴ Pollock et al. Impact of Bystander Automated External Defibrillator Use on Survival and Functional Outcomes in Shockable Observed Public Cardiac Arrests 2018 Feb

awareness initiatives, was rolled out across several counties. The rationale was to increase/create public access to AEDs, increase the number of potential 'citizen responders', comprehensively implement the first and most proximate link in the 'Chain of Survival' model, and then measure the survival and successful/functional hospital discharge rates²⁵.

From an initial survival/discharge rate of less than 10%, OHCA survival was lifted to 66%, and functional hospital discharges to 90-95%²⁶. This means that there was a more than sixfold increase in survival for individuals suffering a cardiac arrest in a public place, and that the vast majority of these people were able to make a full recovery. This is unequivocal evidence that the availability of AEDs dramatically increases the likelihood of surviving a cardiac arrest. An additional factor to consider is the uncontrolled nature of the environments in which AEDs were installed.

The fact that survival rates jumped so dramatically can be seen as testimony to the efficacy of early AED intervention as well as their ease of use. According to the final report:

"After adjusting for known predictors of outcome, the odds ratio associated with a bystander shock was 2.62 (95% confidence interval, 2.07–3.31) for survival to hospital discharge and 2.73 (95% confidence interval, 2.17–3.44) for discharge with favorable functional outcome. The benefit of bystander shock increased progressively as emergency medical services response time became longer."²⁷

This translates to a 95% "confidence rate"²⁸ for the full functional discharge from hospital of an individual who suffers a cardiac arrest and has AED intervention applied by a bystander.

A similar study conducted by the Australian Department of Health and Ageing reached substantially the same conclusions. This particular

²⁵ Ibid.

²⁶ Pollock et al. Impact of Bystander Automated External Defibrillator Use on Survival and Functional Outcomes in Shockable Observed Public Cardiac Arrests 2018 Feb

²⁷ Ibid.

²⁸ Ibid.

program was denominated “Public Access Defibrillation (PAD) Program”. The findings of their initial desktop research revealed the following data relating to PAD Programs elsewhere:

- A study of a PAD program in American airports concluded that 21 persons had suffered an arrest during the two-year project period, of which 62% were successfully resuscitated using an AED²⁹.
- An Italian study compared the use of PAD to traditional EMS treatment for cardiac arrest, a higher survival rate was shown for people treated by volunteers trained to use AEDs compared with EMS services³⁰.
- Only one sizeable randomised control trial was reported (the studies described above were non-controlled observational studies). This American study randomised sites into two groups: one set of sites was provided with CPR training alone (control group), the other with CPR training and training in the use of AEDs (intervention group). The study demonstrated a higher (almost double) survival rate for the intervention group compared with the control group³¹.

The overall survival rate across the public locations in which AEDs were installed jumped from an average of 7% to 66%³². As well as this, responders reported that even in those incidences where a sufferer could not be revived, they “felt reassured that they had at least been able to do everything within their power to assist”³³ despite the distress at being involved in a fatal incident.

The Workplace

29

[https://www.health.gov.au/internet/main/publishing.nsf/Content/14ECB83A6CBA80EBCA257BF0001D3A58/\\$File/padev.pdf](https://www.health.gov.au/internet/main/publishing.nsf/Content/14ECB83A6CBA80EBCA257BF0001D3A58/$File/padev.pdf)

30

[https://www.health.gov.au/internet/main/publishing.nsf/Content/14ECB83A6CBA80EBCA257BF0001D3A58/\\$File/padev.pdf](https://www.health.gov.au/internet/main/publishing.nsf/Content/14ECB83A6CBA80EBCA257BF0001D3A58/$File/padev.pdf)

³¹ Ibid.

³² Ibid.

³³ Ibid.

Workplace SCA incidents can be difficult to track. The US Department of Labor's Occupational Health and Safety Administration (OSHA) undertook a study as part of an upgrade to its reporting and governance framework in 2015. According to the report, they estimated that serious worker incidents involving inpatient hospitalisation and fatalities were under-reported by as much as 50%³⁴, with late reporting being nearly universal.

The report identified that there were several factors in under-reporting, ranging from the simple but relatively rare incidence of criminal non-compliance, to the far more common phenomenon of workers being unaware of reporting requirements or, more frequently, unclear about what exactly constituted a strictly reportable incident³⁵.

It is therefore important to remember that the absolute figures derived from statistical analysis of SCA incidence in the workplace need to be adjusted upward when conducting risk assessment.

This aside, the proportion of workplace incidents of cardiac arrest is significant. Safe Work Australia does not, in fact, record deaths from natural causes, including cardiac arrest, but figures can be confidently derived from meta-analysis of Ambulance NSW statistics. According to Australian Hearts:

"NSW data from 2012 shows that for cardiac arrest calls to Ambulance NSW some 59% were deceased when the ambulance arrived. Approximately a third of calls occurring during working hours and 25% were from a workplace."³⁶

These figures indicate that a significant proportion of cardiac arrest deaths occur in the workplace, which means that employers and safety professionals should calculate for what might constitute a reasonable chance of such an event occurring within their work environment.

³⁴ <https://www.oig.dol.gov/public/reports/oa/2018/02-18-203-10-105.pdf>

³⁵ <https://www.oig.dol.gov/public/reports/oa/2018/02-18-203-10-105.pdf>

³⁶ Australian Hearts. Submission to the 2018 Review of Model WHS Laws 2018 April

©Copyright Corporate AED Solutions 2019

AEDs and WHS

The current model WHS Act states that one of its objects is to

"...protect [...] workers and other persons against harm to their health, safety and welfare through the elimination or minimisation of risks arising at work." It goes on to state that this should be achieved through ensuring that workers are "given the highest level of protection [...] as practicable."³⁷

The current state of the discussion between organisations like Australian Hearts and the government is such that an argument is being put forward that this strongly implies that AEDs should be mandatory, at least in high risk workplaces. The argument, while not clear cut, is a compelling one. Given the ease with which they can be operated – a 100% success rate was achieved with a class of 12 year old children during an American simulation – and their clear and amply demonstrated role in significantly increasing survival rates from cardiac arrest, an interpretation of the phrase 'highest level of protection' practicable as including AEDs is a persuasive one.

The various pilot programs, both domestic and international, have resulted in unequivocal success in significant reductions of SCA fatalities. Couple this with the language of the US Cardiac Arrest Survival Act 2000, where federal workplaces are "encouraged to act as an example to private industry"³⁸ and it might be reasonable to suppose that AEDs are generally considered to be a highly desirable component of workplace safety equipment.

Given this, it can be thought of as reasonable to suppose that an *ideal* workplace configuration in compliance with the 'highest protection' standard would include AEDs.

³⁷ www.safeworkaustralia.gov.au/system/files/documents/1702/model-whs-act-21march2016.pdf

³⁸ <https://www.congress.gov/congressional-report/106th-congress/house-report/634/1>

Risk Assessment

The Worksafe Guidelines are helpful in identifying workplaces at greater risk. Regulation 42 of the Code of Practice provides guidance for hazard identification methodology.

First and foremost, 'high risk work' is defined as anything which involves the use of potentially hazardous chemicals and/or equipment, or work which is conducted in hazardous environments. The Code identifies forestry, construction, and manufacturing as industries which routinely conduct high risk work, but there are also less obvious factors to consider. Isolated work, or late night work is identified as being of greater risk, owing to the increased likelihood of violent incidents, psychological harm (a factor in SCA), or unsupervised activity³⁹.

Traffic and turnover are also identified as risk factors. The Code identifies high turnover and rapid processing⁴⁰ as being more likely to cause harm as these significantly increase the probability of human error. This is especially relevant in enterprises which handle foodstuffs, heavy items, work with electricity, or a host of other potentially hazardous activities.

The full guide can be accessed here:

<https://www.safeworkaustralia.gov.au/system/files/documents/1705/mcop-first-aid-in-workplace-v1.pdf>

These examples and guidelines are not, however, comprehensive. When assessing risk for cardiac arrest, the safety professional must take into account that an SCA can occur for any number of reasons, and that there is no individual who is at zero risk of cardiac arrest. According to the American Heart Association, over 50% of SCA sufferers had no prior indication of a cardiac problem. This means that in terms of their own personal assessment of risk, not to mention formal risk assessments, there were no discernable factors indicating heightened risk of cardiac arrest. Couple this with up to 33000⁴¹ annual cardiac arrest related

³⁹<https://www.safeworkaustralia.gov.au/system/files/documents/1705/mcop-first-aid-in-workplace-v1.pdf>

⁴⁰ Ibid.

⁴¹ McKell Institute. AEDs on Australian Worksites: A Low Cost Proposal to Save Lives
©Copyright Corporate AED Solutions 2019

fatalities in Australia alone, and it can be seen that SCA is, in fact, the country's biggest killer, and capable of striking without warning.

Cardiac arrest can be triggered by electrical transmission, trauma, anaphylactic response, heart attack, or undiagnosed cardiac conditions⁴². The likelihood of cardiac arrest can be increased by stress, acute or unusual exertion or physical activity, high or increased noise levels, stress, environmental factors such as smoke or particulate, and a whole host of other hazards and conditions⁴³.

Given these factors, some key questions for employers are:

1. Do we have a high concentration of workers in a single location?
2. What are the ambulance response times for our location(s)?
3. Is employee/guest/bystander physical exertion a factor?
4. Are there sudden spikes in activity or stress level?
5. Is our enterprise such that high stress/tempo/pressure work is regularly conducted?
6. Have new conditions arisen since our last risk assessment?
7. Do we employ or serve anyone in a high cardiac risk category?

Are AEDs Mandatory?

AEDs are not currently mandatory, but workplaces in which hazardous equipment/substances are present, or where employees and visitors engage in greater risk activities should seriously consider procuring them. In such situations, interpretation of the regulations makes it reasonable to interpret an AED as necessary equipment to meet the standards for worker protection under the act.

Even in lower risk workplaces, the installation of an AED is still best practice, as indicated by the standards set by public installations, offices, and establishments. Having said that, deciding not to install AEDs in accordance with a detailed risk assessment can be reasonably interpreted as still being in compliance with WHS requirements.

⁴² Ibid.

⁴³ Hayashi et al. The Spectrum of Epidemiology Underlying Sudden Cardiac Death: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4929621/>

©Copyright Corporate AED Solutions 2019

The main justifications under law for deciding against AEDs have to do with the element of 'practicable' standards of protection. If a risk assessment found, for example:

- That the total workplace population was minimally small;
- That activity being performed was deemed comprehensively low risk;
- No bystander or other first responders were available (solitary worker workplaces);
- Or that the cost of an AED was prohibitive with relation to the size of the enterprise;

It would then be considered reasonable to decline to purchase AED equipment. This being said, employers and safety professionals must be wary of spurious or invalid reasons to decide against the purchase of lifesaving equipment. Examples of spurious or insufficient arguments⁴⁴ against have been compiled by emergency law expert and barrister, Michael Eburn, and can be found here:

<https://emergencylaw.wordpress.com/2018/12/01/liability-for-installing-or-not-an-aed/>

Boland Review

The Boland Review of Model WHS Law has reported, with recommendations submitted to government for consideration. While it is not possible to predict the outcome of the review, it is worth noting that some of the recommendations point to a more prescriptive approach to the Hierarchy of Controls, with particular reference to the creation of guidance relating to risk mitigation and response⁴⁵.

Contained within the report are two recommendations of note, the first being the creation of a standard or "baseline"⁴⁶ definition of 'reasonably practicable' when it comes to first aid and other equipment. The other recommendation is that more prescriptive or detailed advice should be provided with the risk assessment question, "How can I stop it going wrong?"⁴⁷, as there is no guidance on this within the Model Act⁴⁸.

With this in mind, employers and safety professionals should consider the possibility that government may revise the act to set minimum standards which may remove any ambiguity surrounding the provision of AED access.

⁴⁴ Eburn M PhD. Australian Emergency Law: <https://emergencylaw.wordpress.com>

⁴⁵ Boland M. Review of the Model Work Health and Safety Laws: Final Report

⁴⁶ Ibid.

⁴⁷ Ibid.

⁴⁸ Ibid.

PART 3

FACTORS ARISING FROM AED OWNERSHIP AND USE

This part aims to provide a realistic and accurate assessment of the burdens, costs, and benefits associated with AED ownership and use, as well as an overview of current opinion on legal liability. This part does not contain legal advice, but rather a referenced overview or summary of current open source legal opinion.

Ease of Use

When people talk about defibrillation, the invariable image which springs to mind is of masked surgeons shouting 'Clear!' before applying paddles to an insensible patient while dramatic music plays in the background. This televisual interpretation of defibrillation could not be further from the truth.

Far from being the radical and drastic 'jump start' depicted in medical dramas, defibrillation technology is actually mainstream early intervention, and an integral part of the American Heart Association's widely recommended 'chain of survival' approach to cardiac arrest. Defibrillation works by delivering an electronic pulse to the heart in order to restore normal rhythm.

The key word in AED is 'Automatic'. The unit requires minimal training and is in fact designed to be operated without any training at all. Once
©Copyright Corporate AED Solutions 2019

the simple to operate box is removed from the cabinet and the unit powered up, voice prompts and clear illustrations will instruct the user, in real time, how to apply the contact pads. Once the pads are affixed, the unit then uses its internal sensors to determine whether or not a shock needs to be applied. This means that the only decision the user need make is whether or not to attach the unit in the first place. And given the way it operates, it can reasonably be argued that this decision, in a case of suspected cardiac arrest, can safely be assumed to be the right one.

Maintenance and Monitoring

Organisations do have a duty to properly maintain their First Aid equipment⁴⁹. Given the perceived sophistication of the technology, organisations can sometimes overestimate this particular burden of ownership.

AEDs are actually remarkably simple devices to own. For a standalone unit, the maintenance regime can be as simple as regular checks to ensure that the ops normal indicator (usually a green flashing light) is active, and that no warning tones are being emitted.

Leading devices carry an eight year warranty, with battery and contact pads requiring replacement only once every four years. This means replacement need occur only once during the warranty period. For the majority of units, pad and battery replacement are extremely simple and do not require training to conduct.

Automated maintenance is also available. Monitored units are AED units which are connected to a central communications station via either WiFi or cellular technology. These units will automatically report the readiness and usage status of the device, triggering maintenance alerts as and when required.

⁴⁹Safe Work Australia. First Aid in the Workplace Code of Practice
©Copyright Corporate AED Solutions 2019

Cost/Benefit

Organisations should consider various factors when weighing up the cost of purchasing AEDs. The fundamental question is whether or not an enterprise is willing to outlay a unit cost of approximately \$2500 in order to purchase equipment which could be instrumental in saving the lives of employees and clients. Beyond this simple binary question is a range of other factors influencing the cost benefit balance.

Risk Reduction and Compensation

Real cost considerations need to take into account the potential cost of compensation from workplace fatalities. Safe Work Australia estimates⁵⁰ that the median payout for claims arising from electric shocks (an instance in which defibrillation is highly effective) is \$8700. In cases of serious claims, fatalities, or permanent or temporary incapacitation, the broader 'serious claim' category as calculated by Marcus Punch Pty Ltd is \$500000-\$1000000. As a function of risk offset, AED installation should, in many cases, be considered a potential cost saving.

Reputation and Social Responsibility

While certainly not a primary consideration, there are other benefits which go beyond the simple fact of being involved in the saving of potentially thousands of lives. Local and regional media routinely publish stories notifying their communities of the presence of newly installed AEDs, and this provides strong reputational benefits when it comes to a business' sincere desire to be a good 'social citizen'. AED installation, especially in high risk environments such as gymnasiums or construction sites, where physical exertion can contribute to elevated risks of SCA, is correctly seen as a caring and humane measure.

Additionally, the presence of AEDs has potential benefits with regard to staff maintenance and recruitment. Workplaces and enterprises with AEDs will certainly present as more attractive to potential employees, as there will be an accurate perception that the employer is serious about caring for their people. Such reputational factors can be important when it comes to attracting high quality personnel.

⁵⁰ McKell Institute. AEDs on Australian Worksites: A Low Cost Proposal to Save Lives
©Copyright Corporate AED Solutions 2019

As noted in the aforementioned Australian PAR trial, responders reported psychological benefits even in the case of attending a fatality. This sense of “having done all they can” could potentially result in fewer second and third order consequences arising from a workplace incident, with other employees less affected and less likely to suffer more serious psychological harm⁵¹.

Workplace fatalities – fatalities in general – can be harrowing for those who witness or are involved in them. It is axiomatic that such an incident would be far less traumatic if the fatality was prevented or averted or, if this is not possible, those around the victim knew that everything that could be done was done.

Training

The Code of practice requires that trained first aiders be present in every workplace. The guidance recommends ratios of 1:25 or 1:50 workers receive training, depending on risk category. Of course, additional employees will need to be trained for enterprises which have multiple shifts or varying team configurations to ensure first aiders are present at all times when staff are on site.

Given that first aid training includes AED familiarisation, and that AED machines are designed to be used even by untrained people, there is no actual necessity for additional training burdens. Put simply, the potential training cost associated with AEDs can potentially be nil.

Liability and Risk

First Aiders

51

[https://www.health.gov.au/internet/main/publishing.nsf/Content/14ECB83A6CBA80EBCA257BF0001D3A58/\\$File/padev.pdf](https://www.health.gov.au/internet/main/publishing.nsf/Content/14ECB83A6CBA80EBCA257BF0001D3A58/$File/padev.pdf)

A frequently expressed concern is that surrounding the liability of the AED user. Very frequently, the nightmare scenario presented is of a well intentioned 'good samaritan' applying an AED only to be sued by the victim or their family.

The [Civil Liability Act 2002](#) specifically exempts 'good samaritans', i.e., ordinary citizens who respond to another person's need for assistance, from ANY liability. Here is the relevant section of the act:

Part 8 Good samaritans⁵²

55 Application of Part

- (1) This Part applies to civil liability of any kind.*
- (2) This Part does not apply to civil liability that is excluded from the operation of this Part by section 3B.*

56 Who is a good samaritan?

For the purposes of this Part, a good samaritan is a person who, in good faith and without expectation of payment or other reward, comes to the assistance of a person who is apparently injured or at risk of being injured.

57 Protection of good samaritans

- (1) A good samaritan does not incur any personal civil liability in respect of any act or omission done or made by the good samaritan in an emergency when assisting a person who is apparently injured or at risk of being injured. (author's emphasis)***
- (2) This section does not affect the vicarious liability of any other person for the acts or omissions of the good samaritan.*

There are exceptions to this act, which include deliberately attempting to harm the other person, being intoxicated on drugs or alcohol, or impersonating a medical professional, but these extraordinary situations

⁵² <https://www.legislation.nsw.gov.au/#/view/act/2002/22>
©Copyright Corporate AED Solutions 2019

aside, it's clear that it is not possible to incur liability for simply trying to help. And this includes applying a nearby AED.

These exceptions, and the fact that this legislation does not prevent the commencement of proceedings, can be a cause for concern for some. There has never, however, been a successful suit in a case of this kind. This fact alone should assuage any anxiety surrounding liability in the case of providing assistance with an AED, as the entire weight of legal precedent, as well as the law, sits in favour of the good samaritan.

Employers

Employers should consider whether there is any risk of liability associated with not having an AED installed in an environment where it can reasonably be deemed necessary to have one in accordance with Model WHS requirements.

According to Emergency Law expert, Michael Eburn, an employer being found negligent for not providing AEDs is highly unlikely in cases where the workplace is not deemed 'high risk'. This is especially true in cases where the SCA is not directly related to the situational circumstances connected to the employer, workplace, or activity.

Michael Eburn does a good job here of explaining that it is highly unlikely⁵³ an employer could be successfully sued as being negligent for not supplying an AED where they are not operating in a high risk environment - especially in cases where the SCA is not related to a situation the employee or visitor is exposed to because of their interaction with the employer. This does not prevent families from commencing legal action which obviously is not without costs and risks to employers, it simply suggests that this action would likely be unsuccessful.

This should, however, be offset against the fact that there is nothing to prevent individuals from commencing such an action, which will likely result in legal costs, and potentially costs arising from lost productivity and other factors. Having an AED in place makes it impossible to be sued for negligence for not possessing an AED.

⁵³ <https://emergencylaw.wordpress.com>

A full Q&A on this subject can be found here:

<https://emergencylaw.wordpress.com/2016/04/07/liability-for-failing-to-install-an-aed/>

Conclusions

In conclusion, there are many compelling reasons to make AED units available within your workplace. On a real cost basis, there are virtually no financial downsides to having these lifesaving pieces of equipment, whereas the benefits are manifold and far-reaching.

1. AEDs represent by far the most effective means of saving people from Australia's biggest killer in the workplace or anywhere else.
2. AEDs are so easy to operate that minimal training is required to install and deploy them as the most effective immediate countermeasure against an SCA death.
3. There are clear moral considerations in favour of AED installation.
4. AED installation comes with numerous ancillary benefits, both tangible and intangible.
5. Fears surrounding legal liability are not sufficient or sufficiently valid to act as a reasonable contraindication for AED installation.
6. It is highly probable that in many workplaces, AED installation can be understood to be a best practice interpretation of the exercise of duty of care under the law.

If in spite of all these benefits an organisation still does not wish to purchase an AED, we will respect that decision. In such cases, however, we strongly advise the following:

- Responsible persons should take great care to ensure that their stated reasons for not doing so are not spurious (as outlined above).
- The risk assessment process leading to such a decision should be sufficiently robust and detailed to withstand close examination.

- Risk Assessments should be up to date, and performed with sufficient regularity to account for changes in workplace conditions or practises.

APPENDIX

Additional Information and FAQ

Quality of Devices

While we would never encourage someone to dispose of an AED that is in good working order and under manufacturer's warranty, the following should be considered when purchasing new devices. As with all products, some devices are better at saving lives and easier to own, maintain, and use than others. Devices should:

- a) Meet Australian Resuscitation Council Standards and escalate in energy to at least 200 joules or 360 joules if available (some devices still being marketed only shock to 150 joules).
- b) Be warranted by a reputable manufacturer with local representation.
- c) In instances where children under eight fall under duty of care, that the device has an integrated paediatric mode which can be enabled without requiring a change of pads. The need to change pads adds the cost of extra pads and, more importantly, makes it more difficult for the first responder assisting.
- d) Be equipped with batteries and pads which require minimal change-outs. The most common cause of AED malfunction is failure to replace batteries or maintain pads. For this reason, we recommend providers who offer monitoring or provide proactive servicing or alerts. Additionally, units which only require maintenance every four years are recommended.

Frequently Asked Questions

How Many AEDs Do I Need?

To have the best chance of survival someone needs early CPR and defibrillation within 3 minutes. This means that a calculation needs to be made with regard to a few key factors. Employers should consider (or measure) whether a responder, walking briskly, could reach any sufferer of SCA within ninety seconds from the proposed AED locations. If not, more units should be considered. Ideally, there should be no more than ninety seconds of travel from any AED point to any point within the workplace.

Additionally, sight lines should be considered. If the workplace contains one or more areas which are not in line of sight from other parts of the workplace, additional units may be required to ensure that any potential responder would have both the AED and the sufferer simultaneously in view.

Workplaces are, of course, widely varied in layout, area, and design, so any other factors such as trip hazards, split levels, and so on should be considered. The basic guiding principle is that in a high stress emergency situation, access to AED equipment is quick and obvious.

What if Someone Nearby Already Has One?

Given the cost of buying an AED it is appropriate, where possible to share their availability. The questions an employer should ask in this scenario is:

1. Does it meet the accessibility requirements described above?
2. Have I formally confirmed with the AED owner that:
 - a. They agree to share the device?
 - b. The device is under warranty and properly maintained?
 - c. The device is accessible during my operating hours?