




# INFORMATION REPORT

<b>TO:</b>	Chair and Members Emergency and Community Services Committee
<b>COMMITTEE DATE:</b>	November 16, 2023
<b>SUBJECT/REPORT NO:</b>	Cardiac Safe City and CPR Training (HSC23048) (City Wide)
<b>WARD(S) AFFECTED:</b>	City Wide
<b>PREPARED BY:</b>	Russell Crocker (905) 546-2424 Ext. 7739
<b>SUBMITTED BY:</b>	Michael Sanderson Chief, Hamilton Paramedic Service Healthy and Safe Communities Department
<b>SIGNATURE:</b>	

## COUNCIL DIRECTION

At the Emergency and Community Services Committee on January 18, 2012, Council approved the following:

“That staff be directed to report to the Emergency and Community Services Committee no less than once annually with respect to training members of the community to perform cardiopulmonary resuscitation techniques as well as the frequency of bystander cardiopulmonary resuscitation in the setting of witnessed sudden cardiac arrest in the community.”

## INFORMATION

### PURPOSE

The purpose of this report is to summarize the Cardiac Safe City program, specifically the placement and management of automated external defibrillators within the City of Hamilton.

### BACKGROUND

A sudden cardiac arrest is a potentially fatal condition, where the heart stops beating and can't provide blood and oxygen to vital organs. Approximately 35,000 Canadians

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OUR Vision: To be the best place to raise a child and age successfully.

OUR Mission: To provide high quality cost conscious public services that contribute to a healthy, safe and prosperous community, in a sustainable manner.

OUR Culture: Collective Ownership, Steadfast Integrity, Courageous Change, Sensational Service, Engaged Empowered Employees.

experience sudden cardiac arrest outside of a hospital each year in Canada, where only 1 in 10 people survive (Heart and Stroke Foundation, 2023). With actions that include cardiopulmonary resuscitation (CPR), and the application of energy to the heart (defibrillation), survival can increase twofold (Heart and Stroke Foundation, 2023). Between 2020 and 2022, Hamilton Paramedic Service responded to 3,564 sudden cardiac arrests in the City of Hamilton. Of these 3,564 patients, bystanders and family members administered cardio-pulmonary resuscitation 728 times and used an automated external defibrillator in six cases (Hamilton Paramedic Service - ESO DoT, 2023).

Cardiopulmonary resuscitation, commonly known as “CPR”, is a procedure not only used by healthcare professionals, but more importantly, lay persons in the community with or without the assistance of an Ambulance Communication Officer (paramedic dispatcher). This procedure effectively circulates blood, that re-establishes blood flow to vital organs and effectively “buys time” for these organs until the arrival of an automated external defibrillator and/or emergency services arrive.

Automated external defibrillators are a safe, easy to use device that provides a “shock” to the heart, to restore a person’s normal heart rhythm. Currently Hamilton Paramedic Service tracks 467 automated external defibrillators to coordinate and maximize the potential use of these life saving devices. Approximately 421 of these devices are directly operated by the City of Hamilton through previous Federal and Provincial grants. Through the City of Hamilton’s strategic direction, and Hamilton Paramedic Services commitment to coordinating the program, our corporation is well positioned to meet the requirements of the *Defibrillation Registration and Public Access Act* respecting registration of and access to defibrillators in the community.

## LEGISLATION

Bill 141, *Defibrillation Registration and Public Access Act* received Royal Assent in 2020. The Act imposes certain requirements respecting the registration, installation, maintenance, testing and availability of defibrillators on designated premises or public premises. While Regulations under the Act have not yet been promulgated, it is prudent to ensure operational policies and development activities be undertaken in accordance with the broad outlines of the Act in preparation for the anticipated Regulatory requirements.

## FINANCIAL

Initial capital funding for the automated external defibrillator program and related training, came from a variety of Federal and Provincial grants dating back to 2007. To assist with management of these assets, capital reserves were assigned to the program, that would ensure continued access to these life-saving devices.

The gross consumable expenses for device maintenance are as follows:

<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
\$30,178	\$100,041	\$75,822	\$118,641

These expenses are related to:

1. Unit Replacement - Automated external defibrillators have a planned 10-year life cycle and should be replaced or refurbished at this interval to ensure reliability when needed.
2. Consumable Replacement - As with many medical devices, there are accessory items of the automated external defibrillator that require replacement due to expiry. For automated external defibrillators this includes batteries and defibrillation pads. As with unit replacement, by replacing expired consumables, there is less of a chance of machine failure during an emergency.

The operating expenses to support public access defibrillation have been a part of the Paramedic Service operating budget since 2012.

## REPORT

Part of being a Cardiac Safe City, is promoting active and healthy lifestyles, combined with the ability for our community to react when these preventative lifestyles fail, and a sudden cardiac arrest happens.

Through the *Defibrillation Registration and Public Access Act* (Legislative Assembly of Ontario, 2020), the Province of Ontario has also acknowledged the seriousness of a community's ability to respond to sudden cardiac arrests.

To accomplish this, the Act states that every person who owns or operates a designated premise at which a defibrillator is installed shall:

- Ensure that any defibrillators installed at the premises are available for use in locations that facilitate easy access to the defibrillator, as described in the regulations
- Ensure that the location of a defibrillator at the premises is appropriately indicated with signs in accordance with the regulations
- Ensure that any defibrillator installed at the premises is maintained and tested in accordance with the manufacturer's guidelines and with any other guidelines as may be prescribed

- Ensure that training is undertaken by prescribed persons for the use of a defibrillator, according to a prescribed training and education guidelines
- Ensure installed defibrillators are registered within 30 days, and
- Update the registrar of any changes to the automated external defibrillator status or location

To assist with the management of these assets and move forward with aligning the automated external defibrillation program to this legislation, Hamilton Paramedic Service uses a free database that monitors and tracks expiry dates of these devices and their consumables. This database also allows for the tracking of Epinephrine Auto Injectors, used for severe allergic reactions. There is further opportunity to also co-locate Naloxone and tourniquets into these locations, effectively allowing the City of Hamilton through their automated external defibrillator program to expand their community life-saving efforts to include opioid overdoses and severe bleeding.

Information from this database is currently shared with the Ministry of Health Central Ambulance Communications Centre (paramedic dispatch). When a sudden cardiac arrest is suspected by the dispatcher, they will share where the closest automated external defibrillator for use by 911 caller.

## CONCLUSION

Research shows that early 911 activation, bystander cardio-pulmonary resuscitation, defibrillation using an automated external defibrillator, rapid ambulance response, and a high level of qualified paramedic care increases the positive outcomes from sudden cardiac arrest. Combined with legislative requirements in the *Defibrillation Registration and Public Access Act*, the responsibility of the City of Hamilton to manage their automated external defibrillators has now and will continue to increase.

To accomplish this, Hamilton Paramedic Service will continue strategies that:

- Meet new Provincial legislation
- Expand the number of automated external defibrillators in the community
- Increase awareness in the community of the importance of cardio-pulmonary resuscitation, early defibrillation, and a how a person's actions are protected from liability under the *Good Samaritan Act*

Once a solid foundation has been established, future improvements will:

- Standardize the placement of Epinephrine Auto-Injectors (for severe allergic reactions) and Naloxone kits (for opioid overdoses) into the automated external defibrillator cabinets
- Increase cardiopulmonary resuscitation training in the community through hands-on training
- Implement a responder notification system that alerts residents (who voluntary choose to sign up to the app) of a medical emergency close to them, and where the closest automated external defibrillator is to their locations
- Develop a Volunteer Community Responder program, that combines the use of the notification app with a more formalized group of responders who wish to assist the community on a more consistent basis
- Utilize technology such as drones, to deliver these life-saving devices/medications to remote and/or parkland areas that may have a delayed response by first responders

#### **APPENDICES AND SCHEDULES ATTACHED**

N/A

#### **BIBLIOGRAPHY**

Heart and Stroke Foundation. (2023). *Cardiac Arrest*. Retrieved from Heart and Stroke Foundation of Canada: <https://www.heartandstroke.ca/heart-disease/conditions/cardiac-arrest>

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