

Hamilton Paramedic Service 2018 Annual Report



Michael Sanderson

Chief, Hamilton Paramedic Service

6/10/2019



“When we work with community partners we improve the care and outcomes of our clients while supporting the well-being of the community”

Joe Pedulla, Supervisor, Community Paramedicine Program



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Message from the General Manager



As the General Manager of the Healthy and Safe Communities Department, I am honoured to accept the Hamilton Paramedic Service 2018 Annual Report as submitted by Chief Michael Sanderson.

Congratulations to Chief Sanderson and his team, for another successful year in maintaining if not exceeding the response time criteria set by Hamilton City Council and the Ministry of Health and Long-Term Care (MOHLTC). Our community can be assured, that when needed, the Hamilton Paramedic Service will respond in a timely manner.

As part of the Healthy and Safe Communities Department, the Hamilton Paramedic Service is responsible for providing health and social supports that allow people to lead productive lives. The collective divisions that encompass the Healthy and Safe Communities Department depend on collaboration, integration and partnerships to maximize the potential of the programs we provide. As a result, the Hamilton Paramedic Service in partnership with the City of Hamilton's Public Health Services and CityHousing Hamilton, now offers programs including Nicotine Replacement Therapy, Influenza Immunization and monitoring of complex medical conditions through technology. These programs assist in mitigating off-load delays at hospitals through managing health concerns in the community thereby preventing emergency hospital visits.

In 2018, the Hamilton Paramedic Service in partnership with area hospitals, continued to explore additional mechanisms to assist in reducing off-load delays at hospitals. One such mechanism is the 'Response Dashboard' which allows real-time monitoring of ambulance and hospital resources. This technology was leveraged in collaboration with another paramedic jurisdiction, which allows both hospital and paramedic management to monitor, react and predict system issues. The result is system efficiency, increased quality of care and cost effectiveness through partnering with other services.

In addition to assisting those who are hurt or sick, in 2018 the Hamilton Paramedic Service staff continued to support our community and help people in need in other ways. The Hamilton Paramedic Service staff volunteered and partnered with community agencies to help provide nutritious vegetables and fruits to residents, career options to youth, toys and food to children and adults in need during the holidays and brought awareness to important causes in the community. I want to thank all staff that volunteered to make these programs a success.

In closing, I would like to thank Hamilton's City Council for continuing to support the Hamilton Paramedic Service with the enhancement of an additional ambulance in 2018. Thank you to Chief Sanderson, OPSEU, CUPE and the entire staff for their continued professionalism and resilience in making our paramedic service among the best in the province.

I look forward to our work in 2019, as we continue to deliver high quality service to this community and work with our partners to keep Hamiltonians healthy and safe.

A handwritten signature in black ink, appearing to read 'P. Johnson', written in a cursive style.

Paul Johnson, General Manager
Healthy & Safe Community Services Department

Message from the Chief



It is all about the team. The team of front line paramedics, supervisors, schedulers, logistics technicians, support staff, and of course our managers. It takes a team to ensure the timely, effective, and efficient high-quality care we provide to the residents and visitors of our great city. I am incredibly proud on behalf of the Hamilton Paramedic Service team to be able to submit this 2018 Annual Report for Hamilton Paramedic Service – a report that reflects their work, their activities, their passions and of course their results.

While we had another incredibly busy year – increases in 911 events, increases in responses, and increases in patients being transported to hospital - these simple metrics do not tell the story of what we do. The real story is about the commitment, courage, compassion, and competence of our team.

Speaking of teamwork, what stands out to me as I reflect on 2018 is the strength of partnerships on which we rely to collectively serve the community. From working with our colleagues day-to-day to collaborating with other City Departments, Councillors, the Province and partnering with external organizations such as hospitals, universities, schools and not-for-profit agencies, these relationships help to expand the impact of our work. While partnerships are not always easy, working to maintain them and to support each other is key to making the whole more than the mere sum of its parts.

Despite the daily challenges faced by our paramedics, they continued to give back to the community above and beyond the care they give every day on the job. Paramedics partnered with agencies to tend to a garden where food goes to shelters, served food at restaurants to raise awareness to their causes, collect toys and food during the holidays to support families in needs and raise awareness of health and wellness issues such as Autism, breast and prostate cancer and mental health.

Real time operational dashboards were implemented to assist in dealing with capacity, process, and balancing of hospital distribution. The shift to in vehicle technology supporting our paramedics and providing opportunities for systems improvement was started and will be completed in 2019.

As we move into new challenges and potentially significant changes in 2019, my team will continue to focus on delivering professional services and improving performance in a fiscally responsible manner.

I would like to thank Mayor Eisenberger, members of Council and the City's Senior Leadership Team for their active support of our Paramedic Service. I would also like to thank General Manager Paul Johnson for his leadership and guidance as we continue to face and move through challenges.

A special thank you to the entire Hamilton Paramedic Service team for your dedicated service, exceptional skills, and unwavering compassion. Our community is better for having you serve it.

A handwritten signature in black ink, appearing to read "M. Sanderson".

Michael Sanderson, Chief
Hamilton Paramedic Service

Service Overview

Services

The Hamilton Paramedic Service (HPS) provides pre-hospital advanced medical and trauma care, as well as the transportation of patients from emergency incidents to appropriate health care facilities.

HPS also undertakes demand mitigation activities including senior clinics in select city housing locations, community paramedic activities, public education, emergency health care and safety promotion, and risk prevention activities in neighbourhoods and public facilities including provision and maintenance of public access defibrillators in all City of Hamilton facilities.

HPS is the designated sole land ambulance service provider for the City of Hamilton to perform functions mandated by the *Ambulance Act, R.S.O. 1990, c. A.19*, specifically to:

- a) employ persons to provide land ambulance services in the municipality in accordance with the Act;
- b) properly provide land ambulance services in the municipality in accordance with the needs of persons in the municipality; and,
- c) ensure the supply of vehicles, equipment, services, information and any other thing necessary for the proper provision of land ambulance services in the municipality in accordance with this Act and the regulations.

Profile of Hamilton

Formerly known as the Regional Municipality of Hamilton-Wentworth, the City of Hamilton is a single tier municipality comprised of the six communities that amalgamated in 2000:

- City of Hamilton
- City of Stoney Creek
- Town of Ancaster
- Town of Flamborough
- Town of Dundas
- Township of Glanbrook

The 'new' City of Hamilton spans 1,117 square kilometres and wraps around the westernmost part of Lake Ontario. The city's northern limit is marked by the Hamilton Harbour. The Niagara Escarpment runs through the middle of the entire city dividing the cityscape into lower and upper portions.

The HPS provides service to a population of over 536,917 Hamiltonians. The population density is approximately 480.6 people per square kilometres (Statistics Canada, Census 2016).

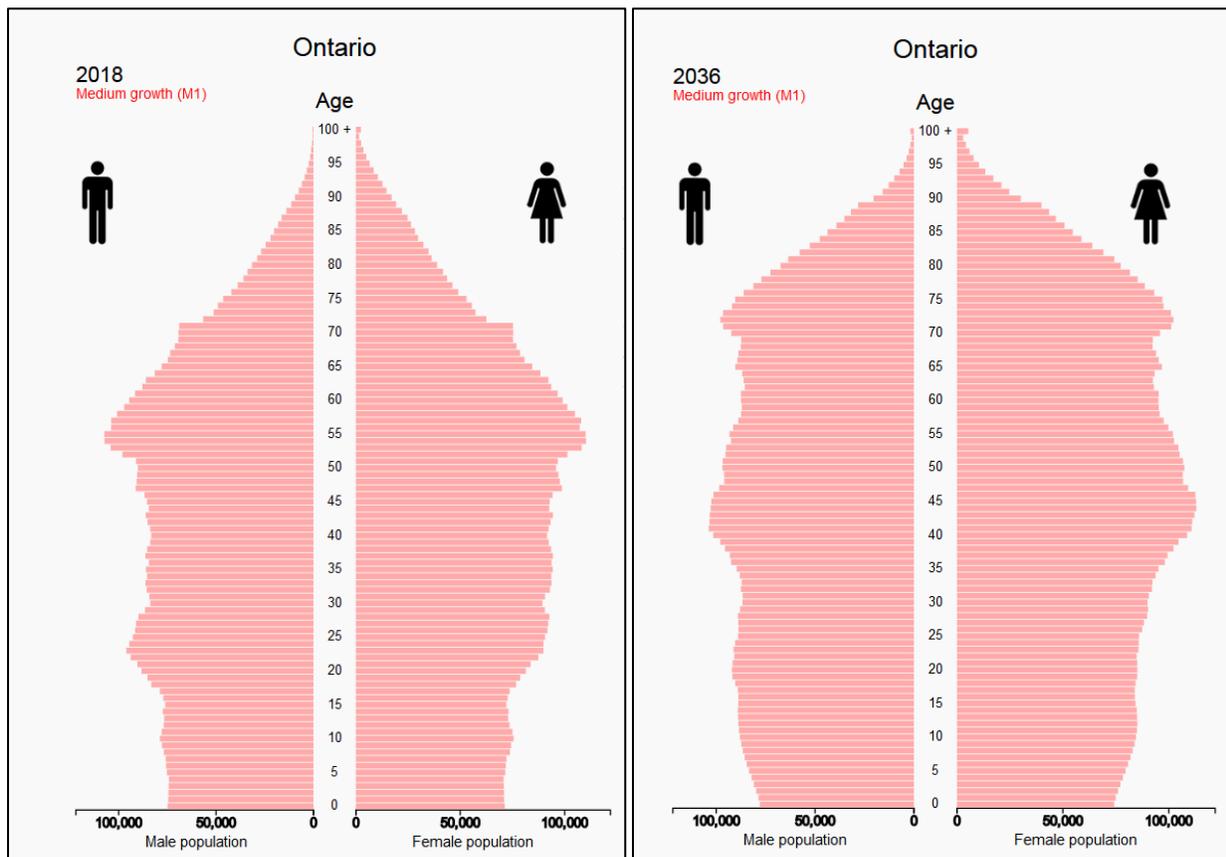
Hamilton's population is an aging one with about 17% of its residents or 93,000 people aged 65 years or older. Children aged 14 years and under accounted for approximately 16% of the city's population. For the first time in Hamilton, seniors outnumber children (Statistic Canada, Census 2016).

A review of the Electronic Patient Call Reports (ePCR) for 2018 shows that 43% of patient interactions with Hamilton Paramedics was for the age group of 65 and older.



43% of patients attended to by Hamilton Paramedics are 65 years of age or older

According to Statistics Canada (Census 2016) Ontario can expect to see a continued increase in the population aged 65 years and older. As shown below, by 2036 there will be more people in Ontario compared to 2018 with a sharp increase in the number of seniors as baby boomers swell the ranks of seniors.



Source: Statistics Canada, Census 2016

In Ontario, the number of seniors aged 65 and over is projected to almost double by 2041. In 2017, seniors made up about 2.4 million or 16.7 per cent of population. This is expected to increase to almost 4.6 million or 24.8 per cent of Ontario’s population. The fastest growing group of seniors will be the older seniors. The number of people aged 75 and over is expected to rise from 1.0 million in 2017 to 2.7 million by 2041. Those people who are aged 90 and older are projected to more than triple in size, from 120,000 to 400,000 (Ontario Ministry of Finance).

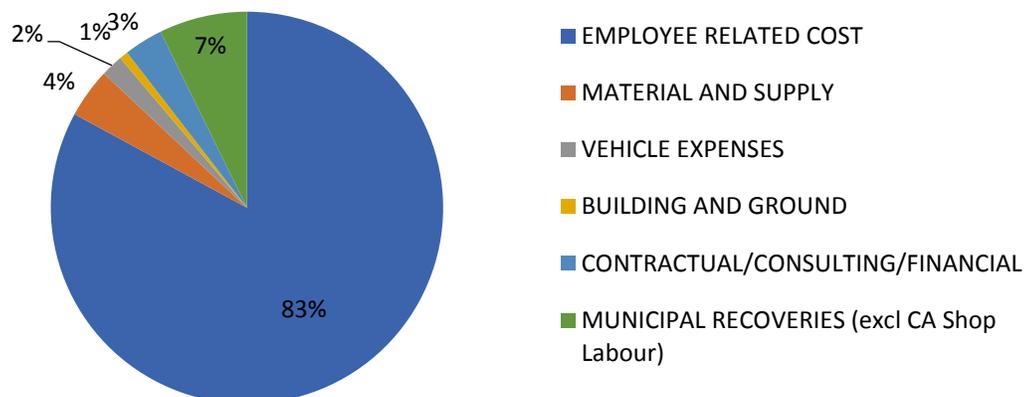
This “grey tsunami” or dramatic increase in the senior population forecasted by Statistics Canada and the Ontario Ministry of Finance will significantly increase the demand on services provided by the HPS over the next 20 years.

Finances

For 2018, the HPS had an overall operating budget of \$48,834,643. However, the province provides funding for 50% of these costs. The allocation of funds per each cost category and percentage of overall budget is as follows:

COST CATEGORY	\$	%
EMPLOYEE RELATED COST	40,490,916	83%
MATERIAL AND SUPPLY	1,994,213	4%
VEHICLE EXPENSES	890,086	2%
BUILDING AND GROUND	349,053	1%
CONTRACTUAL/CONSULTING/FINANCIAL	1,561,325	3%
MUNICIPAL RECOVERIES (excl CA Shop Labour)	3,549,050	7%
Total	48,834,643	100%

Hamilton Paramedic Service 2018 Year End Operating Costs





In Ontario, regional municipalities have responsibility for delivering and funding EMS while the province regulates and provides funding for 50% of land ambulance costs.

With 84,078 unit responses travelling 2,544,391 kilometres to attend to patients, a total of 66 vehicles are responsible for paramedic operations. The HPS has been able to achieve cost effectiveness of running vehicles through partnerships within the City of Hamilton. Through corporate fuel purchasing arrangements and utilizing the Hamilton Fire Department vehicle maintenance services running costs are kept below expectations while maintaining high reliability.



Materials & Supplies
/Response

\$23.72



Total Cost/Response

\$580.83



Vehicle Cost/Kilometre

\$0.52

Organizational Structure

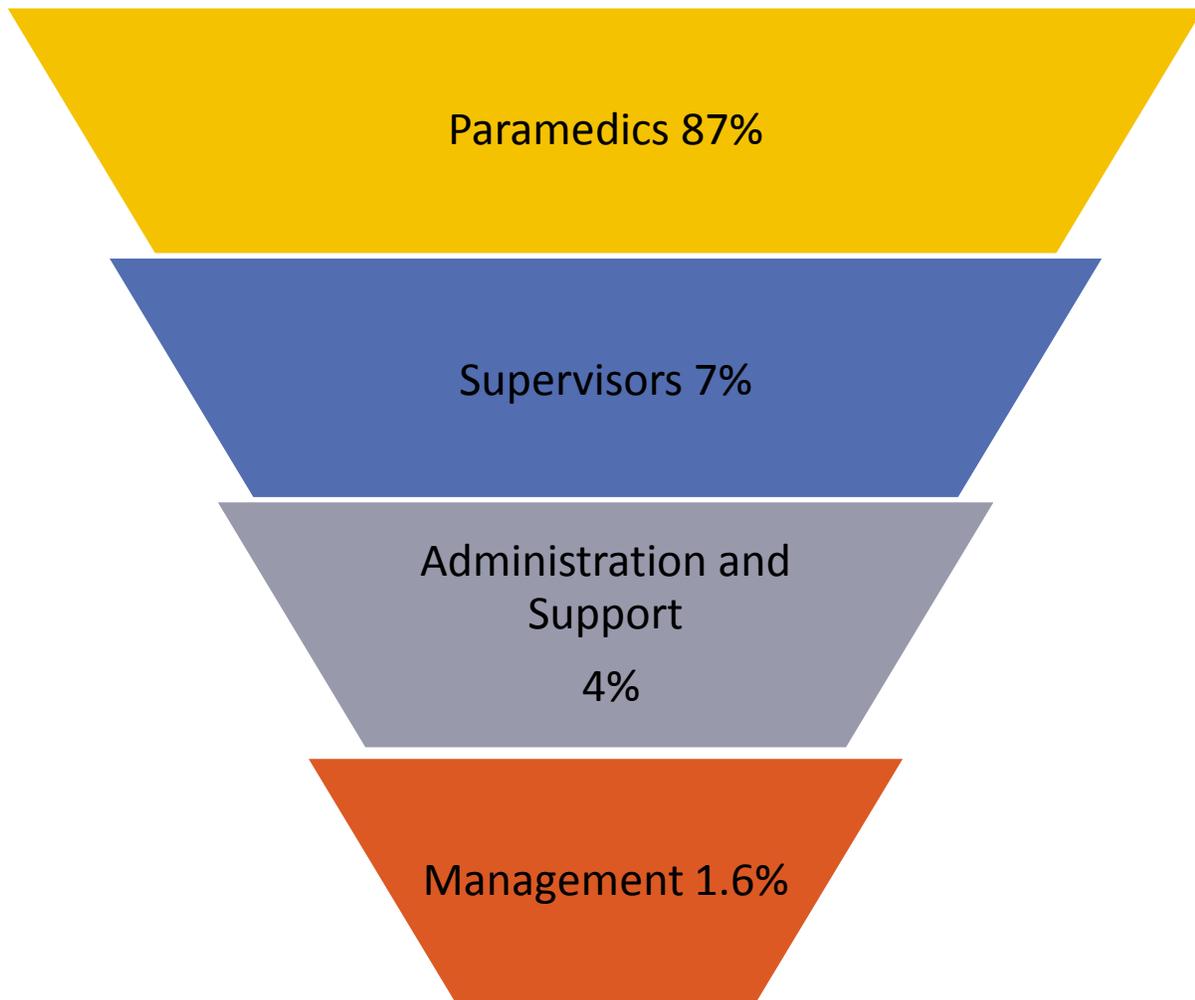
As a hybrid service, the HPS contributes to public safety and is an integral part of the health care system. The HPS helps to promote the health and safety of Hamilton’s residents and visitors through both prevention, response and follow-up activities.

The HPS is situated within the Healthy and Safe Communities Department of the City of Hamilton which enables for collaboration with other divisions focused on similar outcomes for the community.

The Paramedic Chief reports to the General Manager of the Healthy and Safe Communities Department and is responsible to lead the planning and operationalization of HPS which is comprised of the following sections:

- Office of the Chief
 - Responsible for strategic vision, direction, and planning
- Operations Section
 - Responsible for Providing oversight on matters of deployment and resource utilization
- Logistics Section
 - Responsible for providing support to all sections through procurement and asset management
- Performance and Development Section
 - Responsible for ensuring regulatory compliance and quality improvement

The HPS employs a total of 384 staff including both full and part time. While paramedics provide direct frontline services to residents/visitors, supervisors, administration and support and management provide a variety of supportive and regulatory functions to meet Ministry of Health and Long Term Care (MOHLTC) mandates. The HPS workforce breaks down as follows:



PARTNERSHIP



In Ontario, Paramedics are not under the Regulated Health Professions Act. Instead, they receive authorization by a physician, known as a Medical Director, to perform controlled medical acts classified under the College of Physicians and Surgeons of Ontario.

Scope of Practice

Through a partnership between the HPS and Hamilton Health Sciences Centre (HHSC), both Primary and Advance Care Paramedics are provided the training and certification to render patient care to the residents and visitors in Hamilton. In 2018 the HPS had a total of 269 Primary Care Paramedics (75 of whom were part time) and 66 Advanced Care Paramedics (11 of whom were part time).

Primary Care Paramedics (PCP) are authorized by a physician to perform controlled medical acts that when combined with other medical assessments are able to effectively treat the majority of patients' illnesses or injuries. An outline of their scope of practice is as follows:

PCP SCOPE OF PRACTICE

MEDICATIONS

- Acetaminophen (↓ mild pain)
- Aspirin (↓ mortality during heart attack)
- Epinephrine (↓ histamine in severe allergic reaction)
- Glucagon (↑ blood sugar levels)
- Ibuprofen (↓ mild pain)
- Ketorolac (↓ moderate pain)
- Naloxone (reverse opioid overdose)
- Nitroglycerine (↑ blood flow during angina)
- Oxygen
- Salbutamol (relax muscles in lungs)

PROCEDURES

- 12 Lead Electrocardiogram (diagnose heart attack)
- Supraglottic Airway (↑ ventilation/oxygenation)
- Airway Suctioning (↓ mucous/foreign bodies)
- Capnometry (evaluation of respiratory system)
- Continuous Positive Airway Pressure (↓ severe respiratory distress)
- Defibrillation (eliminate lethal irregular heartbeat)
- Peripheral Capillary Oxygen Saturation (evaluation of oxygen in blood)
- Glucometer (evaluate of blood sugar in blood)
- Emergency Dialysis Disconnect (removal of at home dialysis unit if transport required)
- Termination of Resuscitation (discontinue resuscitation if determined futile)
- On-Line Medical Direction (physician consult via phone)

Based on call information provided to the MOHLTC dispatch centre or at the request of a PCP, Advance Care Paramedics (ACP) are able to perform additional practices to treat more complex medical or traumatic injuries as outlined below:

ACP SCOPE OF PRACTICE

MEDICATIONS

- Adenosine (↓ heart rate)
- Atropine (↑ heart rate)
- Calcium Gluconate (↓ blood potassium levels)
- Dextrose 50% (↑ blood sugar levels)
- Dimenhydrinate (↓ nausea/vomiting)
- Diphenhydramine (↓ moderate allergic reaction)
- Dopamine (↑ heart rate and blood pressure)
- Epinephrine (↑ blood flow during sudden cardiac arrest)
- Lidocaine (↓ irregular heartbeats & "numbing" of tissues)
- Midazolam (sedation & ↓ seizure activity)
- Morphine (↓ severe pain)
- Normal Saline Bolus (↑ blood pressure)
- Sodium Bicarbonate (↓ acidosis in blood)
- Phenylephrine (↓ blood flow to tissue)

PROCEDURES

- Endotracheal Intubation (↑ ventilation/oxygenation)
- Tracheal Tube Introducer Device (assist with Endotracheal intubation)
- Foreign Body Airway Removal (remove object from airway)
- Central Venous Access Device (fluid or medication administration via arterial line)
- Intraosseous Therapy (fluid or medication administration via bone marrow)
- Intravenous Therapy (fluid or medication administration via vein)
- Needle Thoracotomy (↓ excessive air in lungs)
- Synchronized Cardioversion (↓ heart rate)
- Transcutaneous Pacing (↑ heart rate)

With the province’s introduction of the “Patients First: Action Plan for Health Care” in 2015 the HPS collaborated with a variety of community and health partners to establish the Community Paramedicine Program. Community Paramedics (CP) including Social Navigators who deliver this program are certified PCPs or ACPs and possess additional training focused on chronic health and social determinants of health that may contribute to a resident having to use 911 on multiple occasions.

COMMUNITY PARAMEDIC SCOPE OF PRACTICE

Additional Training

- Enhanced primary care assessment skills
- Chronic disease education and coaching
- Clinical rotations with local partners
- Senior citizen neglect and abuse assessment
- Falls risk and prevention techniques
- Community Health Assessment Program (CHAP)
- Aboriginal persons awareness and transition from acute care facilities
- Health Links awareness and orientation of CHF and COPD transitioning from acute care facilities

SOCIAL NAVIGATOR SCOPE OF PRACTICE

Additional Training

- Enhanced mental health and addictions assessment skills
- Forensic Research
- Acceptance and Commitment Therapy
- Professional Boundaries
- Give, Take, Care Learning
- FASD and the Law
- Mental Health First Aid

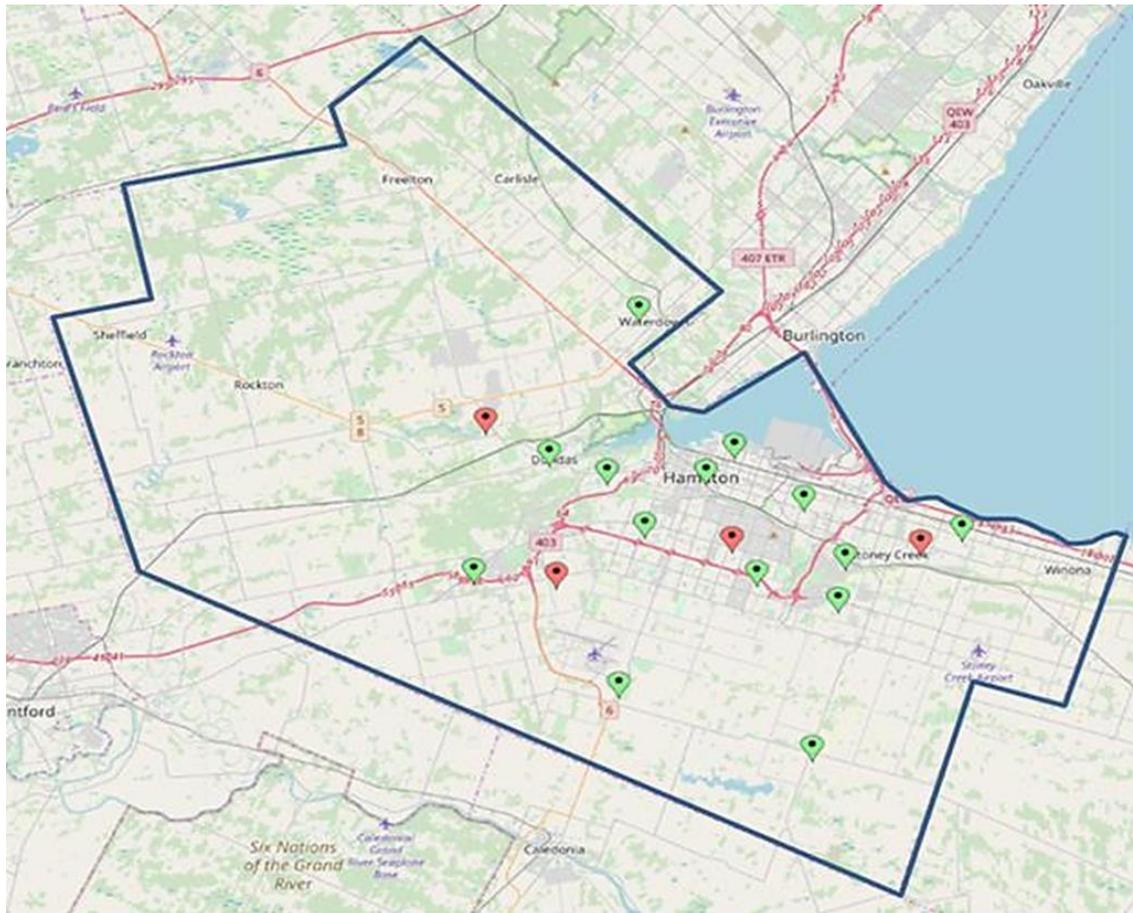


Two Community Paramedics are 100% funded by the Hamilton-Niagara-Haldimand-Brant Local Health Integration Network (HNHB-LHIN)

Staffing & Logistical Resources

Facilities

With a diverse community of both urban and rural landscape, the HPS strategically deploys its resources from 20 Paramedic Response Stations (shown on the map below) that are shared with Hamilton Fire Department. Depending on location, a facility may deploy a combination of ambulances, Paramedic Response Units (PRUs) and supervisor vehicles. Stations are temperature controlled due to temperature sensitive medical supplies, contain additional equipment to stock vehicles and administrative quarters for completion of required documentation. In addition, kitchen and washroom facilities are provided to allow for appropriate rest periods of staff.



= At least one unit is ACP at the station



= Station is PCP only

PARTNERSHIP

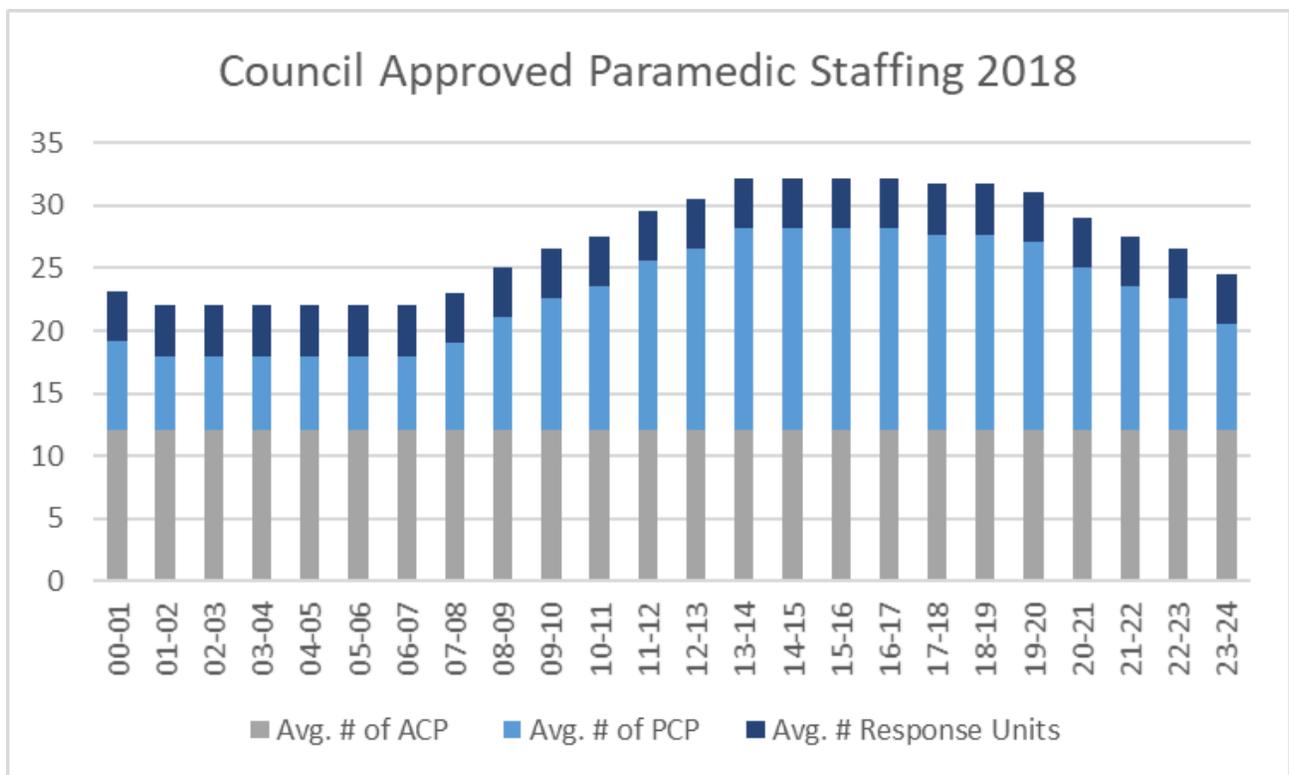


The HPS shares 20 stations with the Hamilton Fire Department

Staffing

The HPS utilizes staggered start times to allow for optimal coverage during the times when events and responses are at their peak in a 24 hour period. In addition for allowing optimal responses to 911 events, this model allows for the potential reduction to end of shift overtime by allowing a “layered” response for paramedics near the end of their shift. Through these staffing models, the HPS provides efficient and cost effective paramedic services to residents and visitors. The diagram below illustrates the current staffing of the HPS vehicles, indicating the number of vehicles on the roster at varying times of day when there is high demand on service (or increased number of events). While staff may start their shift at a particular station, they are routinely moved to alternate stations or locations to provide emergency response coverage. The factors affecting where coverage is required include:

1. Time of day
2. Travel time of vehicles
3. Number of available ambulances
4. Historical data of where responses likely to occur
5. Road closures or other geographical limitations

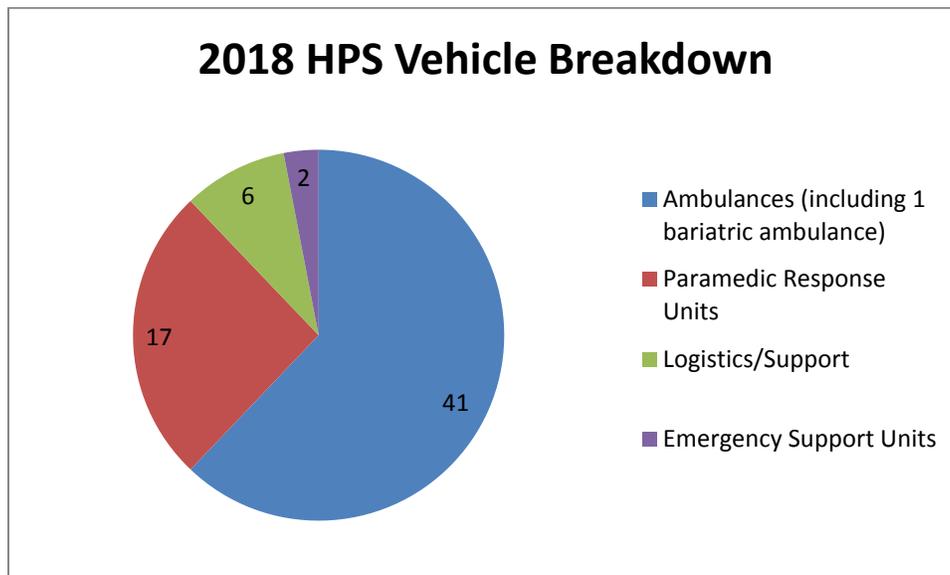


When calculating staffing requirements, the HPS utilizes a formula that considers the following factors:

1. Number of hours Paramedics are available during a shift
2. How many responses and transports are attended to by Paramedics
3. Finally but most important, is Time on Task (TOT). This is the time it takes from when Paramedics respond to a 911 call, to the time they are clear from the scene/hospital and able to respond to another 911 call. The TOT is largely impacted by Off-Load Delay, that is, the longer the delay, the higher the TOT number is.

Fleet

In 2018, the HPS had a fleet of 66 vehicles consisting of ambulances, Paramedic Response Units, Emergency Support Units and Logistics/Support vehicles (see chart below for breakdown). All vehicles are certified to MOHLTC requirements and applicable standards including conversions to the Original Equipment by the Manufacturer (OEM) systems. The HPS vehicle branding helps to ensure safety during low light conditions as well as meet legislative requirements while maintaining a professional appearance unique to the Hamilton.



Response Overview

The HPS experienced an increase in service demand in 2018 as compared to 2017. The number of events, responses and transports all escalated in 2018.

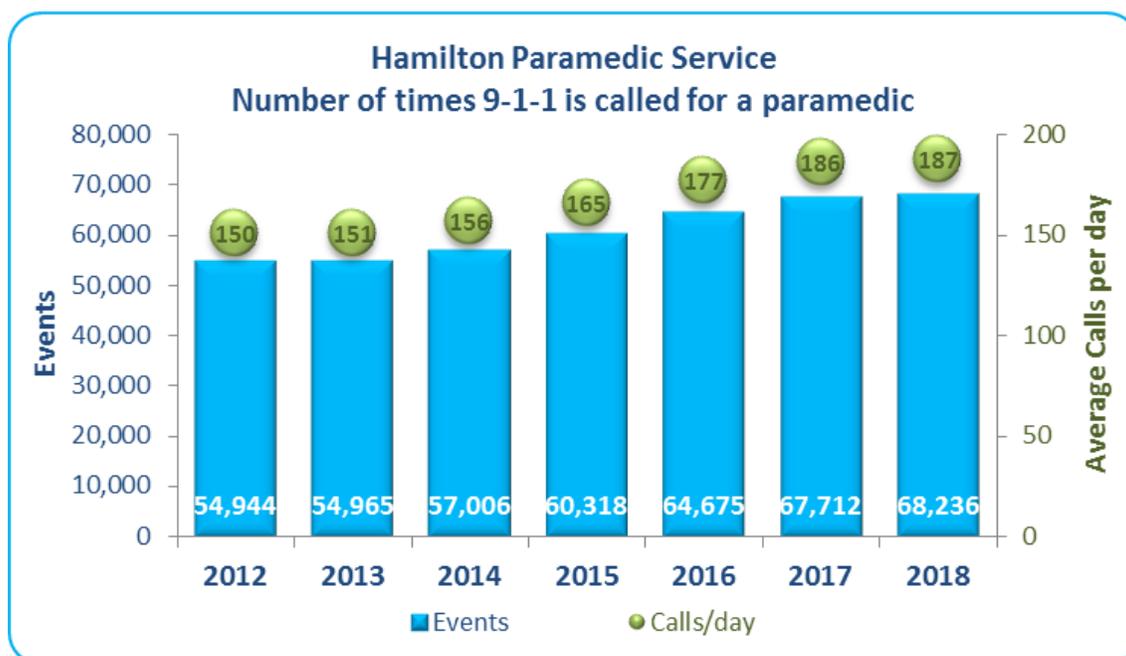
Events

An event is generated every time a person calls 911 and requests the assistance of a Paramedic through the Central Ambulance Communications Centre (CACC). In 2018, the HPS had 68,236 events, an increase of 1% from 2017.



2018 Events
68,236

The HPS has seen an increase in events year over year since 2013 as seen in the chart below. As mentioned earlier, with a growing population and an expected sharp increase in the senior population ages 65 and older, it is anticipated that the number of events will continue to rise over the coming decades.



Responses

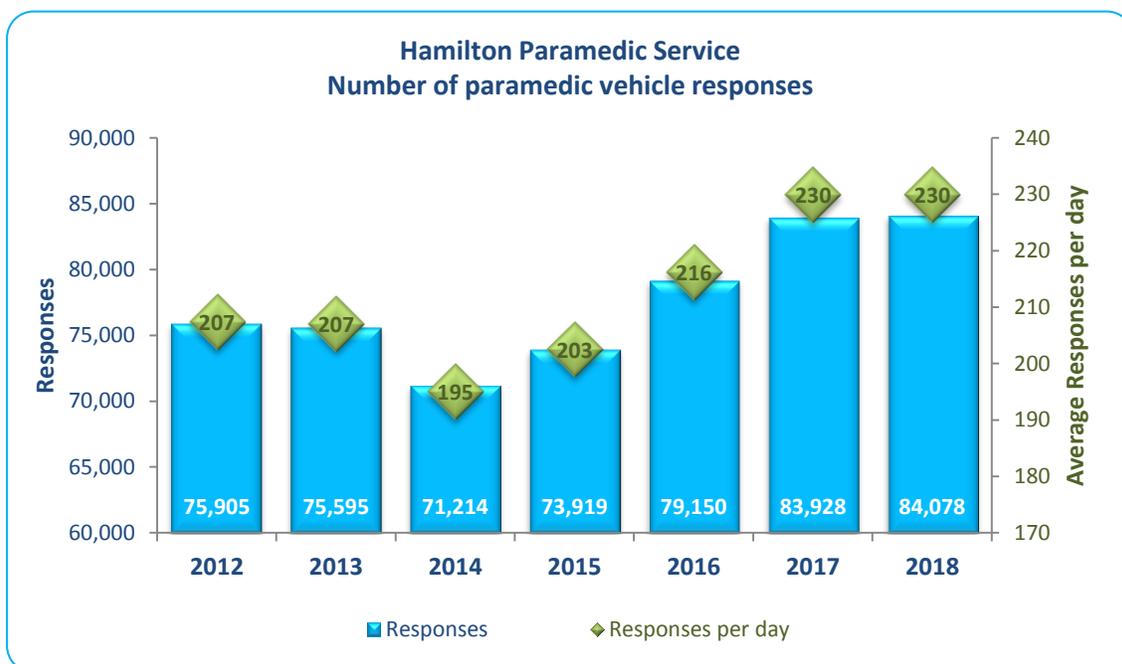
Responses refer to the number of paramedic vehicles that are sent to an event. This number is typically higher than the number of events as sometimes there is more than one vehicle sent to an event. Once an event is received by the dispatch centre, a paramedic vehicle is immediately dispatched to the call to render assistance. In instances such as motor vehicle collisions and complex medical/traumatic emergencies, multiple paramedic vehicles may be assigned to the event. In 2018, the HPS had an increase of 150 responses from 2017 to a total of 84,078 responses.



2018 Responses

84,078

The chart below illustrates the number of responses per year since 2012 along with the average number of responses a day during that year. The chart shows continued incline in the number of responses since 2014.





As a result of changes to the Ambulance Act, the HPS is collaborating with the MOHLTC and other community partners to enable paramedics to treat patients and then refer them to another health care practitioner or transport them to a facility, other than a hospital, for less acute cases

Transports

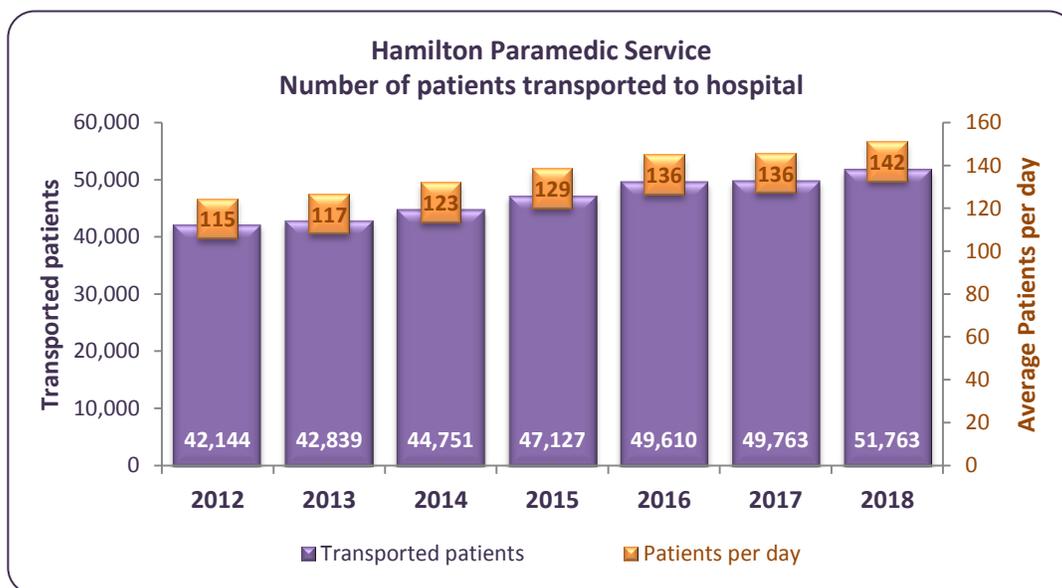
Transports are the total number of times patients are transported to hospitals by Paramedics. This number is typically lower than the number of events, as some patients decline or do not need to be taken to the hospital once assessed by a Paramedic. In 2018, the HPS had an increase in number of transports by 4% from 2017 to a total of 51,763 transports.



2018 Transports

51,763

The number of transports continue to rise year over year as indicated in the chart below. With 911 being a readily available and easily accessible service and for people who do not have access to health care providers such as a primary care physician, Paramedics are sometimes called to provide care and/or advice for minor illnesses and injuries. Paramedics attend to these patients but transporting them to a medical facility is not required.



In 2018, the total kilometres the HPS vehicles travelled more than 2.5 Million kilometres:

2 5 4 4 3 9 1

Response Time Compliance

The *Ambulance Act of Ontario, Standard 257/00*, requires that every paramedic operator in Ontario is responsible to establish and publicly report on response time performance. The response time performance plan established by the HPS allows the Service to monitor, evaluate and implement continuous quality improvement initiatives to reduce response times year over year. In 2018, the HPS again met the response time standard of achieving the target time in each CTAS category at least 75% of the time, as approved by Hamilton’s City Council and the MOHLTC.

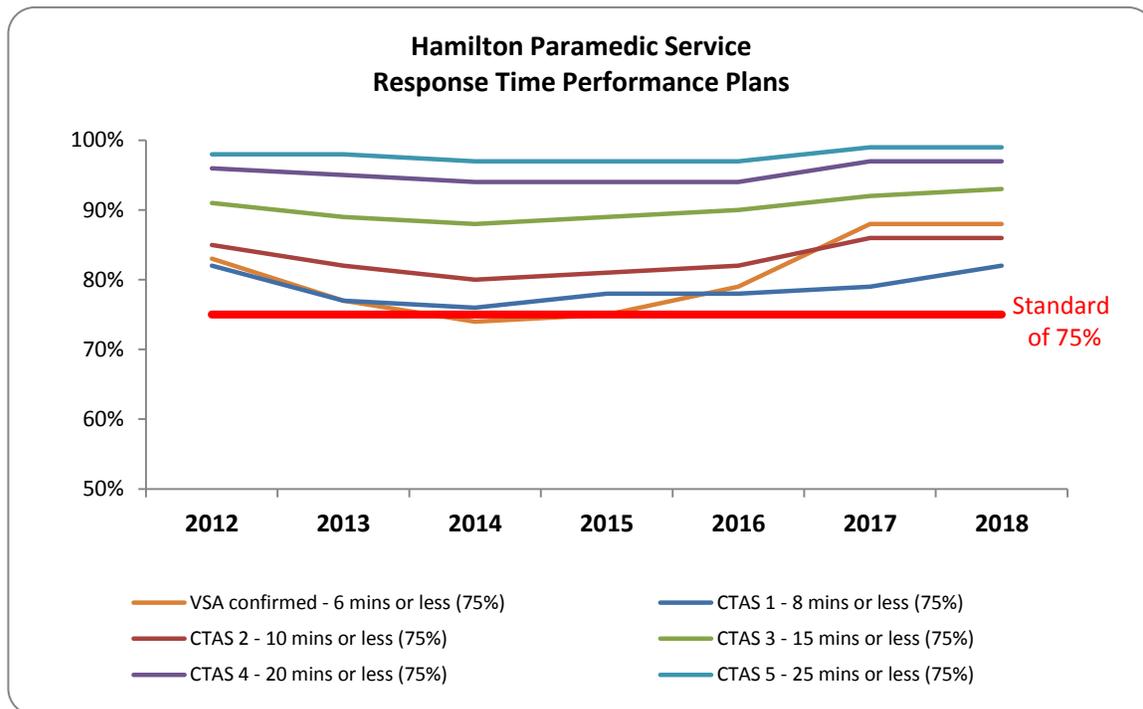
Target Response Times

HPS Response Times

 <p>Defibrillator on Scene</p>	<ul style="list-style-type: none"> • May include Public Access Defibrillator, First Responder or Paramedic Service arrival • 6 minutes (75% or better) 	<p>88%</p>
 <p>CTAS 1</p>	<ul style="list-style-type: none"> • "Resuscitation" • Threats to life, limb or function • Immediate intervention required • COH approved response time • 8 minutes (75% or better) 	<p>82%</p>
 <p>CTAS 2</p>	<ul style="list-style-type: none"> • "Emergent" • Potential threat to life, limb or function • Rapid medical intergency required • COH approved response time • 10 minutes (75% or better) 	<p>86%</p>
 <p>CTAS 3</p>	<ul style="list-style-type: none"> • "Urgent" • Potentially progress to a serious problem requiring emergency intervention • COH approved response time • 15 minutes (75% or better) 	<p>93%</p>
 <p>CTAS 4</p>	<ul style="list-style-type: none"> • "Less Urgent" • Conditions related to patients age and/or distress and/or potential for deterioration or complications • Would benefit from intervention in 1-2 hours • COH approved response time • 20 minutes (75% or better) 	<p>97%</p>
 <p>CTAS 5</p>	<ul style="list-style-type: none"> • "Non-Urgent" • Conditions that are acute but non-urgent. This includes chronic conditions with no evidence of deterioration • Interventions can be delayed or referred to other areas of health care system • COH approved response time • 25 minutes (75% or better) 	<p>99%</p>

These data reflect the patient’s condition after Paramedics arrive on the scene regardless of the priority assigned by the call centre. Variance in the response time number can be affected by a variety of factors including event volumes, geographical location and resource availability. In addition, there is the potential for the dispatch centre to over prioritize the call, leaving reduced resources for higher acuity calls.

The graph below shows that the HPS continued to meet the response time performance plan targets year over year despite the increase in events, responses and transports in 2018:



Through a tiered response agreement, the Hamilton Fire Department also responds to some life-threatening medical calls, to support a quick and effective response.

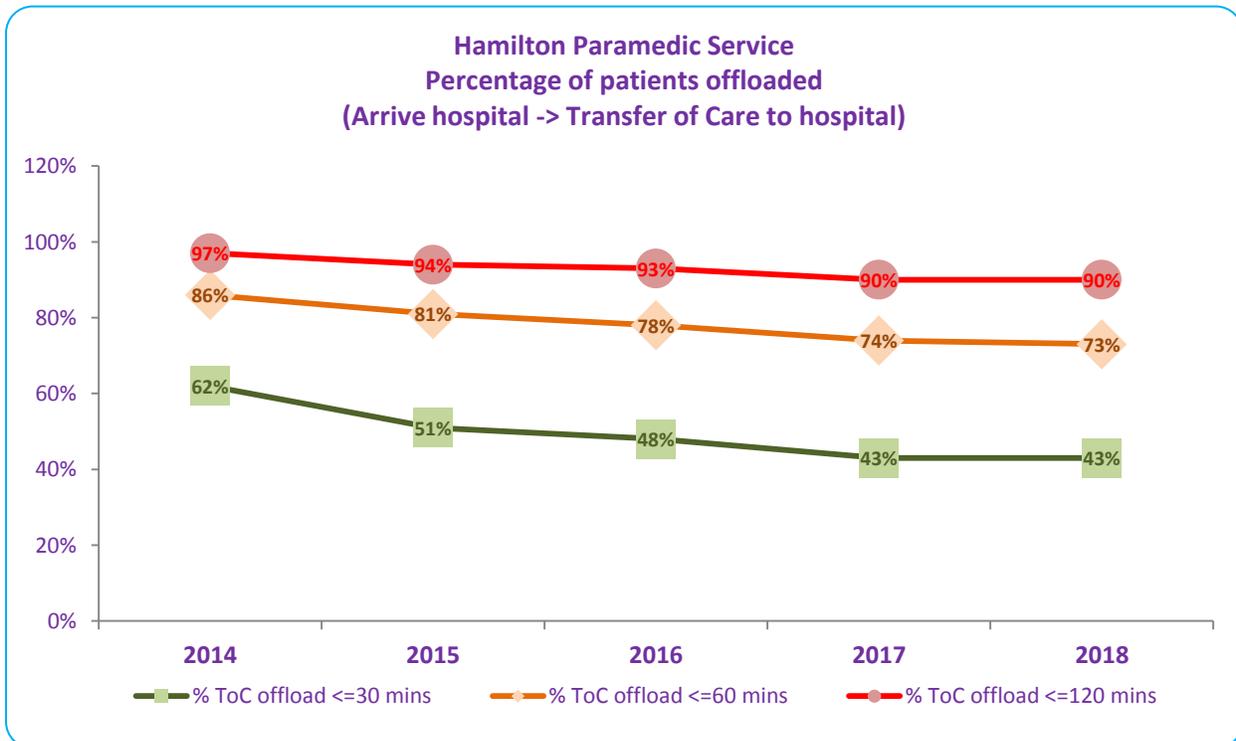
Off-Load Delay

Individual paramedics, and the Paramedic Service, are required to comply with certain standards and directives issued by the MOHLTC in accordance with O. Reg. 257/00 and pursuant to the *Ambulance Act*. The MOHLTC-issued patient care standards definitively require that Paramedics remain with the patient, and continue to care for the patient, until the hospital accepts responsibility for the patients care.

An Off-Load Delay (OLD) occurs when the hospital does not accept responsibility for the care of a patient within 30 minutes of arrival at hospital. In a report submitted to the MOHLTC in 2005 titled “Improving Access to Emergency Services: A System Commitment” (Schwartz, 2005), it was recommended that:

“The time from ambulance arrival to patient placed on an Emergency Department stretcher should be 30 minutes, 90% percent of the time”

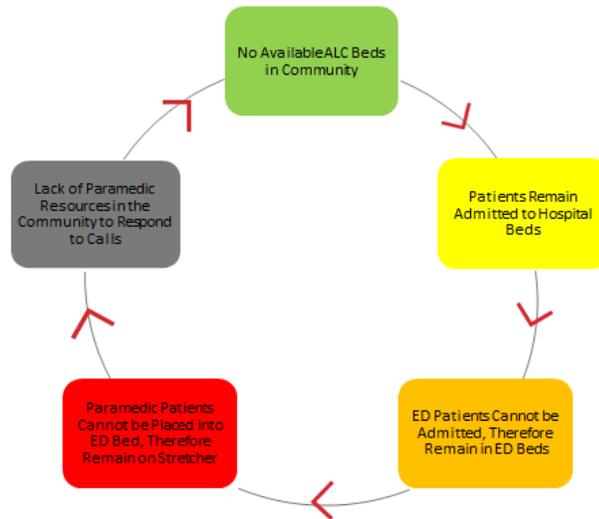
As a result of a variety of system pressures, hospitals in the City of Hamilton continue to struggle to meet this target recommendation. The chart below shows that in 2018 only 43% of transfer of care from Paramedics to the hospital took place in 30 minutes or less. This was the case in 2017 as well and only slightly better in 2016 at 48% of transfer of care occurring within 30 minutes.



One of the main obstacles for hospitals continues to be the number of Alternative Level of Care (ALC) patients in hospital due to a lack of community spaces. Patients who do not need to be in a hospital have nowhere else to go for care so they remain in the hospital occupying a bed which means there is a lack of beds available for more acute care patients.

The delay at hospitals result in a backlog throughout the entire health care system, which impacts the paramedic resources in the community as illustrated in the diagram below.

How OLD Affects Paramedic Resources



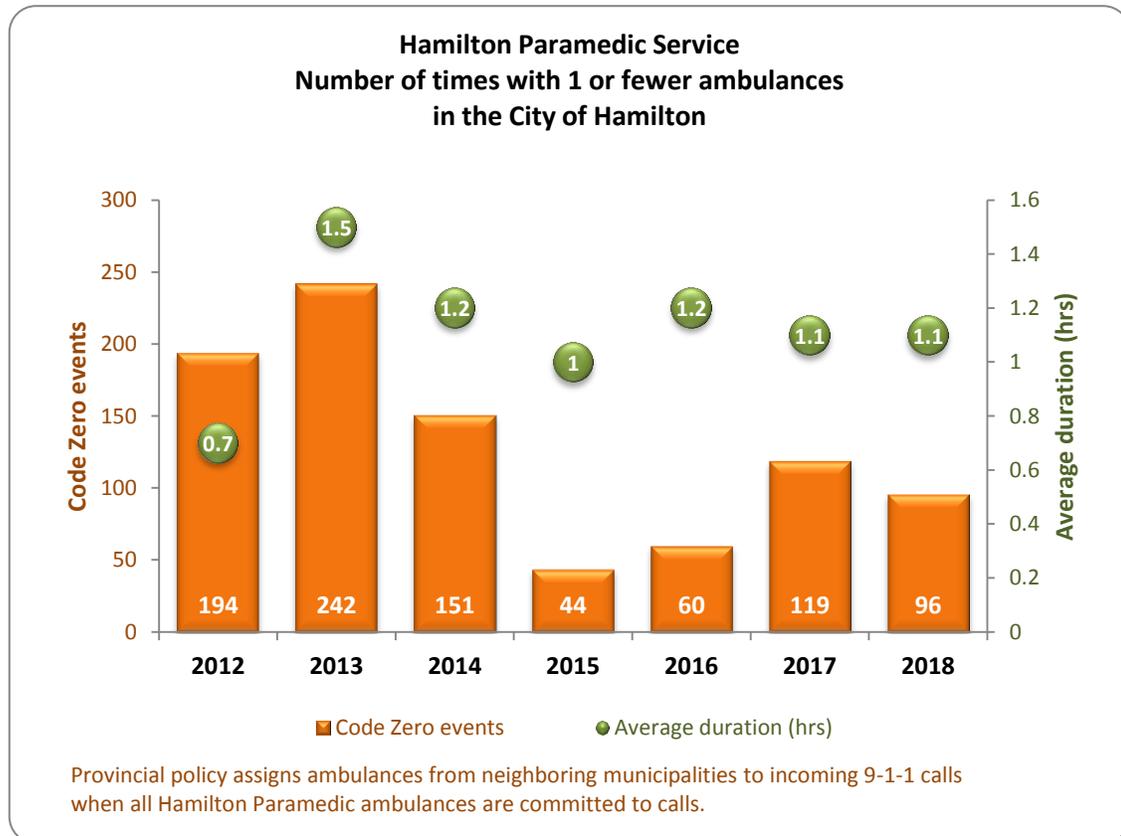
All hospitals in Ontario report their own measure of ambulance OLD on a monthly basis to a MOHLTC “Access to Care” analytics process. In addition, the HPS provides an annual summary of each hospital’s performance using their Transfer of Care Data System. The following is the 90th percentile of OLD times for Hamilton hospitals:

HOSPITAL	OFF LOAD DELAY TIME 90 TH PERCENTILE
	114 minutes
	102 minutes
	132 minutes

Code Zero Events

Code Zero events occur when the number of ambulances available to respond to a call are limited to just one or none. Long offload delays, particularly where there are days with 10 or more delays longer than 2 hours, continue to be the major cause of Code Zero events.

The start of 2018 was very challenging for Code Zero events with a record of 55 events experienced in January and February, almost one per day. However, through collaboration with hospital partners and improvements to practice, the rate of events was reduced significantly. Over the next 10 months, from March to December, there was a total of 41 Code Zero events, an average of 4 per month. In total, there were fewer events in 2018 than 2017 as shown in the chart below:



Code Zero events continue to be a significant challenge for Paramedics, hospitals and the community. The HPS in collaboration with hospital partners was able to reduce the number of events. Some of the initiatives undertaken with hospital partners are discussed in the next section.

Partnerships and Collaboration

Hamilton has a wide range of health care service providers including community organizations and hospitals with specialized services. The HPS knows collaborating with partners within the community, the City of Hamilton and the province is essential to delivering quality care to Hamilton’s residents and visitors.

The HPS has placed an emphasis on establishing a number of partnerships and collaborates with health care providers to assist in coordinating efforts and addressing challenges to enhance patient care.

The following are some of the collaborative initiatives undertaken with community partners that occurred in 2018.

Fit-2-Sit

In the latter part of 2018, the HPS in collaboration with St. Joseph’s Healthcare Hamilton, initiated a trial “Fit-2-Sit” process whereby Paramedics are able to place some low acuity patients directly into the waiting room allowing Paramedics to return to the community immediately for the next emergency. This will help to reduce the amount of time Paramedics are held up in off-load delay before they can transfer the responsibility of care to the hospital and leave to respond to another call.

The HPS is working with Hamilton Health Sciences to initiate the Fit-2-Sit program at the Hamilton General and the Juravinski Hospitals in 2019.



In collaboration with the Performance, Planning & Evaluation section of City of Hamilton, the HPS conducted a citizen survey which showed that 91% of respondents felt it would be acceptable for a Paramedic to leave a person with non-life threatening issue in an emergency waiting room to respond to an emergency call.

Dedicated Offload Nurse (DON)

Off-load nurses are dedicated to caring for patients coming to the hospital by ambulance. This enables the Paramedics to return more quickly to the community for the next emergency. One offload nurse with four temporary holding spaces can quickly free four ambulances for return to availability. This program continues to be funded at all three adult hospitals in Hamilton using 100% grant funding from the province’s MOHLTC. In collaboration with the hospital partners, the process for utilizing offload nurses was refined and improved in 2018. Further improvement will be required in 2019.

Real-Time Dashboard

In 2018, through collaboration with the Ottawa Paramedics Service, the HPS developed a real-time dashboard that gauges the demand and capacity of emergency responder vehicles as well as hospital wait times. The dashboard is utilized by CACC dispatch and is also displayed in the three adult hospital emergency departments. The aim is to more evenly distribute demand on emergency rooms by directing the ambulance to the hospital with the least amount of wait time. This will help to ease the burden of off-load delays. In addition, emergency room teams can see in real time the length of wait time for off-loading in their hospital and work to process ambulances accordingly. In addition, they can see at any given time when an ambulance will be arriving so they can be prepared.

HPS Real Time Dashboard



Lean Initiatives

Lean initiatives help to identify ways to utilize resources most effectively and cost efficiently. In 2018, the HPS undertook lean initiatives at two hospital sites to improve practices in which ambulances are processed through the Emergency Department. These quality improvement activities in partnership with hospitals will be ongoing to continually improve processes.

Escalation Process for Offload Delay

Should an off-load delay continue past MOHLTC determined guidelines of 30 minutes, the HPS staff will notify hospital officials to assist front-line hospital staff in making decisions on how to process patients in a timely manner. This elevation process may include but is not limited to the Chief of the HPS and Vice Presidents at the respective hospitals.

Hospital Destination Guidelines

These are established guidelines agreed to by the HPS and each hospital as to where patients will be taken by Paramedics based on the patient's condition. These guidelines are continually being updated to reflect the demands being placed on the three hospitals.

Monitoring and Reporting

Status 4 Tones

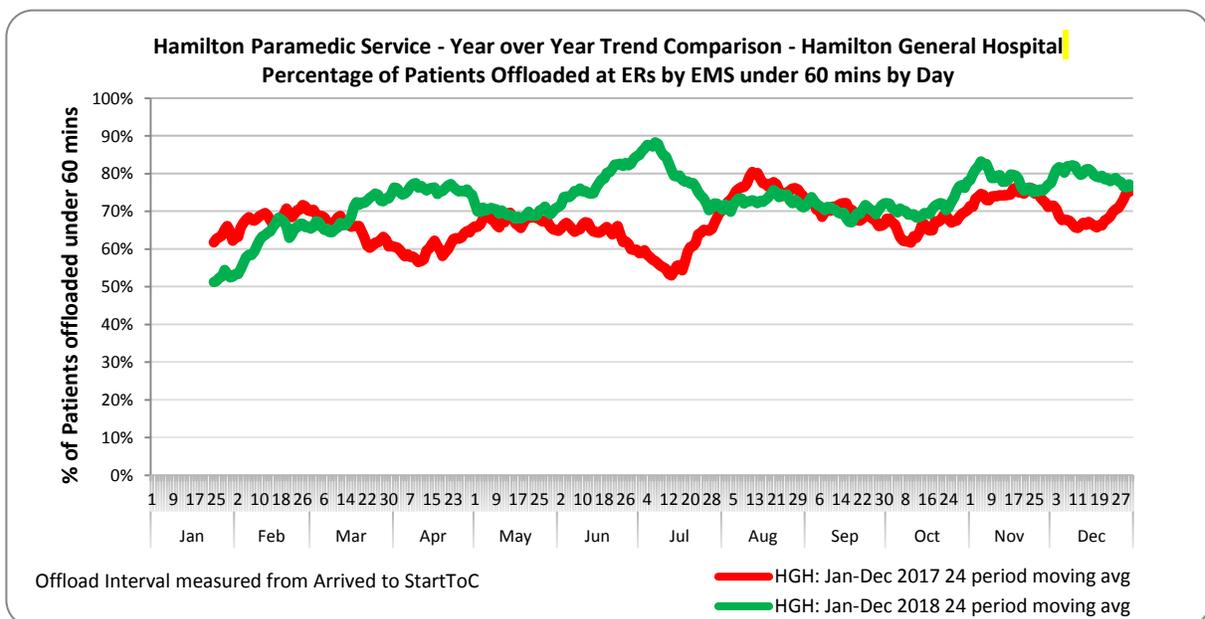
When only 4 ambulances are available to respond within the city, the dispatch centre will send out a tone to alert all hospitals and paramedic staff of the limited resources. This heightens the urgency for hospitals and Paramedic Supervisors to process ambulances in the hospitals and return them to the community in a timely manner.

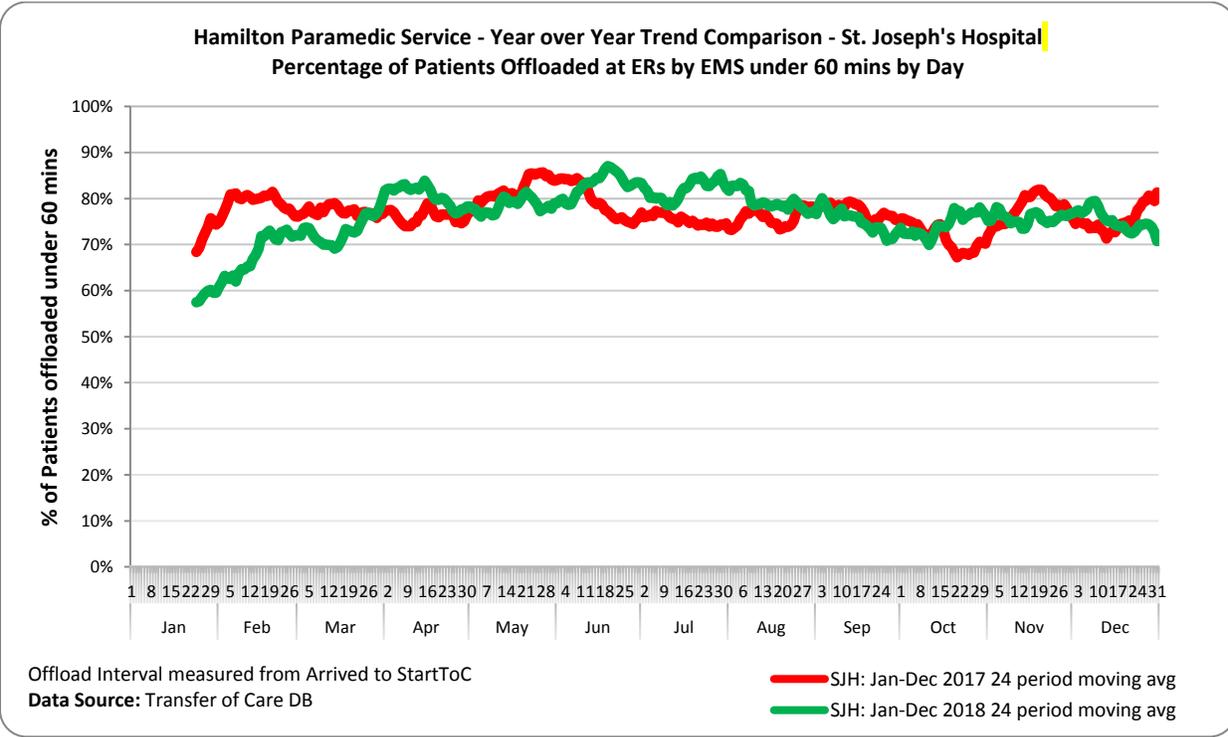
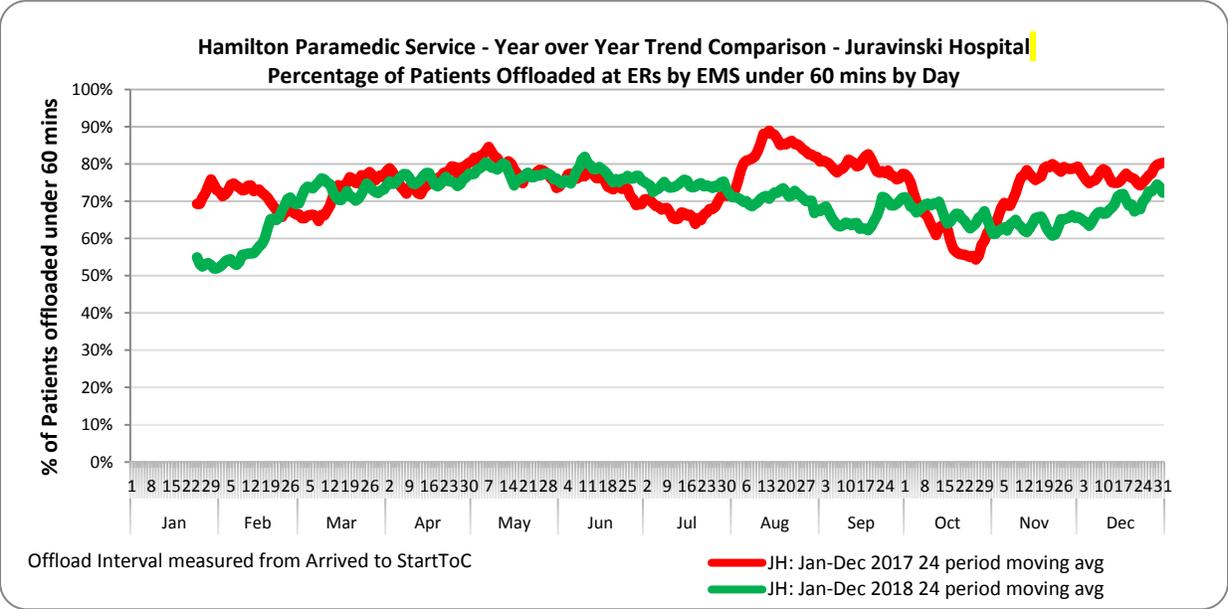
Code 0 Tones

When there are 1 or 0 ambulances left in the community, the dispatch centre will send out a second alert tone to hospital and paramedic staff. This results in an even higher urgency to return paramedics to the community.

Transfer of Care (TOC) Monitor

When a Paramedic arrives at the hospital, they are required to record both their arrival time and time the patient was placed in a hospital bed. This software provides real time awareness of Paramedics' arrivals at hospital based on manual information inputs. Daily reports are provided to each hospital Emergency Department Manager, and weekly run charts are provided at the Director level. These reports help to illustrate the length of time for off-loading, that is, the time it takes to transfer the responsibility of care from the Paramedic to the hospital. The 2018 charts of the 90th percentile of patients offloaded in 60 minutes or under as compared to 2017 for each of the hospitals is below.





Supervisory Oversight

The HPS has dedicated one Paramedic Supervisor to work with hospital officials to ensure the most expeditious return of Paramedics to the community during time of off-load delays.

Doubling up of Patients by Paramedic Staff

Collaboration occurs internally as well to help mitigate limited resources. When there is a shortage of available ambulances, a Paramedic Supervisor may have a paramedic crew monitor a patient who is in the care of other Paramedics who are also waiting in the emergency department until there is a transfer of care to the hospital. Thus, one crew will be caring for their own patient as well as another crew's patient which frees up the other crew who can then return to the community to answer another emergency call.

Alternate Destination Guidelines

As a result of recent legislative changes, the HPS is currently investigating opportunities to transport patients with minor illnesses or injuries to facilities other than hospitals. This will help to ease the burden of off-loading times in hospitals and result in the patient being seen more quickly by a health care professional in medical facility.



77% of citizens responding to the HPS Survey felt that they should be transported to a medical facility determined by Paramedics to be most appropriate for their condition rather than to a hospital of their choice.

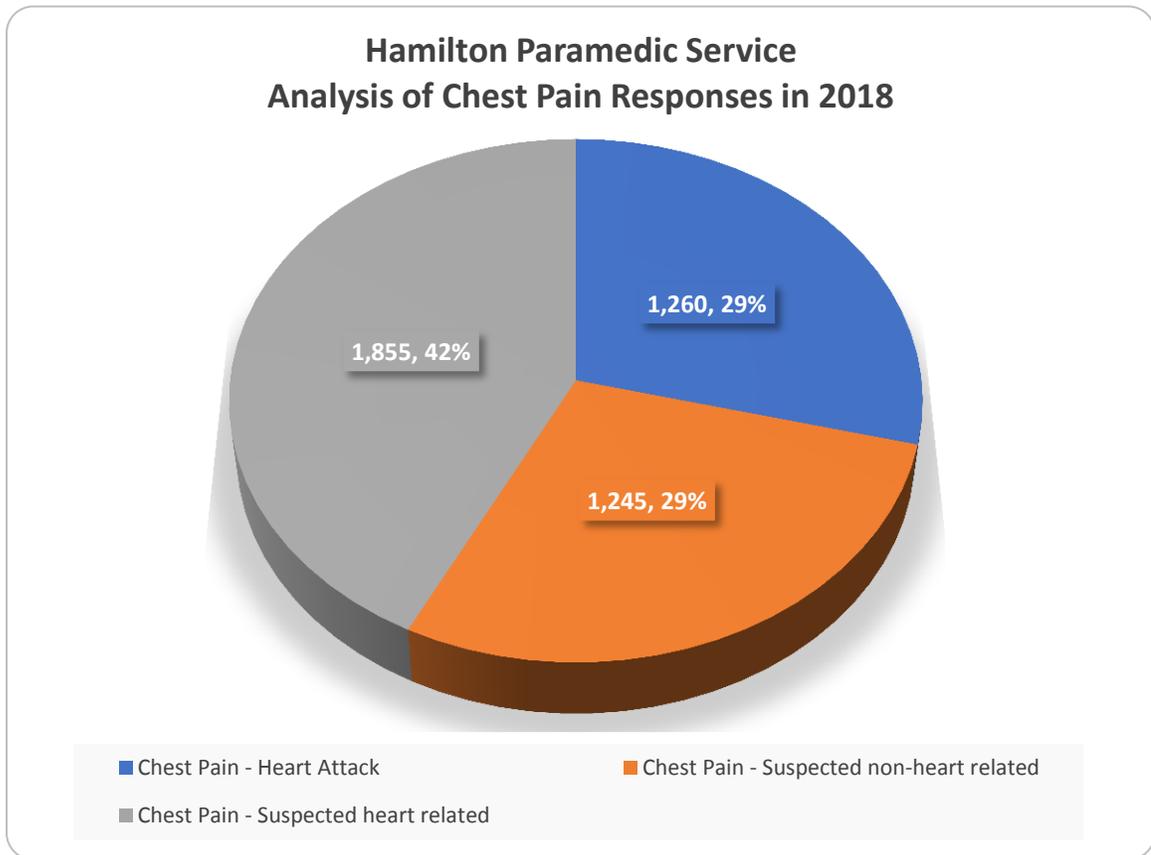
Specialty Programs

Hamilton is fortunate to have some of the best hospitals in the province providing leading edge specialized clinical services for residents. In collaboration with the MOHTLC and Hamilton Health Sciences Centre (HHSC), the HPS is able to transport patients to these specialized services directly, minimizing the time for patients to access these specialized services.

In addition to both trauma and stroke programs, the HPS now transports patients that are having heart attacks directly to the Heart Investigation Unit (HIU) at HHSC-General site. The Paramedic will acquire and interpret a heart ECG in the field and notify the HIU when the patient is having a heart attack. This allows the HIU to prepare for the patients arrival and receive advanced treatment in the catheterization suite.

Once arriving at Hamilton General HIU, a physician and specialized team will assess and if necessary open the artery which is causing the heart attack. This reestablishment of blood flow not only decreases injury to the heart muscle, but can lead to 6.5% decrease in mortality (Michel R. Le May, 2012) compared to being transported to a hospital not having the same services available.

The chart below shows the number of chest pain related calls in 2018 as determined by Paramedics:



Community Paramedicine

During the past 15-20 years, paramedic services around the world have increasingly become a frontline health care resource to citizens for low acuity illnesses. The reliance on their services has resulted in a cohort of patients known as “high-users” that utilize paramedic services on a continual basis.

As a result of this, the HPS in collaboration with a variety of community partners including Hamilton Police Service, McMaster University’s Department of Family Medicine, CityHousing Hamilton and Catholic Family Services initiated the Community Paramedic Program in 2014.

The goal of the Program is to assist patients that have utilized 911 and hospital services on multiple occasions due to chronic medical and/or social issues. Community Paramedics (CP) collaborate with community organizations to help alleviate patients’ issues in their homes, thereby decreasing the amount of times they are taken to hospital by Paramedics.

In 2018, the HPS Community Paramedic Program refined its strategy to focus on the following key areas:

- Navigate – the CP will be aware of the wide range of resources and service available within the community and how to connect with them

- Advocate – the CP will help to ensure that resources are in place to support the client prior to discharge from the program. If not, the CP will contact the appropriate organization to ensure the organization helps the patient/client access the resources and services they require.
- Collaborate – the CP will work with community partners to ensure the patient/client receives and benefits from the services and resources they require

Of the total events that took place between January 1,2018 and December 31,2018 (63,115), approximately 32% or 19,991 calls were generated by 9% (4,167) of all unique 911 callers (47,291). These callers can be divided into 5 categories of 911 users from “very low” (3-4 calls) to “very high” (40+ calls). This categorization helps to identify which Community Paramedic Program is most appropriate for the different needs of clients.

In 2018, the following Community Paramedic Programs were delivered in collaboration with community partners to support the health and well-being of residents while helping to ease the burden on hospitals due to unnecessary emergency visits:

- ✓ @Home Visit
- ✓ @Clinic
- ✓ Flu Immunization Clinic
- ✓ Social Navigator
- ✓ Remote Patient Monitoring
- ✓ Public Access Defibrillator

Each of these programs is described below.

@Home Visit

Established in 2014 with funding for one year provided by the MOHLTC, the @Home Visit Program sees a speciality trained CP visit a client in their home. Once identified as having used 911 services on a variety of occasions through the HPS electronic patient care record (ePCR), CPs mobilize quickly and provide an in-depth assessment of the client’s needs. The CP provides a rapid assessment of the health care needs of the client. Referrals are then made to the appropriate service providers in the community. This approach promotes the efficient use of all health care partners and helps to reduce the need for hospital visits. In 2018, the @Home Visit Program served 197 clients and saw a 67% reduction in their ambulance use after they were enrolled in the program.

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@Clinic

This program is led in partnership between the HPS and the Community Paramedicine Research Program at the Department of Family Medicine, McMaster University. The clinics are located in selected CityHousing Hamilton buildings and the intervention focuses on health promotion and the prevention of high blood pressure, diabetes, cardiovascular disease, social isolation and falls in senior residents at these buildings. This program has multiple benefits, including



improvement in risk profile for chronic diseases, improved quality of life, and decreased paramedic responses to these buildings with resultant resource savings. In 2018, the @Clinic Program was in eight vulnerable seniors' buildings throughout the city with a total of almost 2,200 visits.

Flu Immunization Clinic

In December 2018, the @Clinic Program expanded to include flu immunization. This initiative was funded by the HHNB LHIN and established in partnership with Public Health Services at the City of Hamilton. All 42 recipients of the flu shot that month completed a survey and all agreed that having the flu immunization available at their building was convenient and they would like the program to return next year.

Social Navigator

The Social Navigator Program is collaboration with the Hamilton Police Service, and the Urban Renewal section of Economic Development. Introduced in 2012, the Social Navigator Program's objectives were to reduce contacts with persons interacting with police, by coordinating and advocating for the appropriate care to meet their specific needs. The program is part of the Hamilton Police Service ACTION Strategy and consists of one Paramedic, a police Constable and a Case coordinator.



In 2018, there were 264 referrals made to the Social Navigator Program by a variety of agencies including front-line Paramedics. Through this program other agencies and providers were enlisted for their resources and services 205 times. This program continues to be successful at bringing together community partners and providers to assist at-risk individuals in getting the supports they need.

Remote Patient Monitoring

The Remote Patient Monitoring (RPM) program by Future Health was introduced as a community paramedicine initiative in 2014. The uniqueness of this initiative is it leverages technology to allow the patient to stay in their own home while being proactively monitored by a CP.

Chronic conditions such as congestive heart failure (CHF), chronic obstructive pulmonary disease (COPD) and diabetes can be managed utilizing a variety of technology devices such as wireless transmitting scales, blood sampling machines, blood pressure cuffs and oxygen monitors. The information is then transmitted wirelessly to a Community Paramedic database, which analyzes the information and if predetermined thresholds are exceeded, the CP is notified and a response is generated. Once the patient is assessed, information is relayed to their primary care practitioner who in turn can schedule a follow up appointment with the patient or provide adjustments to medications directly over the phone. The result is that the deterioration in the patient's condition is intervened prior to the condition warranting a 911 response and subsequent hospitalization. These interventions allow for significant cost savings and resource utilization for both paramedic and hospital organizations. The Remote Patient Monitoring program expanded in 2018 allowing for an increased capacity for early flagging and intervention of some problems for high risk clients while in their own homes.



The HPS began working with St. Joseph's Healthcare Hamilton in October 2018 to implement the RPM program with 21 patients. The HPS responded to 174 alerts for these patients and reported a reduction in their calls to 911 by 79%

Public Access Defibrillation

As a continued effort into moving towards a "Cardiac Safe City" as declared by Hamilton's City Council, the Community Paramedic Program coordinates the maintenance, and where possible, the expansion of Automated External Defibrillators (AEDs) throughout the city. Reestablishment of blood flow is time critical, to preserve the function of the heart and brain. Every minute in which cardiopulmonary resuscitation (CPR) and defibrillation from an AED is not completed the chance of survival decreases

by 7% as demonstrated in the chart below. The red area indicates the time in which a citizen could make the greatest impact on survival prior to paramedic arrival. By calling 911, beginning CPR and attaching an AED, the citizen may increase the rate of survival by 7%-28%.



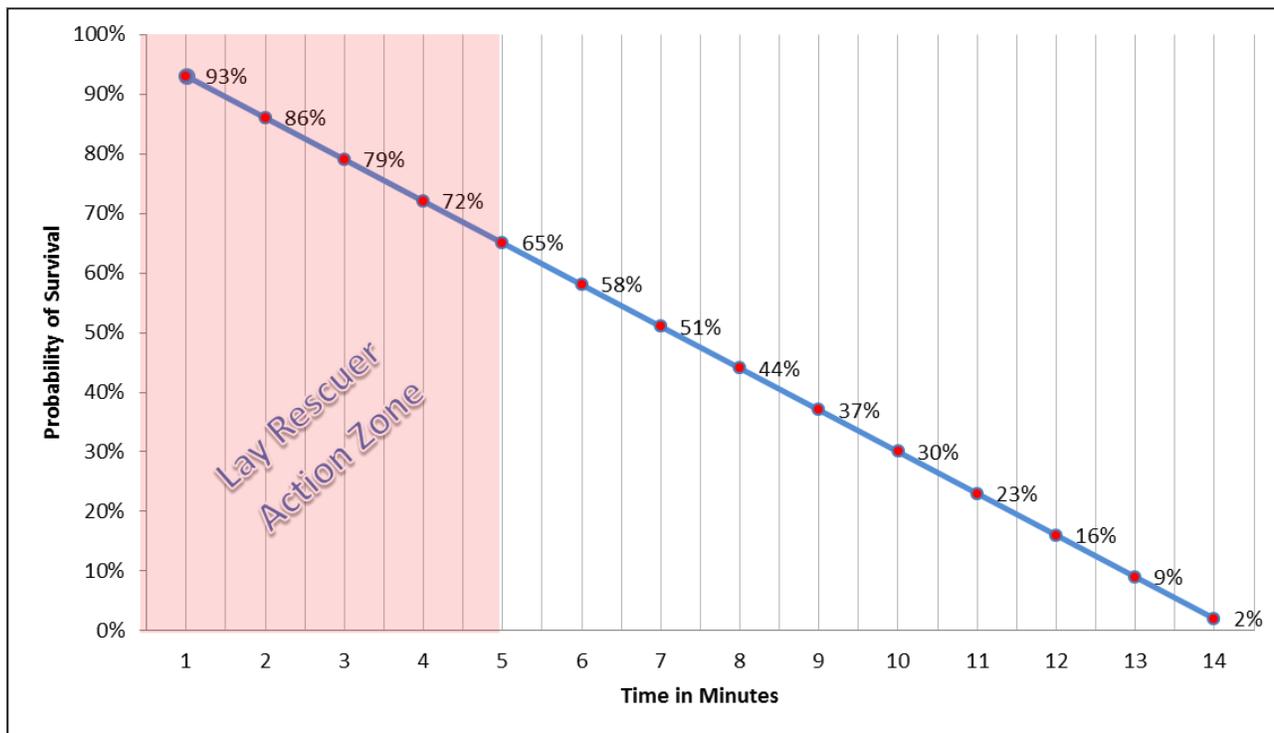
Call 911



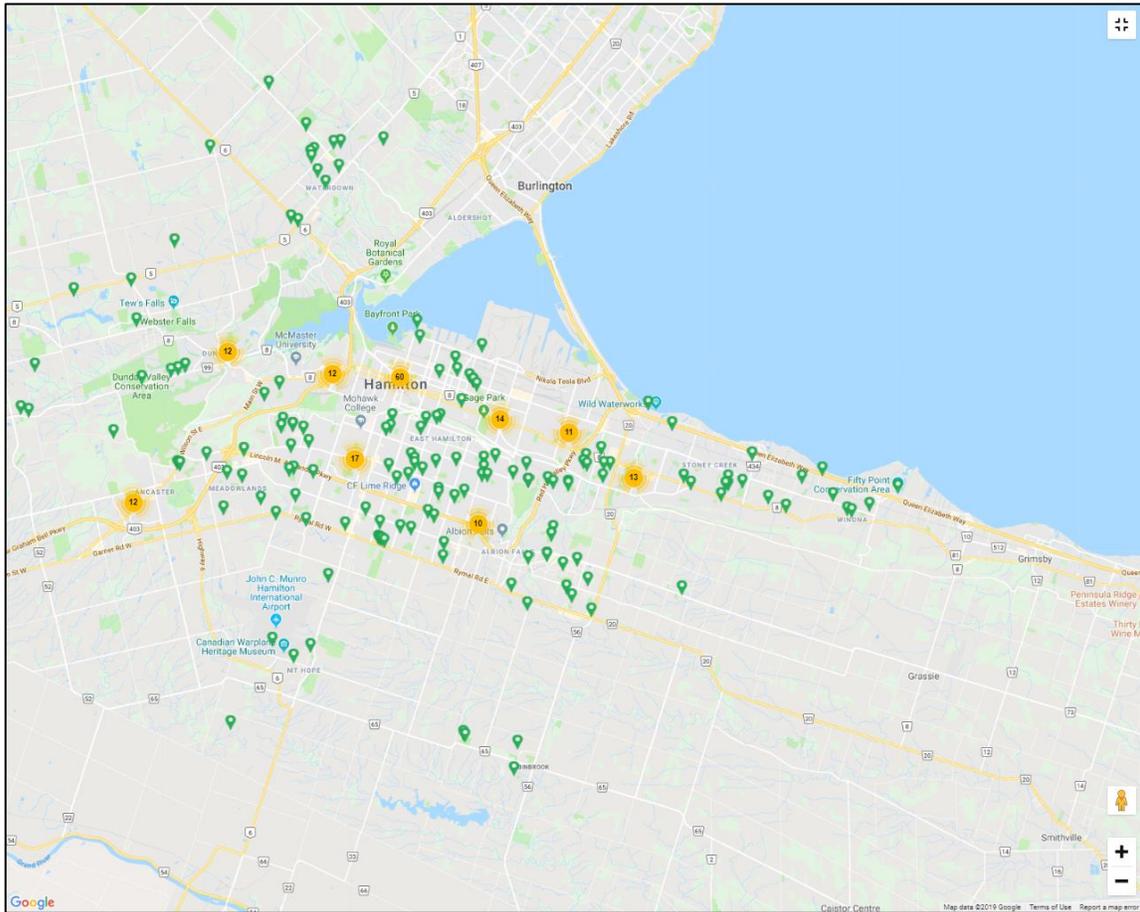
Begin CPR



Get an AED



The Community Paramedic Program is responsible for ensuring that AEDs throughout the city are maintained and tracked. The tracked information is made available to the dispatch centre, who relay this information to a 911 caller in the event of a sudden cardiac arrest. The Community Paramedic Program also advocates to increase the number of AEDs in the community that can be accessed by the public. Through collaboration with local businesses, agencies and City of Hamilton Departments, in 2018 there were 461 AEDs in the city, an increase of 29 from 2017. The placement of the AEDs throughout the city is indicated by the green markers in the map below. They are located in public buildings, such as City of Hamilton office buildings, schools, libraries, local event arenas, fitness centres, recreational facilities, hockey arenas and seniors' centres.



The HPS partners with a third party to track, maintain and report on the AEDs placed in sites throughout the city. The database allows for quick referencing of “AED Readiness” using a dashboard as seen here. Through the Community Paramedic Program, CPs are deployed to service, answer any questions and provide necessary follow-up related to AEDs for agencies and businesses that have AEDs and are tracked in the database.



PARTNERSHIP



In collaboration with the local media agencies and the City of Hamilton’s Communications Office, the Community Paramedic Program implements a media campaign using social media, television and print to make residents aware of these programs available to residents in need to help them avoid hospital visits

Summary

The HPS relies on community partnerships to ensure Hamilton’s residents and visitors receive the care they need while reducing unnecessary hospital stays. As described above there are a variety of programs in place to return Paramedics to the community when a Code 0 occurs. In addition to this, the dispatch centre will assign calls to other agencies in the following ways:

- Ambulances from other communities that are transient within the Hamilton area
- Request coverage and/or response of ambulances from other communities directly
- Paramedic Response Units (PRU) staffed with one qualified Paramedic that can initiate advance assessment and treatment prior to ambulance arrival

The HPS will continue to collaborate with community organizations and hospital partners to alleviate the pressures caused by offload delay and deliver quality care to the community.

PARTNERSHIP

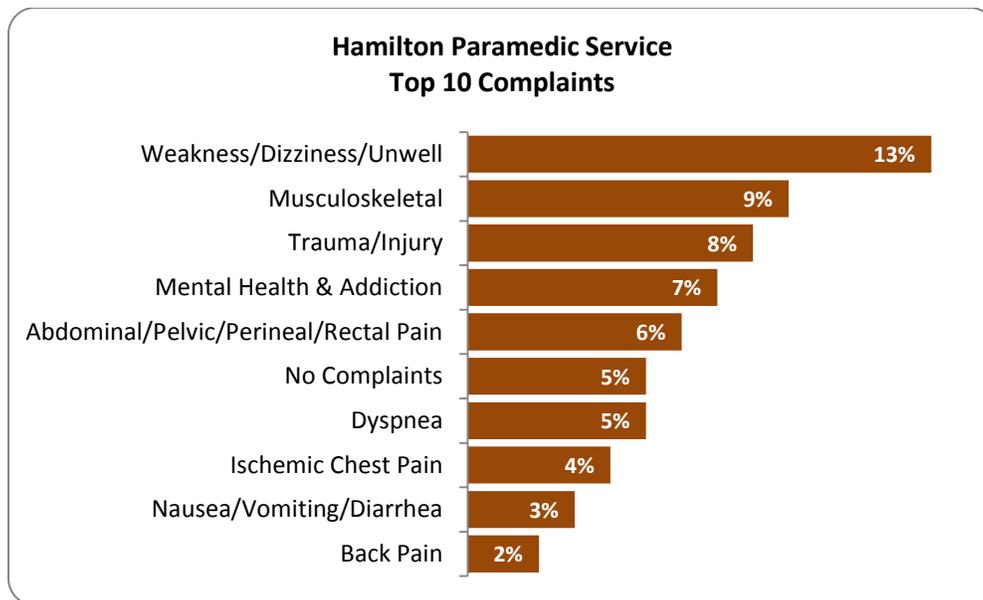


HPS is involved in several quality improvement initiatives with Hamilton hospitals and community organizations to reduce off-load delay and prevent Code Zeros

Clinical Overview

Call Types

HPS reviewed 67,836 Electronic Patient Care Records (ePCR) in 2018 and noted an increase of 3.5% from 2017. This total includes the number of patients transported to hospital as well as patients who were seen by Paramedics but declined transport after initial assessment. As a mobile health care provider, HPS responds, assesses, treats and transports patients with a variety of physical and mental health conditions. The top ten health concerns following paramedic assessment as recorded in the ePCRs for 2018 are as follows:



Sudden Cardiac Arrest Outcomes

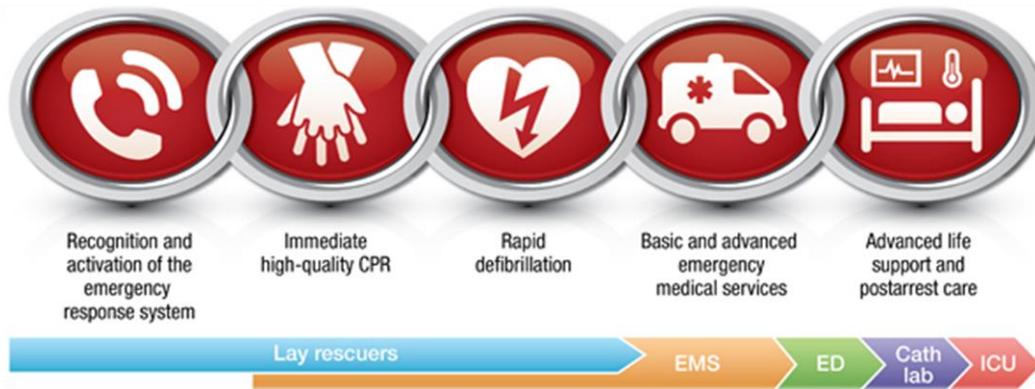
Sudden Cardiac Arrest (SCA) is defined as when “the heart suddenly stops beating normally and cannot pump blood effectively” (Heart and Stroke, 2018). The Heart and Stroke Foundation also predicts that eight out of 10 SCAs occur in the home or a public place and only one in 10 survive such events.



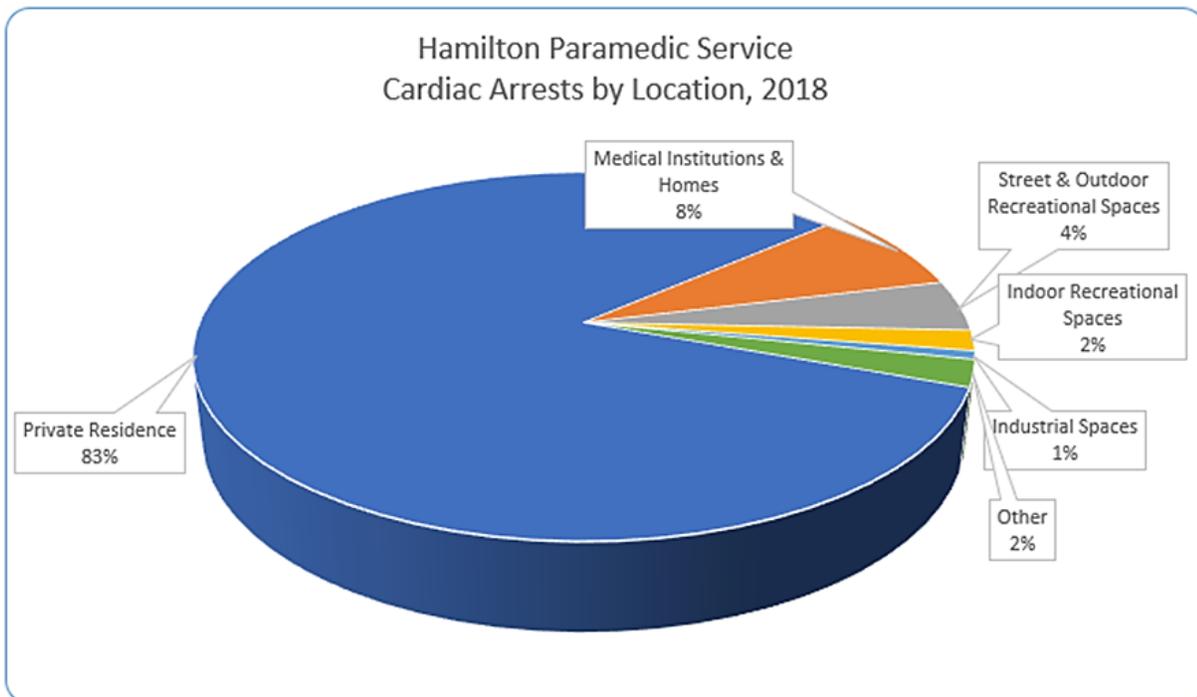
In 2018, HPS responded to a total of 1,244 SCAs an increase compared to 1,187 SCA events in 2017. With the partnership of allied agencies and our Public Access Defibrillator Program, the HPS recorded an Automated External Defibrillator (AED) to a SCA 88% of the time in less than 6 minutes in 2018. In collaboration with first responders, Paramedics successfully resuscitated 102 medically suspected cases or approximately 9.7% (2018). It should be noted, that due to privacy legislation, the HPS cannot

confirm if these patients were discharged from hospital, which is the true measure of successful resuscitation. We will be working in 2019 to improve our ability to track the discharge outcomes.

In 2018, 83% of SCA events occurred in a private residence. As a result, the HPS continues to advocate for residents to become familiar with signs of a SCA and 911 activation, early hands-only CPR and greater access and use of AEDs. These steps are consistent with the American Heart Association (AHA) Chain of Survival which emphasizes key factors in increasing the survivability of out-of-hospital SCA:



In addition, the focus of the HPS efforts is on improving the survival rate of SCAs in public places in the community. As per the chart below, approximately 6% of SCA events occur in public places.



Education & Training

2018 proved to be a very busy year for Hamilton Paramedics as they continued to expand their knowledge and skills. Continuing Medical Education or CMEs are mandatory for all Paramedics. Through CMEs Paramedics learn about new and updated procedures, policies, programs, pharmaceuticals and equipment as well as review of existing information. In 2018, over 8,300 hours of training were delivered to Hamilton's Paramedics through CMEs.



In collaboration with the Centre for Paramedic Education and Research (CPER) as well as other partners such as McMaster University's Department of Health Physics, City of Hamilton's Talent and Diversity Office, City of Hamilton's Healthy Workplace Specialist, MOHLTC, Heart and Stroke Foundation and the Ministry of Labour, the HPS delivered education in the following areas:

- CPR
- Sepsis Alert
- Tourniquets/Hemostatic Dressings
- Community Paramedic Programs
- Health and Safety
- Personal Protective Devices
- Toxicology
- Patient Safety
- HPS Policy and Procedures
- CAD Link and CF20 Computers
- Corporate Information
- Controlled Substance
- Adrenal Crisis and Insufficiency
- Ketamine
- Skills Review

In addition, due to legislative changes in 2018, CMEs included Stroke Protocol education as well as training related to new initiatives introduced in 2018 such as Closed Suction Catheters, radiological hazards and semi-annual training for the Peer Support Team.

When a Paramedic is absent from the workplace for greater than 90 days, they are required to complete a "Return to Clinical Practice" educational workshop. During the workshop, staff obtain and refresh their knowledge and skills through a variety of simulated scenarios. The Paramedic will also be interviewed, and if necessary, tested by the delegating physician to ensure competence in all controlled

medical acts. In 2018, HPS conducted 18 Return to Clinical Practice workshops that ensured clinical competency of staff returning from absences.



In partnership with the Talent and Diversity Office of the City of Hamilton, all Paramedics received gender protocol training to expand their knowledge when dealing with diverse populations

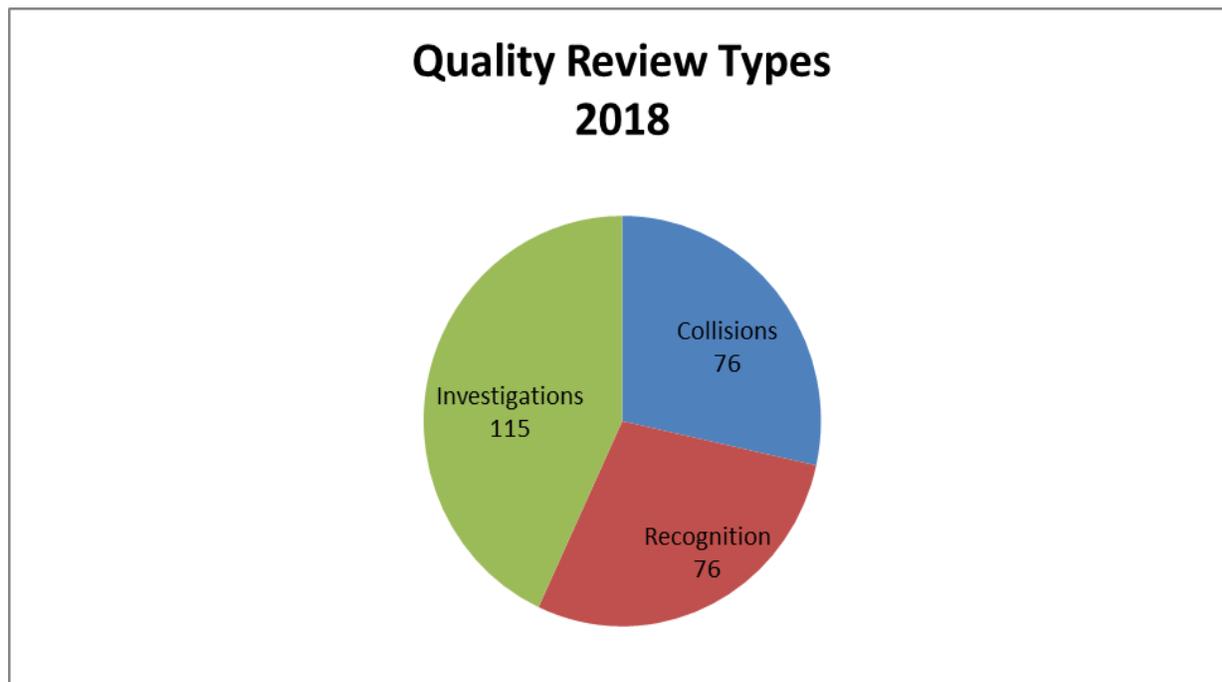
Quality Assurance

The HPS is dedicated to providing the highest quality of care and customer service to anyone that utilizes its programs and services. In addition to a robust quality assurance process, patient and customer feedback from both external and internal partners is integral to continuous improvement of the HPS programs and services.

The Commander of Quality Improvement and Regulatory Affairs (QIRA) in cooperation with the Operations Section of the HPS is responsible for the coordination and follow up with patients and clients who have given feedback to HPS.

When a customer service inquiry is received, a file is created which the Commander of QIRA reviews and assigns a Risk Priority Number (RPN). The lower the number, the higher the risk is to the patient, public and/or Paramedic. Therefore, a priority one file would require immediate attention.

In 2018, the HPS received a total of 267 inquiries that required further investigation to determine potential system and/or performance improvements. A description of the reviews conducted in 2018 is in the following sections.



Vehicle Collisions

The HPS had a total of 76 vehicle collisions in 2018. The HPS classifies collisions by amount of vehicle damage. The following chart shows the number of accidents that occurred in 2018 per each classification:

Level	Amount of Vehicle Damage	Number of Collisions in 2018
0	0	5
1	Less than \$1,000	40
2	\$1,000 to \$10,000	29
3	Over \$10,000	2

The majority of the collisions were minor in nature and involved side clearance issues with no injuries to the public, although two resulted in minor injuries to staff. These collisions would be when an ambulance's mirror strikes an object, for example.

As a result, HPS will be conducting a review of the following in an effort to improve on these results:

1. Driver education for new staff through the HPS and external experts
2. Staff also complete a Ministry Driver Improvement assignment following a collision

As there are currently no industry standards it is difficult to determine if the number of accidents incurred by the HPS vehicles is comparable to other services. As a result, the HPS has taken the lead to collaborate with other services in the region to identify key performance indicators in the areas of clinical reporting, quality reviews and audits. Determining standardized measures will enable direct comparisons across services and establish baselines and benchmark standards for services.



The HPS is partnering with other EMS in the region to identify standards and/or benchmarks to determine frequency comparability.

Investigations

Service Inquiries are generated from both external and internal customers of the HPS. When a patient and/or citizen have a question or concern regarding the service they received, a Customer Service Inquiry file is generated and a Quality Review (investigation) is conducted. In 2018, HPS conducted a total of 115 reviews of investigations.

Reviews are conducted to determine how to improve the system and/or the behaviour that may have contributed to the question or concern of the citizen/patient. The types of inquiries received by the HPS include the following:

- Dispatch issues
- Clinical practice
- Professional conduct
- Response issues
- Vehicle operations
- Equipment failures

Recognition

Paramedics continually face risk and danger in their day-to-day duties. In a city such as Hamilton, they have busy shifts dealing with a diverse range of people and challenges. The HPS believes it is important to recognize the work of Paramedics. One of the ways to do so is to ensure when a citizen/patient contacts the HPS with praise about the care they have received or witnessed by a Paramedic going above and beyond their duties, a CSI file is created and they receive a card and a 'Sensational Service' pin from their Supervisor.



"I wanted to give a strong regards to the two paramedics that came to assist us yesterday with my grandmother.

These two were amazing in their dealings with my grandmother and the assistance they provided me and my family in this time of need. They were so helpful not to just us but to all surrounding people they came in contact with at the hospital during the time we required to wait for her admittance in emergency. These two deserve to be acknowledged with praise because they make a tough time be a lot easier.

Thank you, we appreciate you."

"I met two of the kindest and most compassionate (people), Paramedics who had come to take me to the (hospital). Their compassion was evident in their every word and action. From making me comfortable, getting a chair for my young daughter who had been with me from 1.30 a.m., somehow persuading the emergency staff to find me a room and finally getting me a warm blanket before they left.

Thank you...may you and your families will always be blessed with the kindness you showed to a stranger."



Innovation

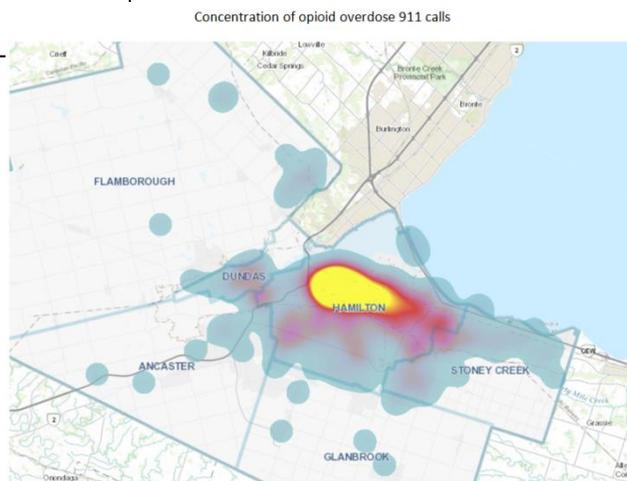
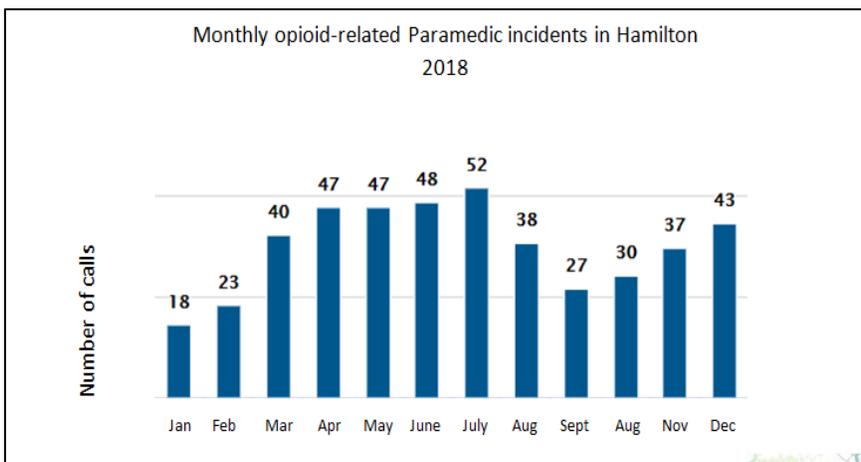
Opioid Reporting

In 2017, in partnership with the City of Hamilton's Public Health Services, the HPS developed a process to assist Public Health Services in reporting on opioid-related emergencies in the city. Through the collaboration of the HPS's data analysts and Public Health Services' epidemiologists, the HPS provides "street level" data on opioid related responses to Public Health Services. As a result the following was actioned:

1. The HPS Electronic Patient Care Record (ePCR) provides information related to suspected opioid related emergencies. This information is shared with Public Health Services, but no personal health information was included in the data
2. The information is then shared with the Public Health Services for their epidemiologists to evaluate, but no personal health information was included in the data
3. This information is shared publicly and for strategic purposes as to assist in efforts to help those affected by opioids

The result of this collaboration is best demonstrated in the reports that are produced in collaboration with the HPS and Public Health Services as seen below that provide information of both the frequency and approximate location of suspected opioid-related emergencies encountered by Paramedics. This

information helps to inform ways to address this issue in the community.



Remote Patient Monitoring

As described earlier, the Remote Patient Monitoring (RPM) program of the Community Paramedic Program has Community Paramedics proactively monitor patients at home. As noted, this focus on prevention and intervention will help to reduce 911 calls and reduce emergency department visits.

The RPM program is collaborating with the McMaster SmartHome program to pilot combining wearable devices and smart home technology to enable enhanced monitoring. In addition to participation from Hamilton's hospitals, the capability of in-home monitoring will be expanded and supported through digital technology by partnering with the Ontario Telemedicine Network (OTN). OTN's full suite of digital tools, including those to support chronic disease self-management and virtual eVisits will increase the depth of access to medical services within our community. OTN will use Hamilton to test existing and new products and services that can benefit residents of Hamilton and be scaled across Ontario if successful.

The pilot would launch an initial 500 patients to test capability and demonstrate results. After successfully enabling that group another 500 patients would be added in a model that can continue to be scaled.



In partnership with the City of Hamilton and the Heart and Stroke Foundation, the HPS leads the Public Access Defibrillation Program to ensure these life-saving devices are in public places.

Medical Information Sheet

The Community Paramedic Program collaborated with community partners to develop an online form that will provide Paramedics with the critical medical information they require in order to provide more efficient care to 911 callers.

The form is on the Hamilton Paramedic Service's webpage of the City of Hamilton's website (<https://www.hamilton.ca/emergency-services/paramedics>) and can be completed online and printed. Vital information such as the patient's emergency contact, allergies, health history and medication list are all recorded. The patient is instructed to put the completed form in a plastic bag and tape it to their refrigerator so that it is easily seen by the Paramedic. Quick access to this important information can save time and lives.

Peer Support Team

In continuing to build on the successes of the Road to Mental Readiness (R2MR) program that was delivered to staff in 2016, the HPS in collaboration with local union representatives established the HPS's Peer Support Team in 2017 under the direction of Dr. Paulette Laidlaw and Canuckcare. The Peer Support Team is comprised of 16 trained volunteer Paramedic members and a mental health advisor. The program focuses on the 4 Rs of mental health:

1. Resiliency
2. Recognize
3. Respond
4. Recuperate

R2MR program helped Paramedics to recognize a decline in their or their peers' mental health and to break the stigma around seeking assistance. The Peer Support Team responds to their colleague's needs once they have identified a potential mental health issue. As a 24/7 service, the Peer Support Team's objectives are as follows:

1. To provide a trained resource for peers to confide in, when faced with occupational and/or personal stressors that affect the person's mental health
2. Bridge peers to an appropriate health care institution or health practitioner with the expertise to best assist with the person's challenges

The Peer Support Team completed their first full year in December 2018. Throughout the year the Team accomplished a variety of work including:

- Developing the logo, brochure, business cards and a poster for all stations and bases
- Participated in Mental Health Week at City of Hamilton - Team members attended to obtain resources, so they could bridge members to community resources
- Participated in the Unity run for 2018 to raise awareness - A run/walk to promote mental wellness, education and reduce stigma within First Responders.
- The Team arranged for the City of Hamilton's Healthy Workplace Specialist to attend Paramedic training to discuss the mental health resources available at the City
- Team members began a newsletter to keep staff informed of the activities within the HPS
- The Team created a survey to gather Paramedics' input and feedback about the Team's work. It will be administered in 2019



National Paramedic Competition

The National Paramedic Competition (NPC) began in 2001 hosted by the Durham Paramedic Association in Whitby, Ontario. Since that time, a committee of volunteers organizes the event annually.

In the beginning, the competition was called the Durham Paramedic Skills Competition. Over the last several years the event has grown tremendously. Interest and participation by both Paramedic Services and sponsors has pushed this event to the level of a National Competition and in 2008, the Durham Paramedic Skills Competition officially became the National Paramedic Competition (NPC). Paramedics from across the country take pride in competing in the Advanced Care Paramedic Division, the Primary Care Paramedic Division and the Paramedic Student Division, which puts 'soon-to-be' paramedics to the test.

Although based in Ontario, teams have travelled from across the country to compete in this event. Provinces represented over the years include Alberta, British Columbia, Ontario, and Quebec. The NPC is also honoured to have hosted teams from the Canadian Forces. In 2009, for the first time, an international team from Holland competed.

With the motto "Excellence Through Challenge" the NPC embodied what paramedics in the HPS strive for: Clinical excellence. As such, in 2017 the HPS entered the NPC for the first time since its inception in 2001. In 2018, the HPS returned, this time to Canada's Wonderland, with 2 teams of Paramedics one in each of the Primary and Advance Care categories. Teams were tested for their knowledge, skills and problem solving through variety of patient simulated scenarios and written examinations. The HPS placed an exceptional 4th for the PCP team and the 9th place for the ACP team. The experience and knowledge gained from this competition, directly transfers to the patients we serve in Hamilton. Congratulations to all the Paramedics and staff involved who were involved!



Public Relations



The HPS receives a variety of requests from the community to participate in public events. This is an opportunity for the HPS to support the community, meet and educate residents and help raise awareness of the HPS and the paramedic profession overall. In 2018, the HPS attended a total of 50 public relations events such as festivals, community events and public education events. Below is a list of the events attended in 2018.



HPS Public Relations Events 2018

Brigadoon Public School
Career Day - Hamilton Christian High School
Pink in the Park Anti Bullying
Pathways to Education Hamilton Career Gala
Move over Campaign with Hamilton Police
McHappy Day - Ronald McDonald House
Beaver Scout Meeting - Emergency Responders
National Puddle Day – Glanbrook Curling Club
"Chopperee" Mount Nemo Scout Camp
City Hall Mental Health Week BBQ
North American Occupational Safety and Health Day
Janet Lee Book Fair and Auction
Unity Run
Police in the Park
School Fun Fair – Brock Road
Gatestone Elementary School Fun Fair
Learning about community helpers - Kindergarten
Joint Emergency Services Career Day
Touch a Truck
Community Appreciation Day - 447 RCAF Association
Tim Hortons Camp Day
Royal Canadian Legion Day of Red
End of Year Picnic with First Responders
School Presentation
Toth School Presentation
City of Hamilton Summer Splash
Movie Night in the Park – Gore Park
Wagner School Presentation
Rosedale Community Fun Fair
Community Helpers Event
Emergency Responders Education (Ancaster Kindergarten)
Joe Sams Leisure Park
Sirens For Life - Kick Off
NICU graduate picnic
Summer Camp Presentation – Mount Albion School
Ti-Cats ECGs 911 Fundraiser Night
Huntington Park Rec Center Comm Event
Heroes in the Community - Grandparents Day at "The Meadows"
Hamilton Newcomers Day
Riverdale Fallfest
Hamilton Santa Claus Parade
Flamborough Santa Claus Parade
Paramedic Ride
HPS Toy Drive
Food Drive – Ancaster
Take your Kids to Work day
Food Drive – Main West
Food Drive – Main West
Food Drive – Stoney Creek
Grimsby Secondary School Presentation



The HPS is able to attend these events through utilizing Paramedic volunteers, Paramedics on modified duties as a result of injury/illness and in rare circumstances frontline staff and/or Superintendents are able to attend these events. This ensures that no Paramedics are taken away from their primary duty of being able to respond to emergency calls. As a result, only 3 event requests for the HPS to attend a public event were not able to be fulfilled.

These events allow the public to have an inside look at what a Paramedic does, the vehicles and equipment they use and be educated on health-related issues.



In addition, the HPS has a strong media presence. Through local television, newspaper, Facebook and Twitter the HPS is able to share real-time information about the HPS and its work, support for health and well-being such as how to find a doctor, community issues such as Code Zeros, awareness campaigns such as International Women's Day the local Stunt Driving Campaign with Hamilton Police Service and recognize the work of Paramedics across the region.

Vehicle Donation

"I am proud of the leadership of our Paramedic Service. Through this incredible donation, we have the wonderful opportunity to demonstrate the supportive nature of our city by providing humanitarian aid beyond our borders to those who need it most"

Fred Eisenberger, Mayor
City of Hamilton

In 2018, the HPS donated a total of 3 decommissioned ambulances and 2 Emergency Response Vehicles (ERV) to Caribbean North Charities Foundation and the David McAnthony Gibson foundation both registered Canadian charities, the latter one is in partnership with the Consulate-General of St. Vincent and the Grenadines.

St. Vincent and the Grenadines is located in the Caribbean Sea between Saint Lucia and Grenada. The ambulance will be managed by the Milton Cato Memorial Hospital as part of the Ministry of Health, Wellness and the Environment, serving a population of 110,000 citizens.



The donation of retired vehicles to the Caribbean was made possible in partnership with the Government of St. Vincent and the Grenadines and the Caribbean North Charities Foundation

Community Connections

Community Survey

In 2018, in partnership with the City of Hamilton's Performance, Planning & Evaluation section, the HPS sought the input of citizens through a survey that was administered via telephone as well as online on the City's website.

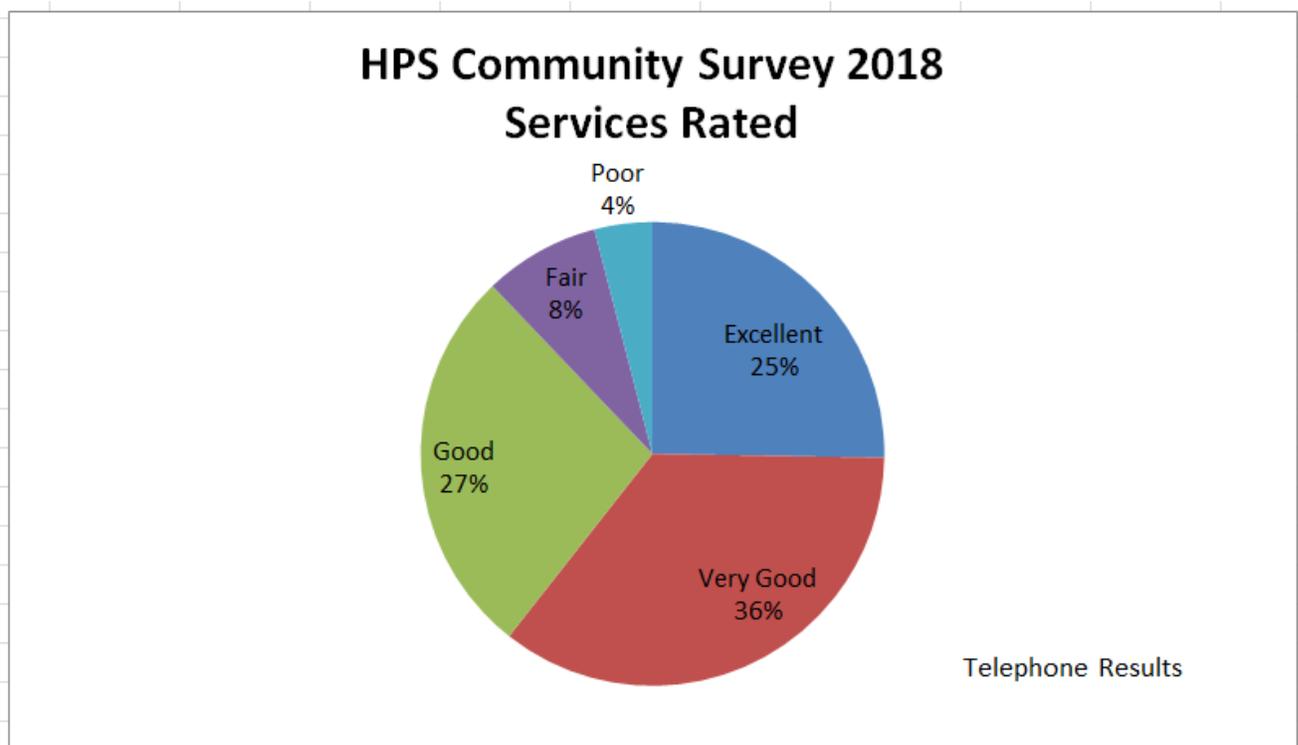


Hamilton Paramedic Service
WANTS TO HEAR FROM YOU
You are invited to complete a survey about the Hamilton Paramedic Service.



The goal of the survey was to gain a better understanding of residents' expectations and satisfaction levels regarding the services provided by the HPS. Over 800 residents responded to the survey in total (550 by phone and 277 online).

Results showed that the majority (87%) of telephone respondents rated the services provided by the HPS as good, very good or excellent.



Telephone respondents also indicated their expectations for response times. The majority (94%) felt it was acceptable that Paramedics arrive within 10 minutes for a life-threatening emergency but could take more than 10 minutes for non-life-threatening issues.

The information gathered in the survey will help to inform the HPS 10-year Master Plan in development for Council in 2019.

Community Garden

The Hamilton Community Garden was developed in partnership with Neighbour 2 Neighbour, Toronto Dominion Bank and the City of Hamilton in 2014. Under the leadership of Paramedics Joe Cox and Heather Little, the objective of the garden is to raise food for local food banks to increase the availability of nutritious foods to those in need. Furthermore, seniors who reside right next to the garden are always welcome to “pick their own” produce whenever they wish.



From early spring preparation and planting of seeds, to ongoing maintenance followed by multiple harvests, Joe, Heather and local volunteers ensure a great harvest every year that is organic and free of chemicals. On average the community garden produces 1,500 pounds of produce per year that is contributed to local food banks for distribution. In 2018, we harvested an exceptional crop with over 1623 pounds donated to community organizations.



Medical Venturers (MedVents)

Through the motto “Challenge and Service”, the MedVent program was created as part of the vocational scouting program in 1994 with Scouts Canada. There are now approximately 29 MedVent groups across Canada with the following objectives:

1. Provide first aid assistance at community events
2. Encourage youth leadership
3. Personal development
4. Expose youth to a future vocational opportunity

As a Scouts Canada organization, participation in the MedVent program is inclusive and is open to anyone between the ages of 15+ irrespective of their sexual orientation, cultural or religious background or disability.

To remain as an active member, youth must complete 96 hours of volunteering in the community and remain certified in Standard First Aid and CPR.

Former MedVents have gone on to successful careers as physicians and paramedics.

In addition to this great developmental opportunity, having the presence of a MedVent group in the community at events increases safety and potentially decreases the calls to paramedic services for minor illness/injuries.

In 2018, the MedVents of Hamilton presented Hamilton’s City Council with their charter and colours that are represented in their scarf to show appreciation to the City for their continued support.



Christmas Toy Drive

During the Christmas holidays, the HPS collaborates with City Kidz for their annual Christmas toy drive. City Kidz is a local organization committed to improving the lives of children growing up with the challenges of poverty, for their annual Christmas Toy Drive. The toy drive is led by HPS's Craig McCleary and Santo Pasqua, partnered with Walmart Canada and the Ontario Provincial Police (OPP) to gather toys and raise funds for the youth at City Kidz.



With a variety of volunteers including family, youth, City of Hamilton employees, retired and current Paramedics, the City Kidz toy drive was able to achieve a new record in 2018 raising \$7,082.85 double the amount raised in 2017. In addition, 1,370 toys were donated by the community, filling two ambulances. The HPS would like to thank the generous residents of Hamilton for their donations. A special thanks to Doug Mason, James & Anne Masterton and Walmart Stoney Creek for helping to make this event a huge success.



Christmas Food Drive

In 2018, the HPS partnered with the O.P.P. (Burlington Auxiliary), Neighbour to Neighbour (N2N) and three local Fortinos grocery stores for the tenth year for the Christmas Food Drive. The HPS's Darren Radtke is one of the coordinators of this two-day drive and has been involved since the first year. Year over year this drive continues to be successful in providing essential food to Hamilton's families in need during the holiday season.

In 2018, the food drive brought in 15,000 pounds of food and raised \$20,000 in cash donations for N2N. The HPS is thankful to all those who participated in this year's food drive and for the generosity of the community!



Acronyms

ACP – Advance Care Paramedic

PCP – Primary Care Paramedic

CACC – Central Ambulance Communications Centre

ACO – Ambulance Communications Centre

SCA – Sudden Cardiac Arrest

VSA – Vital Signs Absent

CTAS – Canadian Triage Acuity Scale

PAD – Public Access Defibrillator

AED – Automated External Defibrillator

ePCR – Electronic Patient Care Record

BLS – Basic Life Support

ALS – Advance Life Support

BLSPCS – Basic Life Support Patient Care Standards

ALSPCS – Advance Life Support Patient Care Standards

MOHLTC – Ministry of Health and Long-Term Care

LHIN – Local Health Integration Network

COH – City of Hamilton

STEMI – ST Elevation Myocardial Infarction (Heart Attack)

CPER – Centre for Paramedic Education and Research

SNP – Social Navigator Paramedic

CHAPEMS – Cardiovascular Health Awareness Program by Emergency Medical Service

HPS – Hamilton Paramedic Service

CPSO – College of Physicians and Surgeons of Ontario

RPM – Remote Patient Monitoring

CP – Community Paramedic

SNP – Social Navigator Paramedic