
For Information

REPORT TITLE: Paramedic Services System Update

FROM: Nancy Polsinelli, Commissioner of Health Services

OBJECTIVE

To provide Regional Council with an update on the work of Paramedic Services through 2022.

REPORT HIGHLIGHTS

- Paramedic Services continues to provide the highest pre-hospital and community care to the residents of Peel.
 - The program is delivered through the Divisional model (the facilities) and the deployment plan utilized by the Mississauga Central Ambulance Communications Centre to respond to calls and provide coverage.
 - Paramedics responded to close to 148,000 calls for service in 2022.
 - A significant increase (31.3 per cent) in offload delay at area hospitals was a major contributor to not meeting response time targets.
 - Several service improvements have been put into place to help address the issues related to offload delay.
 - Paramedic staff health and wellbeing continues to be a priority area of focus.
 - Over 1,600 residents of Peel were cared for by Community Paramedics to avoid hospitalization or care while waiting for a long-term care bed.
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DISCUSSION

1. Background

Peel Regional Paramedic Services delivers pre-hospital and community care to residents, visitors, and commuters throughout Peel. Paramedic Services is seen as a leader in delivering paramedicine, continuously seeking new knowledge, and applying innovation. When a person requires immediate medical care, a team of dedicated, highly qualified paramedics are available to deliver excellence in clinical care.

The Ministry of Health (Ministry) holds the regulatory oversight for the delivery of Paramedic Services across Ontario. They fund 50 per cent of approved operational costs and the remainder is funded by the designated upper tier municipality responsible for the delivery of paramedic services. The Ministry also operates the Central Ambulance Communication Centres (CACC); the Mississauga CACC deploys paramedics services for both Halton and Peel Regions.

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Regional Council is responsible for ensuring the proper provision of paramedic services and oversees the administration of the program including setting service levels, response time standards, and approving operating and capital budgets.

2. Paramedic Services Delivery Model

Peel Regional Paramedic Services model of service delivery is designed in two parts; the divisional model (location of stations) and the deployment plan (movement of ambulances). The divisional model consists of reporting and satellite stations. There are four reporting stations that are located in the urban areas of the Region where 94 per cent of the call volume originates, two in Mississauga and two in Brampton. A fifth reporting station is in its design phase located in north Brampton, near the Caledon border, and a sixth is being considered for south Mississauga. An additional 21 satellite stations are strategically located throughout Peel where paramedics are assigned throughout the day to be ready for response in the community, see Appendix I for a map of Peel's paramedic station locations.

The reporting stations serve as the start and end points of a paramedic's shift and are also the sites where all support staff report to work. At the start of a paramedic's shift, they are assigned their vehicle and deployed into the community. These resources (paramedics and ambulances) are then assigned to calls or satellite stations for emergency coverage.

As ambulances depart from the reporting stations, they come under management by the Ministry of Health, Mississauga CACC who are responsible for the deployment of resources. The CACC follows the service deployment plan designed by the Service with input from frontline paramedics, union, operations, and analytics staff using the most current data available. Once the plan has been approved by the Service, it is approved by the Ministry, then adopted and implemented by the CACC.

The deployment plan is fluid and designed to situate available resources in high call volume areas to anticipate the next call for service. The plan also ensures that resources are moved ongoing to maintain adequate, balanced coverage throughout Peel based on how many ambulances are available in the system at any given time.

To ensure sufficient resources are available in the system, paramedics work 12-hour shifts that are scheduled at different start times to coincide with peak times when calls are their highest. The system provides 43 ambulances during the night shift, and at its peak demand period during the day, up to 68 ambulances are staffed. In addition, eight rapid response units (RRU) (one paramedic in an SUV type vehicle) are situated in high demand areas to help address response times. The RRU shifts start at 09:30 each day.

As paramedics end their shift at reporting stations, they transfer their vehicle and equipment to the logistic technicians (LTs) who then ready the ambulance for the start of the next shift. The LTs are responsible for general safety checking, cleaning, and re-stocking every vehicle that is deployed into the Region. Each day the vehicles are readied, and over 1400 supply items are managed to ensure that paramedics have the right tools and supplies to care for their patients.

3. Performance

Paramedic Services regularly reviews and analyzes data related to patient care, response times, call volumes, and offload delay times at area hospitals. Operational adjustments are made throughout the year to improve service delivery and to support paramedic wellness.

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a) Calls for Service

In 2022, Paramedic Services responded to 147,689 calls for service, representing a 3.6 per cent increase over the previous year (this is an estimated account of call volume, the Service is awaiting final 2022 data from the Ministry). This volume of calls equates to an average of 405 calls per day in 2022.

Table 1 details the annual call volumes by municipality and the Region of Peel. Despite the steady increase in call volume, the percentage of patients transported to hospitals remains constant at 58 per cent over the past four years.

Table 1. Annual call volume by municipality in Peel, 2019-2022*

Municipality	2019	2020	2021	2022*
Brampton	56,535	51,471	60,647	61,795
Mississauga	73,804	64,757	73,647	77,787
Caledon	7,330	6,589	8,237	8,107
Region of Peel	137,669	122,817	142,531	147,689

*Note: 2022 call volume data are based on January 1 – November 30 actuals and estimated December volumes.

Paramedic Services continues to respond to over 95 per cent of calls in Peel, as detailed in Table 2. The remaining calls are responded to by neighbouring service providers (primarily from Halton, Dufferin, York, and Toronto). In 2022, Peel responded to 5,090 calls in neighbouring municipalities. This partnership aligns with the provincial mandate for seamless delivery of Paramedics Services across geographic borders (.).

Table 2. Number of Peel Region emergency calls that Peel Paramedics and neighbouring municipalities responded to, 2019-2022

Year	Total Calls	Number of Calls responded by Peel Paramedics	Number of Calls responded by neighbouring municipalities
2019	137,669	134,227	3,442
2020	122,817	119,745	3,054
2021	142,531	136,984	5,880
2022*	147,689	140,716	6,973

*Note: 2022 call volume data are based on January 1 – November 30 actuals and estimated December volumes.

While the COVID-19 pandemic affected call volume growth in 2020, call volumes rebounded in 2021 and 2022, surpassing 2019 volumes. Critical factors such as population growth and population aging will continue to drive service demand in the Region. The call volume and resource predictions presented to Council in December 2020 as part of the Paramedic Services Long Term Facilities Capital Plan, Key Supporting Analyses (Resolution 2020-1041), have been updated (April 2023); new forecasts continue to show a steady growth in call volumes out to 2036, see Appendix II. Given the current call volumes and their predicted growth, building capacity to meet this demand will still require 67 additional ambulances, three new reporting stations and five new satellite stations, as well as the required staff by 2030.

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b) Response Time Framework

Response time is defined as the elapsed time from when the paramedic unit (ambulance or rapid response unit) is notified of the call for service to the arrival on scene. Response times are reported publicly each year on the Ministry's website.

Response time performance is calculated for each Canadian Triage Acuity Scale (CTAS)-based acuity level, i.e., severity of illness or injury. CTAS 1 represents the highest acuity and CTAS 5 the lowest acuity level. The Ministry sets the response time target for CTAS 1 patients while the percentile is set by Peel Regional Council. The percentile shows how often a response arrives on-scene within the established response time targets. The CTAS acuity level can only be determined once the paramedic has arrived on scene and after a medical assessment is done. Table 3 provides the final response times submitted to the Ministry for 2022. Paramedic Services were not able to meet any of the established response time targets during the 2022 period due to challenges resulting from staffing shortages, high call demand, and increasing offload delay.

Table 3. Region of Peel, response times by patient CTAS level and targets, 2020-2022 (reported to Council Fall, 2022)

Level of Acuity	Target Time (Minutes)	Target Percentile	Response Time (Minutes: Seconds)		
			2020	2021	2022
CTAS 1	8	75%	8:32	8:41	9:26
CTAS 2	10	80%	8:54	9:54	10:39
CTAS 3	13	90%	10:59	12:48	13:34
CTAS 4	14	90%	11:36	12:36	14:06
CTAS 5	14	90%	11:38	13:19	14:51

*Note: 2022 CTAS data represents January 1 to November 30, 2022.

Paramedic Services continues to work diligently to put strategies in place to help address some of the system pressures that directly affect response time. With the introduction of the new Medical Priority Dispatch System (MPDS) triage tool at the Mississauga CACC in December of 2022, it is anticipated that the service will see marked changes to response times in a favorable way. Staff will be bringing an update report to Council in the fall, 2023.

c) Community Target for Sudden Cardiac Arrest

Peel has been seen as a leader in cardiac arrest survival rates. Sudden cardiac arrest (SCA) response time is defined as the elapsed time from when the first paramedic is notified to the arrival of any person trained and equipped to provide defibrillation to the patient. The SCA time is positively impacted if a public access defibrillator is available at the scene or the arrival of a paramedic.

Table 4 shows Peel's performance against the legislated response time standard for SCA. Paramedic Services continues to out-perform the established target time set by Council.

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Table 4. Region of Peel, response time and target for SCA, 2019-2022

Target Time (Minutes)	Target Percentile	Response Time (Minutes: Seconds)			
		2019	2020	2021	2022
6	70%	5:46	5:59	5:51	5:59

d) Offload Delay

The definition of hospital offload delay is the amount of time paramedics remain with a patient in the emergency department (ED) until they transfer patient care to hospital staff. Transferring care means that the patient is moved from the paramedic stretcher to a hospital bed, wheelchair, or another chair. The elapsed time between the paramedics arriving at hospital to the transfer of care, minus the industry standard of 30 minutes for offloading a patient, amounts to the overall offload delay time.

Offload delays have a direct impact on paramedic resources being available to respond in the community and can severely impact response times. Excessive offload delays create periods where the Service is not able to transport the next patient to hospital since a majority of crews are either on a call or tied up in the ED. Consequently, offload delay can create unnecessary risk to the community. Staff continue to work with our hospital partners to monitor the performance of the Dedicated Offload Nurse Program and seek new opportunities to address offload delay. Programs such as Fit2Sit (as described below) have reduced offload delay.

4. Staff Health and Wellbeing

Enhancing the psychological health and safety for all staff in Paramedic Services remains a top priority. A cornerstone to psychological health and safety for Paramedic Services is the development of an Action Plan that is aligned to the corporate psychological health and safety framework and the Canadian Standards Association (CSA) Standard for Psychological Health and Safety in the Paramedic Service Organization. This plan is based on various inputs and data, including suggestions from staff, insights from stakeholders, and evidence related to best practices.

This crucial work and action plan is being facilitated through the advice and guidance of a highly collaborative group of individuals from across both Paramedic Services and the larger Health Services group, including frontline paramedics, Superintendents, Logistics Technicians, Union Representation, and representatives from other areas of the workplace, who have been engaged through various channels.

Achievements to date include:

- Mental health and suicide awareness presentations for frontline paramedic and logistics technicians staff.
- Critical Incident Resource Management System (CIRMS), a program supporting frontline paramedics after potentially traumatic calls.
- Therapy Dog program, a partnership with St. John's Ambulance, helping to support staff at various times in their shift.
- Trillium Health Partners/Insight Health Solutions. This partnership delivers expedited access to psychological services for Paramedic Services staff.

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- Applied Suicide Intervention Skills Training was delivered to Paramedic Services leadership.

Paramedic Services will continue to work with internal staff to build a coordinated Health Services approach to mental health and well-being including but not limited to, updated access and awareness of available resources. In addition, connections with Peel Regional Police Wellness Bureau exist to leverage their successful programs and services.

Psychological Health and Safety is critical to every aspect of Paramedic Services, and the work continues to support frontline staff as they deliver care to the community. Those involved in this work remain committed to enhancing the program for the betterment of all staff.

The effects of the global COVID-19 pandemic have taken a significant toll on staff. Paramedics and the support programs continued to respond and care for those ill with COVID and put themselves at risk every day.

5. Community Paramedicine (CP)

CP programs continue to have a positive impact for vulnerable clients who do not have access to primary care or are on a long-term care wait list and require supports to safely remain at home. As part of the Region's larger vision of the provision of wraparound care that supports aging in place, the objective of CP programs is to reduce avoidable ED visits by individuals making frequent 911 calls, reduce admission to hospital, and safely delay admission to long-term care. Paramedic Services partners with Adult DMay and Seniors' Services as well as Long-Term Care under the direction of the Region's Medical Director, Dr. Saha to support CP program operations.

Moving into the future, the CP model can be leveraged and expanded to provide palliative care, mental health supports, and assist other age-appropriate groups or individuals with special needs.

a) Community Paramedics for Long Term Care (CPLTC)

The CPLTC program was established to address system capacity issues in the community by supporting individuals on the long-term care waitlist to safely stay in their own homes for as long as possible, while also providing "peace of mind" for caregivers. Community Paramedics work with local system partners to expand services for vulnerable seniors. This program has been fully funded by the Ministry of Long-Term Care at a cost of approximately \$3 million annually.

b) Community Paramedicine at Clinic (CP@Clinic)

The CP@clinic Program is designed to keep low-income older adults healthy at home and reduce avoidable 911 calls. Community Paramedics take on a non-urgent care role and visit with older adults in common rooms of six Peel housing complexes, addressing their unmet health needs. Community Paramedics use evidence-based assessments to evaluate older adults' health risks. Algorithms within the CP@clinic program database guide paramedics in setting health goals with program patients and providing tailored health education and referrals to primary care and community resources.

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c) High Intensity Supports at Home (HISH)

The HISH program is fully funded by the Ministry. This program is overseen by the CP program and is intended to provide care for frail seniors with multiple comorbidities and complex care needs who are at risk of hospital admission or Alternative Levels of Care (ALC) designation. Community Paramedics visit these individuals and their caregivers to provide support as they live in the community. The goal of this program is to provide care for these vulnerable patients at home and avoid hospital admission.

d) Community Referrals by EMS (CREMS)

The CREMS program is intended to identify patients in the community who are in need of home care supports. Paramedics are in a unique position to identify patients requiring follow-up either through community paramedics or other stakeholders. In 2022, CREMS referrals began to be assessed through the CP program and managed more closely. Since this time, the program has seen a substantial uptick in referrals.

6. Service Improvement Initiatives

Paramedic Services continues to look for creative approaches to care for their patients or provide ways to avoid ED visits and solve some of the offload delay issues.

a) Fit to Sit (Fit2Sit)

In October 2020, Paramedic Services launched the Fit2Sit program with William Osler Health System at the Brampton Civic site. The purpose of this program is to reduce lengthy offload delays so that paramedics can return to the community and respond to emergency calls. The program allows paramedics to place patients transported to hospital with non-life threatening illnesses or injuries in the waiting room. Paramedics then complete a form that is left with either the patient or the nurse managing the waiting room area. Patients are then monitored by hospital staff but remain on their own until hospital staff are ready to care for them.

In 2022, the Fit2Sit program expanded beyond Brampton Civic Hospital and launched at both Trillium Health Partner sites (Credit Valley and Mississauga Hospitals).

b) Peel Memorial Urgent Care Centre (UCC)

With the health system pressures that all health service partners were facing at the start of 2022, offload delays had escalated dramatically. Peel Paramedic Services approached the Ministry and William Osler Health System to seek support and received approval to divert low acuity patients from the hospital ED and transport them to the Peel Memorial Centre for Integrated Health and Wellness, UCC.

The program allows paramedics to transport patients ranging from 2 to 70 years of age with low acuity illnesses or injuries, which could include closed fractures or upper limbs or feet, suspected dislocations as well as lacerations of extremities or the face.

This program has helped ease the burden of offload delay and the Service is exploring strategies to engage more patients to be transported to this location.

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c) Alternative Models of Care

Towards the end of 2022 the Ministry issued direction to Paramedic Services that allows alternative models of care for patients in our community. These models of care avoid patient transport to an ED and either care for them at home, refer them to alternative care, transport to alternative destinations such as the Peel Memorial UCC, or treat on-scene and release the patient from care.

Paramedic Services continues to explore the options that the new Alternate Models of Care can bring to the patients we serve and avoid unnecessary transport to hospital EDs.

d) Community Responder Program

Peel Region has one of the highest Automatic External Defibrillator (AED) use rates in Canada, averaging one AED used every 10 days through its Public Access Defibrillation (PAD) program. The Community Responder program was created to connect volunteers willing to provide CPR, AED, and other interventions to those who need immediate care.

Building a community of helpers within the broader community connected through a mobile app (First AED) alerts them when they are close to someone needing lifesaving care. Community Responders are provided a first aid kit containing an AED, Naloxone kit, Epi-Pen, and Stop-The-Bleed supplies. Through continuous learning and training provided by Peel Paramedic Service, they remain ready to assist when needed for someone experiencing a cardiac arrest, opioid overdose, anaphylactic reaction, or severe bleed.

CONCLUSION

Paramedic Services is mindful of examining ways to best balance system costs with the resources that are available. The future will be filled with continued growth in service demand, changing landscape of service need, and exciting opportunities to build the expanding scope to serve patients in new and innovative ways. Paramedic Services remains well positioned to engage the future and to provide the residents and visitors of Peel with the highest quality of care and service possible.

Paramedics, support staff, and leadership are the strength and foundation of all that we do in serving our communities.

APPENDICES

Appendix I - Map of Peel Paramedic Station Locations

Appendix II - Paramedic Services Long Term Facilities Capital Plan Update



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