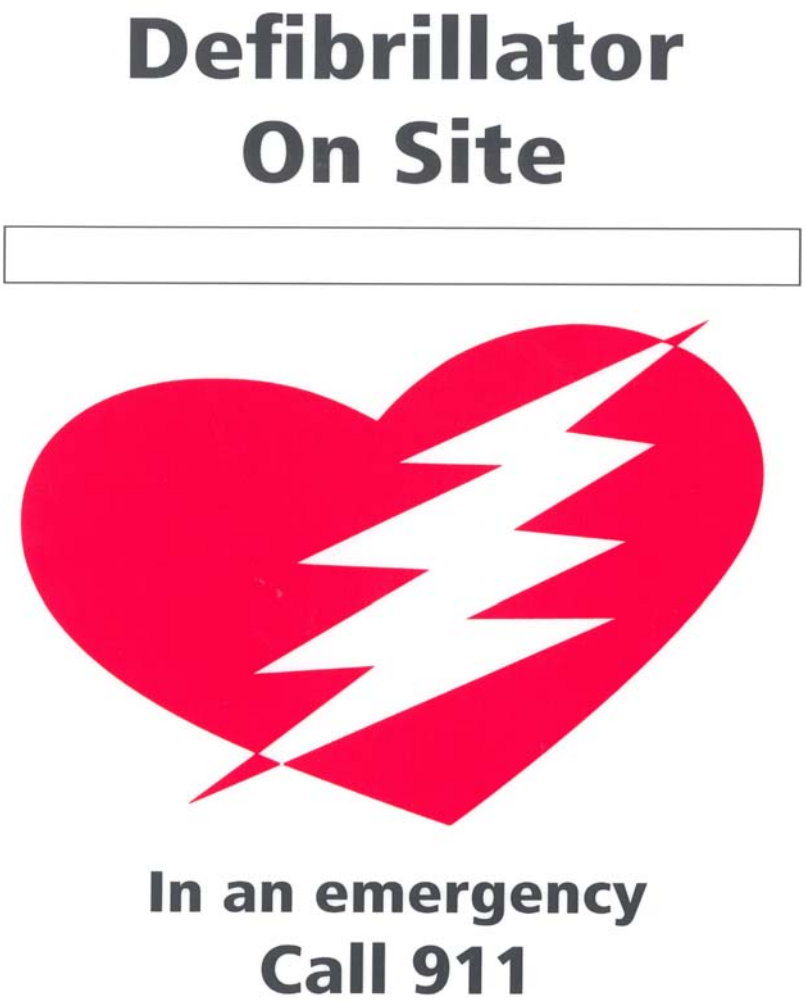
Automatic External Defibrillator (AED) Toolkit for Workplaces



Halton Region
Health Department
Promoting and Protecting Health
Preventing Disease. Providing EMS.

This toolkit has been created to help organizations in Halton implement the use of AEDs in their workplace.

Halton Region

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Halton REGION

Getting Started

Implementing an Automated External Defibrillation (AED) program at your organization can save lives. This toolkit is meant to be a simple guide to help you with any questions you might have regarding the process of implementing an AED program at your organization. For several years Halton Region has had a Public Access Defibrillation (PAD) program with a goal to increase the number of public access defibrillators in our communities.

What will be covered in this guide:

- A brief overview of an AED Program
- Purchasing and training
- Placement and signage
- Maintenance
- Registration
- What to do when you have used your AED
- Common questions
- Forms

As many as 45,000 cardiac arrests occur each year. That is about one every 12 minutes. Defibrillation improves survival rates by up to 30% if delivered in the first few minutes. With each passing minute, the probability of survival declines by 7 to 10%. Making defibrillators easily accessible has the potential to save thousands of lives. (Heart and Stoke foundation 2012)

A Brief overview of an AED Program

What is an AED?

An AED is an electronic device that can monitor heart rhythms. It can tell if the heart has stopped beating effectively. If required, the machine can then deliver an electric shock to the heart. If delivered in time, this shock may restart the heart.

There are three main universal steps for using an AED:

1. Turn Power ON 2. Attach Pads 3. Shock if Necessary

1. Turn power on – This will be clearly labelled on the machine
2. Attach Pads to bare chest- Place the Pads as shown on the picture
3. Shock if necessary- The machine will tell you to press the flashing button if a shock is advised, if no shock is advised you will continue CPR

When applied to a cardiac arrest patient AEDs are completely safe! Once the AED is turned on it will coach you through the steps of calling for medical assistance through to shocking and performing CPR. An AED will only deliver a shock if the heart rhythm can be corrected by a shock. When you follow the direction prompted by the AED **you cannot hurt the victim with an AED.**

The Program:

Every organization may have a slight variation to their AED program; here are a few simple recommendations that might make the program more successful.

- Have one person or department responsible for the AED; typically Human Resources or Health and Safety. First responders are also good staff to run the AED program; however the support of the entire program comes from the top of your organization.

- Train as many staff or personnel as possible on CPR and how to use the AED. (it is not mandatory for everyone to be trained on the use of an AED however it is recommended that as many people are trained as possible, please see the training section of this manual)

- Monitor the expiration dates of the batteries and defibrillator pads, and keep an inventory of replacement accessories.

- Monitor the device on a monthly and annual basis; follow recommended guidelines from the manufacturer.

Halton: "Create and improve safe, healthy, livable, inclusive communities"

Training

Training is not a requirement however it is strongly recommended. There have been many cases where lay rescuers have saved lives. During sudden cardiac arrest, time is a very important factor and for every minute you delay, the survival rate of your patient decreases by 7% -10%. Therefore, the more people trained the quicker the AED will arrive, chest compressions will start and EMS will be called.

Training can be very simple!

The Heart and Stoke Foundation has a very simple tool kit that can help you learn how to save a life. The Heart and Stroke Foundation CPR Anytime for Family and Friends Kit.

This kit is a personal learning product that teaches lay people in the comfort of their own homes, the core skills to perform adult and child CPR in just 20 minutes – providing families, friends and communities the skills to save lives. This kit also includes an AED demonstration and information on how to help someone who is choking.

For more information on the CPR Anytime kit
Please go to www.heartandstroke.ca/cpranytime

More Advanced Training:

Training can be more in depth with designated first responders and staff trained in BLS-C with AED.
This can be accompanied with a policy and procedure manual that is complemented with a safety conscious culture.

The most important thing is to make sure that if you have an AED, your staff, customers and stakeholders will use it when and if you are ever in a situation that requires its use. Make sure there is a clear path for paramedics when they arrive and have someone flag down the ambulance to show them the location of your patient.

Purchasing an AED

Selecting an AED can be overwhelming. There are many different types of AEDs and a number of different distributors to choose from.

Some common features to look for when selecting An AED:

- ✓ Safe and easy to use
- ✓ Automatically determines whether defibrillation is appropriate and analyzes heart rhythms
- ✓ Guides user step-by-step and advises if a shock is required
- ✓ Portable
- ✓ Advises user when to perform CPR
- ✓ Health Canada Approved

Like any other purchase you would make for your organization, you will want to look at manufacturer warranties, customer support, battery life, available options, expiration of defibrillation pads, availability of paediatric defibrillation pads if your facility is used by patrons less than eight years of age, cost of the device and accessories.

If you have further inquiries you can contact the Public Safety Education Coordinator at the Region of Halton. Please note: Halton does not promote or endorse any particular make or model of AED.

AED Companies

The following companies have Health Canada approval for the sale of AED products in Canada. Halton Region does not recommend or endorse specific products of any single manufacturer or distributor. Halton Region encourages you to contact each company to describe your needs, obtain product information and find out how the company can help you establish your AED program. Licensing information about specific AEDs may be checked through Health Canada's Medical Devices License Listing.

Cardiac Science Corporation Manufacturers of Powerheart AEDs 3303 Monte Villa Parkway Bothell, WA 98021 1-800-991-5465 www.powerheart.com	**Philips** Manufacturers of HeartStart 281 Hillmount Road Markham, Ontario L6C 2S3 1-800-291-6743 www.medical.philips.com/heartstart
Defibtech Manufacturers of Lifeline™/Revive™ SOS Emergency Response Technology 160 Tycos Drive Toronto, Ontario M6B 1W6 416-789-7689 www.defibtech.com	**Physio-Control/Medtronic of Canada Ltd.** Manufacturers of LIFEPAK AEDs 6733 Kitimat Road Mississauga, Ontario L5N 1W3 1-800-268-5346 www.physio-control.com
HeartSine Technologies Manufacturers of Samaritan PAD (SAM PAD) AED Rescue 7 Inc. 245 Riviera Drive Markham, Ontario L3R 5J9 905-474-0770 www.rescue7.net	**Zoll Medical Corporation** Manufacturers of AEDs 1750 Sismeth Road Unit 1 Mississauga, Ontario L4W 1R6 1-866-442-1011 www.zoll.com

This list is current as of October 2012, for an updated list please visit Health Canada’s website.

Placement of Your AED

AED Safety Placement Guidelines

While there is no single formula to determine the appropriate placement and access system for AEDs, there are several elements that should be considered:

- **DO NOT PLACE YOUR AED BEHIND A LOCKED DOOR**
- Response time: The optimal response time is three minutes or less.
- Physical layout of the facility: Response time should be calculated based upon how long it will take for a responder with an AED walking at a rapid pace to reach a victim. Be sure to take into consideration areas with difficult access (secured areas within a building, elevators, etc.).
- Visitors: Facilities that host large numbers of visitors may be more likely to experience a sudden cardiac arrest where an AED is needed.
- A location near a telephone that might be used to call 911.
- Specialty areas: Facilities where strenuous physical activity occurs may be more likely to experience a situation where an AED is needed. Specialty areas should be considered to have a higher risk.

When do I need more than one AED?

- ✓ Do you have confined space work?
- ✓ Will it be difficult for paramedics to get to a particular location?
- ✓ Do you have a large gathering of people?
- ✓ Do you have a high risk population?
- ✓ Does it take you longer than three minutes to get to your patient?

Signage for Your AED

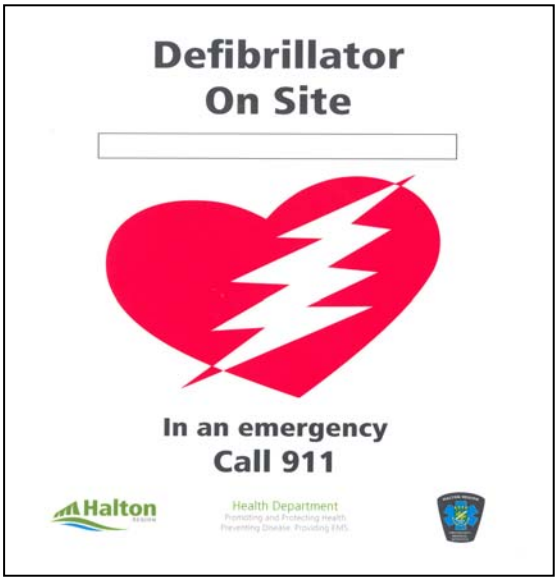
How do people know where to find your AED?

It is important to let all staff and visitors to your organization know that you have an AED on site. In addition to selecting a highly visible location for your AED signage identifying the unit is very important.

Once you have registered your AED(s) with Halton Region, you will be supplied with a window sign.

Some distributors will sell large plastic signs that are hung by the AED to increase its visibility.

If you have a facility map, try adding an AED mark on the map – be sure to add it to the legend of the map as well.



Maintenance of your AED

All AEDs come equipped with an instruction manual specific to your AED. Keep this manual and your policy and procedures manual together. Halton Region strongly suggests you follow all recommendations per the manufacturer guidelines.

Monthly checks

AEDs require minimal maintenance. Always ensure you follow the directions per your manufacturer's instructions. In general, the monthly checks are simple and are meant to ensure your unit is operating at its optimal level. We have provided a sample monthly checklist under forms.

Accessories

Generally the only replacement needs for your AED will include defibrillation pads, batteries, and supplies for your rescue-ready kit.

Recalls and updates

As with all manufactured products, there are times when an imperfection occurs. All AED manufacturers require approval by Health Canada. There are strict regulations and in the event of an AED recall, all manufacturers are required to inform all owners affected by the recall and the steps being taken to rectify the problem.

Every five years, the Heart and Stroke Foundation releases the most current and up-to-date resuscitation and AED guidelines. If there are changes or updates that need to be made to the software of an AED (to ensure it is compliant with recent guidelines), you will be notified by the manufacturer.

Registration of your AED

Halton Region maintains a database with the intent of registering all AEDs within its boarders. This database records the serial numbers and expiration dates of the batteries and defibrillation pads.

This database keeps the internal location with a picture and description as well as key contact information for each AED; it is the responsibility of each organization to inform the Region of any changes in contact personnel or internal location of their AED.

Registration is quick and simple; please use the registration form in the forms section of this manual.

What to do when you have used your AED

Once an AED is used, there are some important steps to take. You may need to provide vital information about the incident to the medical personnel taking care of the patient. You will also need to prepare the AED to go back into a “ready state” in the event it is needed again. Please see your user manual and follow the information that is provided.

Event information download

All AEDs collect vital medical information that occurs during a sudden cardiac arrest. This information can be of great assistance to the medical team involved in the care of the patient. This event information should be downloaded and attached to the patient’s medical file.

Please contact Halton Region EMS at 905-825-6000 Ext. 7498 and the Public Safety Education Coordinator will aid in the collection of this information. If this information is not collected within 14 days it should be deleted from the AED unit. This information is considered personal and private medical information and is protected by the Personal Health Information Protection Act, 2004.

Policy and Procedure

A simple policy and procedure manual is important as it helps everyone understand the overall AED program. The manual should outline members of your AED team, where the unit is located, what needs to be done to maintain your unit, and what happens if your AED is used.

This manual should cover much of the information, but a policy and procedures manual will summarize it as it pertains to your specific AED program.

Common Questions

How can I be sure an AED program is right for my organization? What are the potential liabilities?

The apprehension of an AED program typically stems from three things:

- Fear of the unknown – what is this thing?
- Liability
- Theft or tampering

Fear of the unknown

This guide should alleviate any apprehensions you might have about acquiring an AED. The step by step approach you will follow will ultimately make you aware that it is a very safe and easy device to operate correctly. Remember, the use of an AED can potentially save your life and the life of your coworkers and family members.

Liability

Pages 15-17 show two Acts of legislation that will clarify any concerns about liability, and how it affects your AED program.

1. The Good Samaritan Act
2. The Chase McEachern Act

Theft or tampering

AEDs can be placed in a cabinet with an alarm that will limit the possibility of tampering. The location of the AED should be in a high traffic area so that if someone does open the cabinet other patrons will aid in the emergency or report the alarm.

How much does an AED cost?

When starting an AED program, ensure you research all costs involved. The price of an AED varies by make and model. Most AEDs, without accessories, cost approximately $1,500-$2,000.

There are not for profit organizations that have made it their mission to deploy as many AEDs as possible, these organizations accept applications or small donations and can aid in the purchase of an AED for your organization. For further information please contact Halton Region EMS.

To have a quality AED program in place, you will also need some accessories. These may include a cabinet, extra defibrillator pads (adult and paediatric),

rescue ready kit (scissors, razor, gloves, and mask), signage, training, and software tools. Ensure you get pricing on these items as well. Long- term costs should also be considered for your AED program.

Important Note:
Please use caution when shopping online for an AED. AEDs cannot be purchased in the United States and imported to Canada. All AEDs in Canada must be purchased from a local Canadian distributor. Please ensure you are purchasing only these units for use in Ontario.

Good Samaritan Act, 2001

An Act to protect persons from liability in respect of voluntary emergency medical or first aid services

Assented to April 27, 2001

Her Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:

Definition

1. In this Act,

"health care professional" means a member of a College of a health profession set out in Schedule 1 to the *Regulated Health Professions Act, 1991*.

Protection from liability

2. (1) Despite the rules of common law, a person described in subsection (2) who voluntarily and without reasonable expectation of compensation or reward provides the services described in that subsection is not liable for damages that result from the person's negligence in acting or failing to act while providing the services, unless it is established that the damages were caused by the gross negligence of the person.

Persons covered

(2) Subsection (1) applies to,

(a) a health care professional who provides emergency health care services or first aid assistance to a person who is ill, injured or unconscious as a result of an accident or other emergency, if the health care professional does not provide the services or assistance at a hospital or other place having appropriate health care facilities and equipment for that purpose; and

(b) an individual, other than a health care professional described in clause (a), who provides emergency first aid assistance to a person who is ill, injured or unconscious as a result of an accident or other emergency, if the individual provides the assistance at the immediate scene of the accident or emergency.

Reimbursement of expenses

(3) Reasonable reimbursement that a person receives for expenses that the person reasonably incurs in providing the services described in subsection (2) shall be deemed not to be compensation or reward for the purpose of subsection (1).

Commencement

3. This Act comes into force on the day it receives Royal Assent.

Short title

4. The short title of this Act is the *Good Samaritan Act, 2001*.

Chase McEachern Act (Heart Defibrillator Civil Liability), 2007

S.O. 2007, CHAPTER 10. SCHEDULE N

Consolidation Period: From July 3, 2007 to the e-Laws currency date.

No Amendments.

Definitions

1. In this Act,

"defibrillator" means an automated external medical heart monitor and defibrillator that is capable of,

(a) recognizing the presence or absence of ventricular fibrillation or rapid ventricular tachycardia,

(b) determining, without intervention by an operator, whether defibrillation should be performed,

(c) automatically charging and requesting delivery of an electrical impulse to an individual's heart as medically required, and

(d) satisfying any other criteria that may be prescribed by regulation;

"emergency" means a situation during which the behaviour of an individual reasonably leads another individual to believe that the first individual is experiencing a life-threatening event that requires the provision of immediate care to assist the heart or other cardiopulmonary functioning of that person; ("situation d'urgence")

"health care professional" means,

(a) a member of a College of a health profession set out in Schedule 1 to the *Regulated Health Professions Act, 1991*,

(b) such other persons or classes of persons as may be prescribed. ("professionnel de la santé") 2007, c. 10, Sched. N, s. 1.

Protection from civil liability, user of defibrillator

2. (1) Despite the rules of common law, a person described in subsection (2) who, in good faith, voluntarily and without reasonable expectation of compensation or reward uses a defibrillator on a person experiencing an emergency is not liable for damages that result from the person's negligence in acting or failing to act while using the defibrillator, unless it is established that the damages were caused by the gross negligence of the person. 2007, c. 10, Sched. N, s. 2 (1).

Persons covered

(2) Subsection (1) applies to,

(a) a health care professional, if the health care professional does not use the defibrillator at a hospital or other place having appropriate health care facilities and equipment for the purpose of defibrillation; and

(b) an individual, other than a health care professional described in clause (a), who uses a defibrillator at the immediate scene of an emergency. 2007, c. 10, Sched. N, s. 2 (2).

Reimbursement of expenses

(3) Reasonable reimbursement that a person receives for expenses that the person reasonably incurs in using a defibrillator shall be deemed not to be compensation or reward for the purpose of subsection (1). 2007, c. 10, Sched. N, s. 2 (3).

Protection from civil liability, owner or operator of premises

3. (1) Despite the *Occupiers' Liability Act* and the rules of common law, any person who owns or occupies premises where a defibrillator is made available for use and who acts in good faith with respect to the availability or use of the defibrillator is exempt from civil liability for any harm or damage that may occur from the use of the defibrillator. 2007, c. 10, Sched. N, s. 3 (1).

Exception

(2) Subsection (1) does not exempt the person who owns or occupies the premises where a defibrillator is made available for use from civil liability if,

(a) that person acts with gross negligence with respect to making the defibrillator available;

(b) that person fails to properly maintain the defibrillator; or

(c) the premises where the defibrillator is made available for use is a hospital or other premises used primarily for the purpose of providing health care to individuals. 2007, c. 10, Sched. N, s. 3 (2).

Regulations

4. The Lieutenant Governor in Council may make regulations,

(a) prescribing criteria for the purpose of the definition of "defibrillator" in section 1;

(b) prescribing persons or classes of persons for the purposes of the definition of "health care professional" in section 1;

(c) governing standards for the proper maintenance of defibrillators;

(d) respecting any matter necessary or advisable to carry out effectively the purposes of this Act. 2007, c. 10, Sched. N, s. 4.

Applies to the Crown

5. This Act applies to the Crown and any agency of the Crown. 2007, c. 10, Sched. N, s. 5.

6. Omitted (provides for coming into force of provisions of this Act). 2007, c. 10, Sched. N, s. 6.

7**.** Omitted (enacts short title of this Act). 2007, c. 10, Sched. N, s. 7.

Glossary of Terms

AED
Automated External Defibrillator – portable defibrillator designed to be automated such that it can be used by persons without substantial medical training who are responding to a cardiac emergency.

PAD
Public access defibrillator – is an AED that is accessible to the public.

Heart attack
Results from a reduction in blood supply to the heart muscle.

Defibrillation
A process in which an electronic device sends an electric shock to the heart in an attempt to stop a lethal arrhythmia and restore a normal heart rhythm.

Cardiac Arrest
Cardiac refers to the heart. Arrest means stop. Cardiac arrest occurs when the heart suddenly and unexpectedly stops beating.

BLS – C
Basic Life Support training level C that can be taken through the Heart and Stroke foundation of Ontario, Red Cross, or St. Johns ambulance.

Stakeholders
Anyone who has an interest in your organization; employees, customers, investors etc.

First responders
Staff trained in CPR/ First Aid that are designated to help in an emergency situation.

Accessories
Typically includes your AED batteries, pads that are applied to the patient and the items located in the “fast response kit” (1 razor, 1 towel, 1 pair of scissors and a pocket mask).

AED Registration Form

Please return this completed form to:
Paul Lamey, Public Safety Education Coordinator
Halton Region EMS
1179 Bronte Road, Oakville ON Canada, L6M 4G3
Dial 311 or E-Mail: paul.lamey@halton.ca

✓ New Registration _____ Updating information _____

Busisness or individual name: _____

Mailing Address: _____
Street Address/ City Postal Code

AED Coordinator Name: _____

AED Coordinator E-Mail: _____

AED Coordinator Phone Number: _____Fax Number_____

Distributor: _____ Year Purchased:_____

	AED Brand	AED Model	Serial Number	Location of AED
1				
2				
3				
4				

AED Publicly accessible? __ Yes __ No Who has access: _____

AED Accessible year round? __Yes __No Dates when accessible _____

Additional information:
_____

AED Maintenance Checklist

Date: _____ Location: _____

Inspection performed by: _____

Criteria	Status	Corrective Action
Cabinet		
Batteries are installed		
Alarm goes off when you open the door		
Securely mounted to the wall		
Clean no dirt or contamination/ no damage present		
AED		
Check the status/ service indicator light		
Batteries and Pads are within the expirary date		
Supplies		
Pocket mask with one way valve		
Examination gloves		
Scissors		
Razors		
Absorbent gauze or hand towel		
Additional Requirements from AED Manufacturer		

Please refer to manufacturer's User Manual for more information and proper annual maintenance procedures.

Heart and Stroke Foundation of Canada

Position Statement

PUBLIC ACCESS TO AUTOMATED EXTERNAL DEFIBRILLATORS (AEDs)

FACTS

- Cardiac refers to the heart. Arrest means stop. Sudden cardiac arrest is the sudden and unexpected loss of heart function in a person.
- Signs of cardiac arrest include: no breathing, no movement or response to initial rescue breaths, and no pulse.
- In Canada, 35,000 to 45,000 people die of sudden cardiac arrest each year.[1]
- An automated external defibrillator (AED) is a device containing sophisticated electronics used to identify cardiac rhythms, and to deliver a shock to correct abnormal electrical activity in the heart. An AED will only advise the individual using the device to deliver a shock if the heart is in a rhythm which can be corrected by defibrillation.
- AEDs are safe, easy to use, and can be used effectively by trained medical and non-medical individuals. Trained responders have effectively used AEDs in many public settings, including casinos, airport terminals, and airplanes.[2-4] Trained laypersons can use AEDs safely and effectively. [5]
- An AED is an efficient and effective means of achieving rapid defibrillation in both the out-of-hospital and in-hospital setting.
- Sudden cardiac arrest occurs with a frequency of roughly 1 per 1000 people 35 years of age or older per year.[6]
- Any location that has 1000 adults over the age of 35 present per day during normal business hours (7.5 hours/day, 5 days per week, 250 days per year) can expect 1 incident of sudden cardiac arrest every 5 years.[6]
- For every one minute delay in defibrillation, the survival rate of a cardiac arrest victim decreases by 7 to 10%. After more than 12 minutes of ventricular fibrillation, the survival rate of adults is less than 5%.[7]
- Currently there is evidence to support a recommendation to use AEDs for children over the age of 1, but not for children under the age of 1.
- Across Canada, some provinces regulate the use of AEDs, while other provinces do not. Information about individual provincial regulations can be obtained from the provincial Heart and Stroke Foundation offices.

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Finding answers. For life.

www.heartandstroke.ca

Halton REGION

Heart and Stroke Foundation of Canada

Position Statement

PUBLIC ACCESS TO AUTOMATED EXTERNAL DEFIBRILLATORS (AEDs)

RECOMMENDATIONS

The Heart and Stroke Foundation of Canada recommends that:

Canadians:

1. Have widespread access to automated external defibrillators, particularly in locations which are at high risk for incidents of sudden cardiac arrest (one can expect 1 sudden cardiac arrest per 1000 person-years).[6]
2. Be trained and encouraged to apply cardiopulmonary resuscitation (CPR) and AED skills when needed.
3. Who are targeted responders be authorized, trained, equipped and directed to operate an AED if their responsibilities require them to respond to persons in cardiac arrest.

Governments:

1. Establish provincial regulations or legislation to ensure immunity of the overseeing physician and responders from liability, excluding gross negligence or willful misconduct.

Training Agencies:

1. Ensure that AED programs meet or exceed guidelines for AED and CPR training established by the Heart and Stroke Foundation of Canada (HSFC).
2. Ensure that public facilities with a high likelihood of cardiac arrest incorporate AED programs into more comprehensive emergency response plans.
3. Ensure that early defibrillation programs operate within systems which:
   a. integrate basic life support and/or advanced cardiac life support training with AED training, as appropriate;
   b. integrate the provision of AEDs within the health care system and establish linkages with the EMS system;
   c. consider the response time of the local EMS system when acquiring and placing AEDs in a community and/or workplace;
   d. place the program within the medical oversight of a physician and ensure immunity of the overseeing physician and responders from liability;
   e. establish a system of quality assurance to include the review of all clinical events when an AED is used;
   f. include a mechanism for data collection, evaluation, and reporting of outcomes;
   g. comply with accepted guidelines for training and retraining;
   h. enhance public awareness of the role of early defibrillation in cardiac arrest; and
   i. receive training from an accepted and recognized training agency.

Pre-hospital Planners and Providers:

1. Advocate for strengthening the Chain of Survival™ and ensure access to AEDs by responders in all Canadian communities. In the future, efforts to expand the use of AEDs by the general public may be warranted.
2. Plan for early defibrillation initiatives to be implemented within the community Chain of Survival™.
3. Include AED programs as part of comprehensive emergency response plans that are linked with the emergency medical services system, and implemented within systems which provide transfer of care protocol, medical oversight, training, continual readiness, quality assurance, data collection, and evaluation.
4. Follow provincial guidelines for physician oversight for AED programs where such guidelines have been established. Where no guidelines exist, a physician should, at minimum, establish the AED protocol, review the conduct of each resuscitation attempt and make recommendations for improvement. Physicians overseeing emergency medical services (EMS) programs are well placed to perform this review.

Hospitals:

Examine policies and procedures for cardiac arrest and resuscitation to ensure that the time to defibrillation using AEDs within the hospital setting is as short as possible. In settings where professionals trained in advanced cardiac life support are not immediately available (less than three minutes from arrest to defibrillation), AED training should be provided as a basic skill for healthcare providers.

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Position Statement

PUBLIC ACCESS TO AUTOMATED EXTERNAL DEFIBRILLATORS (AEDs)

BACKGROUND INFORMATION

Arrhythmias (abnormal heart rhythms) such as ventricular fibrillation cause most sudden cardiac arrests. Early defibrillation is the intervention that is most likely to improve survival rates. The time between the onset of cardiac arrest and the use of an AED is the major determinant for success of the resuscitation attempt. While CPR helps to maintain circulation and ventilation in a victim of cardiac arrest for a short period of time, it is unlikely to convert ventricular fibrillation to a normal heart rhythm. Restoring a normal heart rhythm requires defibrillation to be provided within a few minutes of the arrest.

If an AED is immediately applied to a victim of cardiac arrest due to ventricular fibrillation, the likelihood of survival is high. Survival rates in cardiac rehabilitation programs that provide defibrillation within the first few minutes after a cardiac arrest are higher than 85%.[8] With each passing minute from the time of the arrest, the probability of survival declines about 7% - 10%.[7] Studies show that few patients survive if the time from collapse to defibrillation is greater than 12 minutes.[9,10] If CPR is performed from the time of collapse to the time the defibrillator arrives, survival may be possible after a longer time interval. Therefore, the HSFC supports efforts to provide prompt defibrillation to victims of cardiac arrest.

Defibrillation is a key link in the Chain of Survival™. The Chain of Survival™ consists of a series of four links that give the victim of a medical emergency the best chance of living. These links are:

- Early access to emergency care;
- Early CPR;
- Early defibrillation; and
- Early advanced cardiac care

All links in the Chain of Survival™ are important to reduce death and disability from heart disease and stroke.

The Chain of Survival™ is only as strong as its weakest link. The success of each link depends on the link immediately before and after. Recognizing the warning signals of cardiac arrest and reacting by rapid notification of the EMS system (by calling 9-1-1 or other emergency response number), helps to get the AED to the victim quickly and reduce delay to defibrillation.

Almost all clinical studies have shown that bystander CPR can help to improve survival rates. Bystander CPR is the best treatment that a cardiac arrest patient can receive until a defibrillator and advanced medical care arrive.[8] CPR training teaches Canadians how to recognize the signals of a heart attack and cardiac arrest, how to react, and how to provide CPR until EMS arrive, shortening the time to defibrillation.

Early Defibrillation

Targeted Responders in the Community

A targeted responder is any person who, as a part of their job description as a professional primary health care provider or a professional first responder, has the duty to respond to a medical emergency. Targeted responders may include any healthcare provider, or any first responder whose occupation or volunteer activities demand proficiency in the knowledge and skills of basic life support (BLS).

Lay Responders

Lay responders in facilities with a high likelihood of a cardiac arrest event (1 every 2 years) can also be effective. The Public Access Defibrillation (PAD) trial demonstrated a doubling of survival rates (from 15% to 30%) in facilities with high likelihood and with trained staff always available.[5]

In-hospital

The concept of early defibrillation can be applied to the in-hospital resuscitation setting. The goal of early defibrillation in-hospital is a collapse-to-shock interval of less than 3 minutes in all areas of the hospital and ambulatory care facilities.[8] AED technology poses unique opportunities for in-hospital resuscitation. Hospitals are encouraged to examine their policies and procedures for cardiac arrest and resuscitation to determine if use of AEDs within the hospital setting could reduce time to defibrillation. In settings where professionals trained in advanced cardiac life support are not immediately available, AED training should be provided as a basic skill for healthcare providers. AEDs should be made readily available in strategic areas throughout hospitals to help reduce the time from collapse to defibrillation.

Unique Situations

Current data suggests that AEDs are an effective intervention for sudden cardiac arrest and may be an effective intervention in settings where there is a high likelihood of cardiac arrest such as airports, casinos, commercial aircraft cabins and in other settings where large numbers of high-risk adults may be located.[2-5,7]

Defibrillation is effective only if performed shortly after cardiac arrest. Urban and rural communities need to determine the degree to which they are capable of getting an AED to a victim of cardiac arrest in time for resuscitation efforts to be effective, and consider placement of AEDs where the chance of ambulance response is low, such as on ferries or airplanes.

Access to Defibrillation

HSFC encourages widespread access to AEDs in Canada. In some provinces, enabling legislation and regulatory changes may be required.

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Heart and Stroke Foundation of Canada

Position Statement

PUBLIC ACCESS TO AUTOMATED EXTERNAL DEFIBRILLATORS (AEDs)

The Heart and Stroke Foundation of Canada recognizes that the life-long heart health of Canadians is affected by both individual and social factors. Individual factors include genetic make-up, personal health choices and actions, and social support. Social factors include the social, economic and environmental conditions in which Canadians live, work, learn and play. The Foundation encourages Canadians to make heart-healthy choices and encourages governments and the private sector to develop policies and programs that support healthy communities and reduce inequalities that negatively affect health and well-being.

The information contained in this position statement is current as of: JUNE 2008

REFERENCES

1. Gardiner, Martin J., Leather, Richard and Teo, Koon, The Prevention of Sudden Death from Ventricular Arrythmia, Chapter 1, Epidemiology, Canadian Cardiovascular Society, 1999.
2. Valenzuela TD, Roe DJ, Nichol G, et al. Outcomes of rapid defibrillation by security officers after cardiac arrest in casinos. *New England Journal of Medicine* 2000;343:1206-1209.
3. O'Rourke MF, Donaldson E, Geddes JS. An airline cardiac arrest program. *Circulation* 1997;96:2849-2853.
4. Page RL, Joglar JA, Kowal RC, et al. Use of automated external defibrillators by a US airline. *New England Journal of Medicine* 2000;343:1210-1216.
5. The Public Access Defibrillation Trial Investigators. Public-access defibrillation and survival after out-of-hospital cardiac arrest. *New England Journal of Medicine* 2004;351(7):637-646).
6. Hazinki MF, Markenson D, Neish S. American Heart Association Scientific Statement: Response to Cardiac Arrest and Selected Life-Threatening Medical Emergencies. *Circulation* 2004;109:278-291.
7. Larsen MP, Eisenberg MS, Cummins RO, et al. Predicting survival from out-of-hospital cardiac arrest: a graphic model. *Annals of Emergency Medicine* 1993;22:1642-1658.
8. International Liaison Committee on Resuscitation (ILCOR). Guidelines 2000 for Cardiopulmonary Resuscitation and Emergency Cardiovascular Care. Part 4: Automated External Defibrillator: Key link in the chain of survival. *Circulation* 2000;108(Suppl 2):I60-I76.
9. Cummins RO, Ornato JP, Thies WH, Pepe PE. Improving survival from sudden cardiac arrest: the "chain of survival" concept: as statement for health professionals from the Advanced Cardiac Life Support Subcommittee and the Emergency Cardiac Care Committee of the American Heart Association. *Circulation* 1991;83:1832-47.
10. Valenzuela TD, Roe DJ, Cretin S, Spaite DW, Larsen MP. Estimating effectiveness of cardiac arrest interventions: a logistic regression survival model. *Circulation* 1997;96:3308-13.

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