

Start-a-Heart PAD Program

Preamble

The Heart and Stroke Foundation of Canada (HSFC) is the co-author of the 2015 Guidelines update for CPR and Emergency Cardiovascular Care (ECC) in North America and the Canadian subject matter leader in resuscitation science, education and training (ILCOR member). The Guidelines are updated every 5 years, when evidence is clear that changes will improve survival rates. The HSFC released the 2015 Guidelines Update on October 15, 2015. The City of Kawartha Lakes Start-A-Heart PAD program mirrors the HSFC current recommendations and guidelines for citizen CPR and AED.

Note

As of November 16, 2016 our community has 200 registered PAD sites and all CKL Emergency Service (Police, Fire and Paramedic) marked vehicles have AEDs. The Paramedic Service also has a community AED loaner program for not for profit community events to borrow. This manual is updated and reviewed annually by the Paramedic Service.

Introduction

The HSFC emphasizes the need for a credible PAD champion in a community that can provide oversight, professional education guidelines and a continuous quality improvement (CQI) process to ensure an effective PAD program. City of Kawartha Lakes Paramedic Service has the expertise within its department and welcomes the opportunity of being the community champion for PAD. The objective will be to empower non-traditional rescuers and citizen/lay rescuers to perform the skill of defibrillation safely and effectively, to the Heart and Stroke Foundation of Canada/Ontario (HSFC/O) guidelines.



PAD program questions and answers

What is public access to defibrillation?

Public access to defibrillation (PAD) means making Automated External Defibrillators (AEDs) available in public and/or private places where large numbers of people gather.

Why is PAD essential to our community?

According to the Heart and Stroke Foundation of Canada, 66,000 citizens died due to cardiovascular disease in 2011. Many of those deaths would be due to heart attack, stroke and sudden cardiac arrest (SCA). SCA strikes people of all ages and various degrees of fitness. It usually happens without warning. Many of these victims can be saved if citizens are prepared to quickly phone 911, begin CPR and provide defibrillation within three minutes of collapse. The goal of an organized PAD program is to better prepare the public to deal with SCA prior to the arrival of Emergency Services. This is essential in improving the Chain of Survival within our community.

70% of all SCAs are caused by an abnormal heart rhythm known as ventricular fibrillation (VF). In layman terms, VF causes the heart to quiver like a bowl of jelly and therefore prevents the heart from pumping blood. As a result, the victim suddenly collapses and becomes lifeless. The treatment for VF is defibrillation. Defibrillation is the delivery of an electric shock to the heart that stops VF and allows a normal heart rhythm to resume. Providing early defibrillation drastically improves survival rates for VF cardiac arrest. In places (sporting facilities, casinos and public buildings) with an organized PAD program, survival rates from VF cardiac arrest have risen to 70%. Currently only about 5% of all SCA victims survive in places where no PAD programs have been established to provide prompt CPR and defibrillation by citizens.

What is an AED?

The automated external defibrillator (AED) is a computerized medical device that can check a person's heart rhythm. It can recognize a rhythm that requires a



defibrillation shock and advise the rescuer to deliver the shock if needed. The AED uses voice prompts, lights and/or text messages to tell the rescuer the steps they need to take. AEDs are very accurate and easy to use. With a few hours of education, anyone can learn to operate an AED safely. There are many different brands of AEDs, but the same basic steps apply to all of them. We do not recommend a specific model.

What is the Heart and Stroke Foundation of Ontario (HSFC/O) position on placement of AEDs?

HSFC/O supports placing AEDs in targeted public areas such as sports arenas, gated communities, office complexes, doctor's offices, shopping malls, etc. When AEDs are placed in the community, a business or facility, the HSFC/O strongly encourages that they be part of a defibrillation program in which:

- Persons that acquire an AED notify the local Paramedic administration office.
- A detailed quality assurance and improvement program is established and that the site is linked to an expert in PAD (i.e. local Paramedic Service, physician, Red Cross, St. John Ambulance etc.).
- Persons responsible for using the AED are trained in CPR and how to use an AED.

What is the criterion for PAD?

- Facility / event with a history of cardiac arrest in the past 5 years;
- Facility / events where 200 people gather per day or 1,000 people per week with an average age of 50;
- Sporting events (i.e. contact sports, swimming and track and field competition);



- Facilities / events with barriers that increase the response time for emergency services (i.e. high rise complex, physical barriers, gated security, and the rural community).

Why is notifying the local Paramedic Service important?

It is important for the local Paramedic Service to know where AEDs are located in the community. In the event of a sudden cardiac arrest emergency, the 9-1-1 dispatcher will know if an AED is on the premises and will be able to notify potential on scene first aiders as well as responding emergency services.

Why should a defibrillation expert be involved with purchasers of AEDs?

The defibrillation expert will ensure that all designated responders are properly trained and that the AED is properly maintained. He or she also can help establish an emergency response plan for the AED program.

Why should people who are responsible for operating an AED receive CPR training?

Early CPR is an integral part of providing lifesaving aid to people suffering sudden cardiac arrest. CPR helps to circulate oxygen-rich blood to the brain. After the AED is attached and delivers a shock, the typical AED will prompt the operator to continue CPR while the device continues to analyze the victim.

If AEDs are so easy to use, why do people need formal training in how to use them?

An AED operator must know how to recognize the signs of a sudden cardiac arrest, when to activate the 911 system, and how to perform CPR. It is also important for operators to receive formal training on the AED model they will use so that they become familiar with the device and are able to successfully operate it in an emergency. Training also teaches the operator how to avoid potentially hazardous situations.



Can anyone buy an AED?

Yes...but we recommend that you approach a reliable knowledgeable expert to assist you in your decision. In our community, local Paramedic Service, HSFC/O, Red Cross, or St. John Ambulance can help steer you in the right direction.

My church has identified a member physician willing to purchase an AED. First step in the process?

The above agencies can help you with the necessary information to move forward.

How much does a PAD program cost?

The price of a PAD program can vary but we would recommend you have a budget that considers equipment, initial training, program support and ongoing training and support.

- A. Equipment - \$1,500.00 – \$2,200.00 plus GST
 - a. AED
 - b. Carrying case
 - c. Response kit with scissors, razor, pocket mask etc.
 - d. Rescue case (to store AED in state of readiness)
 - e. Note: If you want the AED rescue case wired to call 911 directly the cost will depend on if you have a security alarm system already in your building.

- B. Program Support for first year – estimated at \$500.00 – \$750.00
 - a. Site Assessment
 - b. Internal PAD coordinator



- c. CPR/AED education
 - d. Quality Assurance (Q/A) program
 - e. Consumable AED parts (electrodes and battery)
- C. Subsequent years – estimated at \$500.00 - \$750.00
- a. Site Review
 - b. Internal PAD coordinator
 - c. CPR /AED education (new staff vs. recertification)
 - d. Q/A program
 - e. (electrodes and battery)
 - f. Note: Points B & C can be provided by a number of local agencies (see page 25).

What steps should an organization take to buy an AED for its premises?

Any person or organization wanting to buy an AED should consult their local Paramedic Service for advice. The local Paramedic Service is a reliable source of information since it focuses on helping the community prepare for a medical emergency and not selling a product or training package for CPR/AED.

Can AEDs be used on children?

Children over 8 years can be treated with a standard AED. The HSFO recommends that paediatric attenuated electrodes be purchased for children 1-8 years or age. If only adult electrodes are available then use them as directed by your course instructor.

Which AED model does the HSFC/O recommend?

The HSFC/O does not recommend a specific device. All AED models have similar features, but the slight differences allow them to meet a variety of needs. The HSFO encourages potential buyers to consider all models and make a selection based on the buyer's particular needs. The local Paramedic Service can help you with this decision.



How can I enroll in a CPR or AED class?

Many agencies such as your local chapter of HSFC/O, the Red Cross, St. John Ambulance and or the Life Saving Society offer courses.

What kind of training on AEDs is available?

Many excellent courses exist from different agencies as listed on page 25.

What is the Chain of Survival?

More people can survive SCA if citizen bystanders act quickly to start the Chain of Survival. The Chain of Survival consists of the actions needed to treat a life-threatening emergency. The adult Chain of Survival has 4 vital links:

Early Access — recognizing that an emergency exists and quickly phoning 911,

Early CPR — CPR circulates oxygen-rich blood to the brain and heart and buys time (approximately 2 – 4 minutes) for the victim until defibrillation can be performed,

Early Defibrillation — should occur within 3-5 minutes via PAD, Police, Fire or Paramedics,

Early Advanced Care — this is provided by Advance Care Paramedics or in the emergency department at the local hospital.

What is Hands Only CPR?

Hands Only CPR (Compression Only CPR) is recommended by the HSFC/O during witnessed collapse or when a barrier device (pocket mask) is not readily available. Modern research has found that if the sudden cardiac arrest is witnessed there is residual oxygen in the victim's blood. All that needs to happen is for the blood to be circulated by performing chest compressions. It is estimated that in an urban setting professional emergency responders (911) should be arriving at about the time the residual oxygen is depleted (10 minutes).



Kawartha Lakes Paramedic Service PAD Program Site Guidelines

1. It is essential that all Automated External Defibrillators (AEDs) within the Kawartha Lakes be registered with Paramedic Service (911 system).
2. All AED / PAD programs are expected to be managed following the HSFC/O guidelines to ensure that comprehensive education and Continuous Quality Improvement process is in place and followed.
3. A Paramedic Superintendent will oversee the PAD program to ensure program guidelines are forwarded to registered City of Kawartha Lakes PAD sites.
4. A site assessment must be done by the PAD expert outlining:
 - The best position for the AED in the building /event. To guarantee that time to defibrillation from witnessed SCA does not go beyond 5 minutes.
 - Directional PAD signs are recommended in common areas (lunch room, washrooms etc.).
 - Instructions will be with the AED outlining its projected use and simplicity of operation.
 - The AED must never be locked up even if there is not a trained responder on site. Many personnel (including clients or volunteers) may have some form of PAD awareness.
 - PAD Responders on site will have formal CPR/AED education.
 - An Emergency Medical Response Plan (EMRP) specialized to the location will be established and understood by all PAD Responders on site.
 - The site will designate an On – Site PAD Coordinator.



5. AED Guidelines:

- Must be Health Canada approved.
 - Defibrillator electrodes within expiry date and unopened.
 - AED battery operational (inserted) and within expiry date.
 - Barrier device (pocket mask), scissors, towel and gloves.
 - AED should be positioned in an easily accessible, alarmed (visible and audible) wall mounted rescue case. It is strongly recommended that an alarm company monitor the response case during all hours of operation. This will make certain no 911 response delay during an emergency.
 - The AED should be checked once a month to guarantee that it is in a state of readiness. Every 12 months, the AED, the rescue case alarms and contents (including monitoring system) must be checked.
 - Following each use, the AED must be checked to ensure its state of operation by a qualified person.
6. Event data recorded in the AED must be available for download and delivery to the hospital that the SCA victim has been sent to. The PAD site must be able to download their AED and or have arrangements for their PAD overseer to download it after a use.
7. Event reviews will be conducted by the Paramedic Service after each AED use. The purpose of these reviews will be to identify:
- Time of collapse to time of AED application.
 - Time of 911 call until arrival of first professional emergency service.
 - Site specific emergency medical response plan employed.



- A statement of the sudden cardiac arrest occurrence, detailing the constructive outcome and performance, needs to be reviewed using a positive critique.
8. A debriefing should be held using the principles of Critical Incident Stress Management about 5 days after the event.
 9. PAD Responders should be trained following the latest guidelines published by the Heart and Stroke Foundation of Canada (or equivalent program using current AHA guidelines i.e. St. John Ambulance First Aid).
 10. On-going PAD Responder education should be conducted following the Heart and Stroke Foundation of Canada citizen CPR/AED program curriculum or every three years as directed by a W.S.I.B. approved first aid (i.e. St. John Ambulance First Aid). It is suggested that PAD Responders have the opportunity to review their EMRP and AED annually. The kind of review we suggest is not official training but rather a chance for PAD Responders to re familiarize themselves with their EMRP and AED.
 11. Every three years, registered PAD sites should be audited by an AED expert to guarantee that all 10 points are being achieved. The goal is to maintain public safety. Paramedic Service has listed a number of credible local agencies on page 25 of this manual who can provide this service.

Implementing Your facility's PAD program

The following information will help you develop a PAD program for your specific location. The following is recommendations that focus on things to consider when developing your PAD site. Things to consider are:

- Provincial law:
 - [Good Samaritan Act](#)
 - [Chase McEachern Act](#)



- Direct link to a recognized PAD provider (credentials to support expertise).
- Development of your own PAD program – Paramedic Service will provide all interested citizens with our PAD program manual and recommendations for no cost.
- Selection of an Automated External Defibrillator (AED) – all AEDs used within our community must be Health Canada approved. The City of Kawartha Lakes PAD sites are presently using Phillips AEDs. These AEDs best suit the needs of city owned sites. If you choose a different model, you will be responsible for a preventable maintenance program, trainer AEDs, and downloading software as well as data transfer to the Paramedic Service post SCA event.
- AED Characteristics:
 1. Lightweight and portable
 2. Easy to use, safe and effective
 3. Automatically analyzes heart rhythms
 4. Determines whether defibrillation is advised
 5. Guides the user through defibrillation
 6. Follows comprehensive “self-checking” protocols
 7. Prompts the rescuer to begin CPR
- Locations to Consider for AED:
 1. Security guard station
 2. Main reception area
 3. Walls of main corridors
 4. Cafeteria



5. Fitness facility
 6. Near elevator
 7. In secured or restricted access areas
- Training Program for CPR and AED (includes early access to 911, recognition of SCA, treatment for SCA, recognition of Heart and Attack and Stroke) – you should have someone with instructor status with one of these agencies - HSFC/O, St. John Ambulance, Red Cross, Life Saving Society, National Ski Patrol, private provider accredited by H.S.F.O. or W.S.I.B. as a training agency.
 - People to train as responders for PAD – We recommend that all staff and volunteers (i.e. public), who are on site most hours of operation, be targeted for PAD and CPR education with specific knowledge of our community PAD program objectives. In selecting these individuals, we would recommend:
 - Staff/volunteers who are already trained in first aid and CPR
 - Those already deemed to respond to assist in an on site medical emergency
 - Security staff
 - Fire Wardens
 - Maintenance workers
 - Property Mangers
 - Reception / cashier staff
 - All others on staff, or those that frequent the site, receive general awareness of the PAD program through various methods of communication (i.e. newsletters, memos, electronic videos, staff meetings, health and safety officers etc.).



- Notifying local Paramedic Service of AED instillation – The Paramedic Service needs to know where the AEDs are located in the community and that they are logged into our data base. This way, Paramedic Communication Officers can direct citizens to an AED when 911 calls for a Sudden Cardiac Arrest (SCA) occur.
- Site Coordinator - Choosing a dedicated program coordinator is important to implementing a successful PAD program. A site coordinator is someone on-site who can be responsible for day-to-day activities of the program. One of the site coordinator's most important responsibilities throughout implementation is communicating with key decision-makers, selected program responders, employees, and the public.
- Support from Decision-makers - During the initial planning of your PAD program, it is vital to get the decision makers of your organization to embrace the PAD concept. Our Paramedic Service department will welcome the opportunity to present the importance of the PAD program to the decision makers within your organization. This will help you to identify program supporters and potential barriers early in the process. Paramedic Service can assist with providing real data and outcomes for PAD without the pressure of an immediate financial burden.

Four steps to a successful PAD program

1. PAD Expert Role - The role of a PAD expert is to provide direction and knowledge during the initial implementation process. The PAD expert must educate a highly motivated individual to be the PAD site coordinator and this person will ensure the day-to-day program implementation is achieved.
2. Presentation to staff / volunteers prior to implementation to get greater buy in and ensure a site assessment is done with your health and safety leaders to determine the best placement of the AED. Make sure to establish a highly motivated individual to be you're on site coordinator.



3. Registration of a PAD site with local Paramedic Service communication center.
4. Education of PAD site responders, as well as, general awareness for all others in the location. This needs to be an ongoing commitment.

Implementation tasks

Response procedures

All responders need to be educated in the Emergency Medical Response Plan (EMRP) specifically designed for your facility. This should be written by your organization and approved by your internal health and safety process. The Kawartha Lakes Paramedic Service PAD program has designed a template EMRP for you to consider and/or adapt to fit your facility needs. The remaining staff/volunteers need to be aware of the EMRP and the names of the responders at your site. These individuals also need to know that if they were to use the PAD prior to the arrival of a trained responder, they are protected by Ontario law as “Good Samaritans”. There should be an internal plan to notify the trained rescuers within your facility if a situation arises. Everyone on site needs to know where the PADs are located within the facility.

Minimum Training Requirement – Current HSFC guidelines for Citizen CPR/AED (i.e. early access to 911, recognition of SCA, citizen treatment for SCA, recognition of Heart and Attack and Stroke). The content should include adult CPR procedures and the safe and effective application of an AED. This content is contained in all W.S.I.B. first aid programs (i.e. St. John Ambulance, Red Cross, Heart and Stroke CPR/AED, Life Saving Society and numerous private first aid / CPR companies).

Recertification Training Requirement – we would recommend that ongoing education be followed as directed by the agency providing your education. The Paramedic Service has posted PAD awareness and review information on the City of Kawartha Lakes web site.



Emergency Medical Response Plan (EMRP)

1. Assess the scene and immediate area surrounding the victim for safety. If it appears unsafe, do not go any closer and wait for professional emergency responders to arrive. If the scene is safe then
2. Assess the victim for responsiveness (verbal and tactile stimulus)
3. If the person appears to be lifeless and shows no signs of life, (unresponsive, not moaning or coughing, no movement and their skin is turning blue), call 911.

Note: A funny irregular gasping breath, in a victim who is unresponsive and has poor skin colour, is in Sudden Cardiac Arrest. Commence attaching the AED immediately.

4. Perform CPR until the AED arrives. If you don't have a barrier device (i.e. pocket mask) or formal first aid/CPR training perform Hands Only (continuous compressions) CPR. Depress the chest 1/2 its diameter at a rate of 100 compressions per minute. This will maintain blood flow of trapped residual oxygen to the victim's brain. If you are alone, immediately get the AED. Remember CPR is a temporary solution until the AED arrives.
5. Turn the AED on once it arrives.
6. Stop CPR.
7. Apply the defibrillator electrodes (pads) to the victim's bare chest.
8. Make sure no one touches the person as the AED analyzes.
 - a. If prompted to deliver a defibrillation shock, ensure no one is touching the victim by stating "I'm clear, you're clear, everyone is clear". Once that is achieved, it is safe to press the AED shock button.



- b. Commence CPR immediately and do not stop until the victim appears to show signs of life (i.e. regaining consciousness, movement, moaning, and obvious normal breathing with normal skin colour)
 - c. If no signs of life remain, continue as prompted by the AED device with the analyze / shock / CPR algorithm.
9. Follow the AED's voice and/or screen prompts until emergency services arrive.
10. Transfer the victim's care to emergency services but be prepared to continue your care until the professional rescuers are prepared to take over. If possible, give them an idea of how long the victim has been unresponsive, how many defibrillation shocks were applied and the number of minutes of CPR.
11. Data transfer: Upon the completion of the event, the data in your AED device needs to be downloaded and the responder report completed. If you are using a Phillips AED then the event data will be downloaded at a later time by Paramedic Service. The AED should be turned off and placed back in the rescue case. If your AED is a different model than the one used by the Paramedic Service, you're PAD Coordinator will be responsible for retrieving the AED data and transferring it to the Paramedic Service. The Paramedic Service will be responsible for ensuring it becomes part of the victim's medical record.
12. The Paramedic Service will provide leadership and guidance to the rescuers in a supportive way using the principals of Critical Incident Stress Management. Any citizen rescuer, who is having a difficult time emotionally after an SCA event, should seek the assistance of medical professional (personal physician or local hospital emergency department). The victim's outcome will most likely be known, but all citizen rescuers must realize, Paramedic Service cannot divulge a victim's medical condition without consent from that victim.



Internal Promotion - After initial implementation of the PAD program, provide information to all program participants (employees, visitors, etc) about what a PAD program is, why it is important, and how to activate the EMRP. To maximize the program's effectiveness, everyone must know how and when to notify trained responders to get to the scene of an emergency. Information can be communicated via any of the following:

- Company-wide or internal newsletter or Email
- Posters
- Stickers identifying locations of AEDs
- Staff or departmental meetings
- Membership meetings
- Speaker luncheon
- Closed-circuit TV
- Phone stickers
- Pay check flyers

External Promotion - Depending on the PAD program site, the program may be promoted to clients, customers, vendors, and the outside community. This campaign can be conducted through publications distributed outside the organization and through local newspapers or other media. Media will be more interested in writing a story about the program when the worksite is involved in saving a life. They will most likely want to interview the victim and the responders involved.



“Start A Heart” PAD program roles

Paramedic Service

The Paramedic Service is responsible for City of Kawartha Lakes PAD program by providing leadership that reflects current Heart and Stroke Foundation of Canada/Ontario direction. This information will be shared with City and non-City (private) registered sites. This outreach includes various PAD training agencies within the City of Kawartha Lakes. The core responsibilities will include:

- Only Central East Pre-hospital Care Center (Base Hospital) certified paramedics (in good standing) with HSFC/O instructor status or equivalent, will provide PAD knowledge to the community;
- Ensure PAD Program design and curriculum is in accordance with the recommendations from the HSFC/O (AHA guidelines);
- Provide direction and leadership for continuing PAD awareness, education, quality assurance, and continuous quality improvement;
- PAD SCA event data will be retrieved by Paramedic Service and will include:
 1. SCA event data
 2. SCA written report (from responders)
- PAD SCA events will be reviewed by the PAD Coordinator (Paramedic Superintendent);
- The PAD Coordinator will make recommendations including corrective action to ensure public safety;
- Following a PAD use, the PAD Coordinator (or delegate) will have a follow - up session with the PAD site to discuss the event and provide support to those involved.



Site Coordinator (local person at the site)

Site Coordinator should be a highly motivated person with previous training in first aid and CPR, and who has prior involvement with health and safety. This individual will be the principal person responsible for ensuring:

- Regular contact with the sites PAD expert;
- That PAD signs are posted and highly visible as recommended;
- That monthly PAD checks are completed and documented;
- That appropriate PAD maintenance programs are adhered to as specified by the manufacturer;
- Keep records for responders including PAD awareness sessions
 - Certification dates for CPR and AED;
 - Recertification dates as outlined by the specific training agency;
- The transfer of all SCA event data (both AED data and PAD responder report) should be kept secure and confidential (i.e. locked up) until picked up by Paramedic Service or the approved delegate.

PAD Responder

A PAD Responder is an individual who has successfully completed a certification program (i.e. HSFC/O, St. John Ambulance, Red Cross etc.). Those trained will be instructed to only apply the Automated External Defibrillator (AED) to a victim who is found to be unresponsive with no signs of life.

PAD Assistance

Any person willing to help another is protected by Good Samaritan Law in Ontario. Hands Only CPR and AED use can be done by anyone willing to help. AEDs are programed to coach a lay rescuer through the procedure. Although we



would encourage PAD awareness and CPR certification any help done safely is better than doing nothing.

