
REPORT TITLE: Paramedic Services System Pressures

FROM: Nancy Polsinelli, Commissioner of Health Services

RECOMMENDATION

- 1. That the immediate addition of two 24/7 ambulances, with an estimated cost of \$953,000 funded from the Tax Supported Capital Reserve (R0230) be approved; and,**
- 2. That to address an already stressed system that provides pre-hospital care in the community, the immediate addition of equivalent to 22 Full Time Equivalent (FTE) positions with an estimated annual gross cost of \$3.34 million (annual net tax levy impact to the 2023 Budget of \$1.67 million after Provincial subsidy) be approved; and,**
- 3. That the estimated \$1.67 million cost of the equivalent to 22 FTE for the remainder of 2022 funded by a draw from the Tax Supported Rate Stabilization reserve be approved.**

REPORT HIGHLIGHTS

- Service system pressures on Paramedic Services have been amplified by the COVID-19 pandemic, challenging the sustainability of the service to meet ongoing service demands as Peel recovers from the pandemic and the demands on healthcare continue to escalate.
- All parts of health systems continue to be deeply impacted by the COVID-19 pandemic.
- Paramedic Services has sustained strong overall performance, despite increasing ambulance call volumes, rising offload delays, unprecedented levels of staff absenteeism, and extraordinarily challenging working conditions associated with service delivery during the pandemic.
- In response, Paramedic Services has actively engaged hospital emergency departments and the Mississauga Central Ambulance Communication Centre and other stakeholders, implementing practical solutions that address key pressure points most affecting patient flow and system efficiency.
- Peel's community paramedicine program ensures that service delivery continues to adapt to changing community needs, while supporting our workforce in those areas that matter the most.
- Paramedic Services will need to continue to be resourced at levels to meet demand allowing it to adapt to a health system that is recovering from the pandemic and assume ongoing challenges associated with population growth and aging in Peel.

Paramedic Services System Pressures

- Municipal partnerships and property searches continue for another reporting station in Mississauga as well as a satellite station which aligns to the council supported Long Term Facilities Plan.
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DISCUSSION

1. Background

The Region of Peel is the designated delivery agent for paramedic services in Peel. Peel Regional Paramedic Services is responsible for delivering quality pre-hospital and community care in Peel. Regional Council is responsible for ensuring the proper provision of Paramedic Services, including setting most response time targets and approving operating and capital budgets.

As the global community enters the third year of the pandemic, all parts of the health system continue to be impacted, including Paramedic Services which has managed a range of existing and new pandemic-related pressures that all affect service delivery. This report provides an overview of system and service pressures, how Paramedic Services has responded, and directions required for service sustainability going forward.

2. Service Pressures

Over the past two years of the COVID-19 pandemic, Paramedic Services has managed the challenges of providing care to residents while also protecting staff and the local health system. Paramedic Services experienced heightened service delivery challenges in late 2021 and early 2022. During these months, the health system experienced high service demands and significant staff shortages. Paramedic services across Ontario including Peel reported more events where paramedic services had limited paramedic crews to respond to new calls to 9-1-1. These pressures were felt across the health system and resulted in backlogs in patient flow, including offload delay.

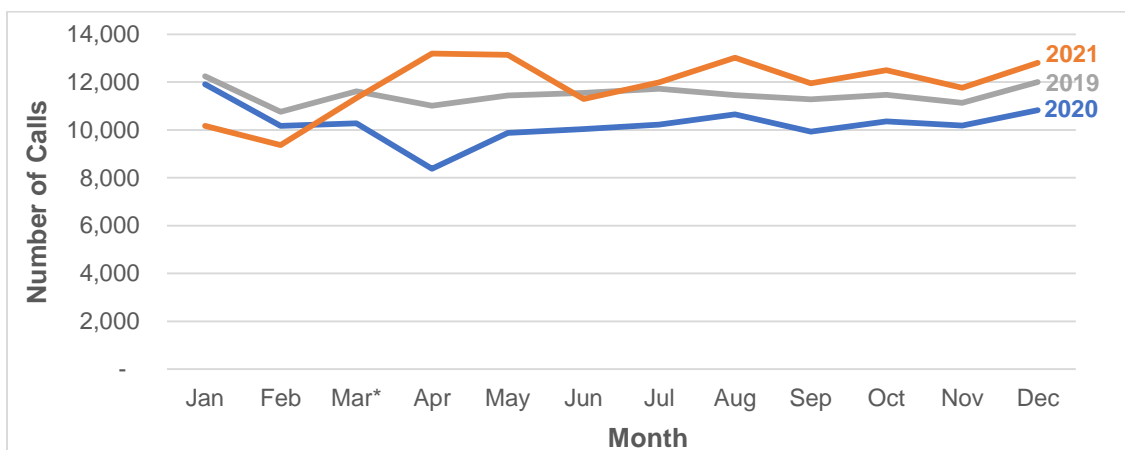
a) Ambulance Call Volumes

Ambulance call volume is a prime measure of service demand, and population growth is a key contributor to this demand. From 2011 to 2021, Peel's population grew by approximately 12 per cent. Prior to the COVID-19 pandemic, Paramedic Services planned its services based on a 10-year average annual call volume growth rate of 5.4 per cent.

Figure 1 tracks the total number of calls per month from 2019 through 2021. The COVID-19 pandemic provincial lock-down measures and public hesitancy to seek emergency health care resulted in an 11 per cent reduction in call volume in 2020 (137,669 calls in 2019 down to 122,817 calls in 2020). However, 2021 call volumes recovered, increasing by almost 16 per cent above 2020 call volumes. Based on the call volumes seen between January and March 2022, the overall yearly volume is projected to increase by another 12 per cent in 2022.

Paramedic Services System Pressures

Figure 1. Total number of calls per month, 2019 to 2021



*Note: COVID-19 pandemic provincial lock-down measures began in March 2020.

Table 1 further details the annual call volumes by municipality and for the Region of Peel. Despite the impacts of the pandemic on call volumes over time, the percentage of patients transported to hospitals out of total number of emergency calls has remained constant at 59 per cent over the past three years.

Table 1. Annual call volume by municipality in Peel, 2019 to 2021

Municipality	2019	2020	2021
Brampton	56,535	51,471	60,647
Mississauga	73,804	64,757	73,647
Caledon	7,330	6,589	8,237
Region of Peel	137,669	122,817	142,531

Notwithstanding the call volume increase, Peel Paramedics continue to respond to over 95 per cent of Peel's emergency calls, as detailed in Table 2.

Table 2. Total number of emergency calls in Peel, and number of calls responded to by Peel Paramedics, 2019 to 2021

Year	Total Emergency Calls	Calls Responded to by Peel Paramedics
2019	137,699	134,227
2020	122,817	119,745
2021	142,531	136,638

Remaining calls are responded to by neighboring service providers. Table 3 identifies the six neighboring service providers that responded to most calls within Peel, with the remaining service providers noted as "Others." In 2021 Peel responded to 5,254 calls in neighboring municipalities to provide seamless service.

Paramedic Services System Pressures

Table 3. Total number of calls within Peel responded to by neighbouring service providers, 2019 to 2021

Year	Toronto	York	Dufferin	Halton	Simcoe	Wellington	Others	Total
2019	1,347	918	632	405	57	32	51	3,442
2020	1,159	752	617	409	56	32	29	3,054
2021	1,675	1,944	821	1,030	100	47	263	5,880

While the COVID-19 pandemic interrupted call volume growth in 2020, call volumes rebounded in 2021, 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 have been updated (March 2022); new forecasts continue to show a steady growth in call volumes out to 2036. Given the current call volumes and their predicted growth, building capacity to meet this demand will require 67 additional ambulances, three new reporting stations and five new satellite stations by 2030. One new reporting station has been approved as part of the 2022 Region of Peel Budget. While Paramedic Services cannot control the number of calls it receives, it can look to opportunities to manage the demand in ways that alleviate strain on the system; improvements to ambulance dispatch, community paramedicine programming and other operational enhancements detailed later in this report are expected to increase Paramedic Services' capacity to meet call volume demands in future years. As benefits of system improvements are realized, they may change future resource requirements; for this reason, it is crucial to continue monitoring the data and updating the predictive models on a yearly basis to best respond to the needs of the residents of Peel.

Municipal partnerships and property searches continue for another reporting station in Mississauga as well as a satellite station which aligns to the council supported Long Term Facilities Plan mentioned above.

A copy of "Paramedic Services Long Term Facilities Capital Plan Update" is included in Appendix I.

b) Response Times

Paramedics Services' performance is measured based on achieving target response times across five patient acuity levels and for sudden cardiac arrest (SCA) Response time targets are set by Regional Council, and by the Ministry for the most urgent life-threatening calls.

The report titled "Paramedic Services 2022 Response Time Framework", listed on the October 14, 2021 Regional Council agenda reported overall response times to be generally within approved targets for most acuity level targets over the past two years.

Despite pandemic-related pressures and challenges, Peel Paramedics met most response time targets in 2020 and 2021, with response times for CTAS 1 calls being the only exception. While the remaining response time targets are being met, response times increased by approximately one minute or more from 2020 to 2021. Achieving response time targets for CTAS 1 patients continues to be a challenge. Table 4 reports targets and response times for all types of calls.

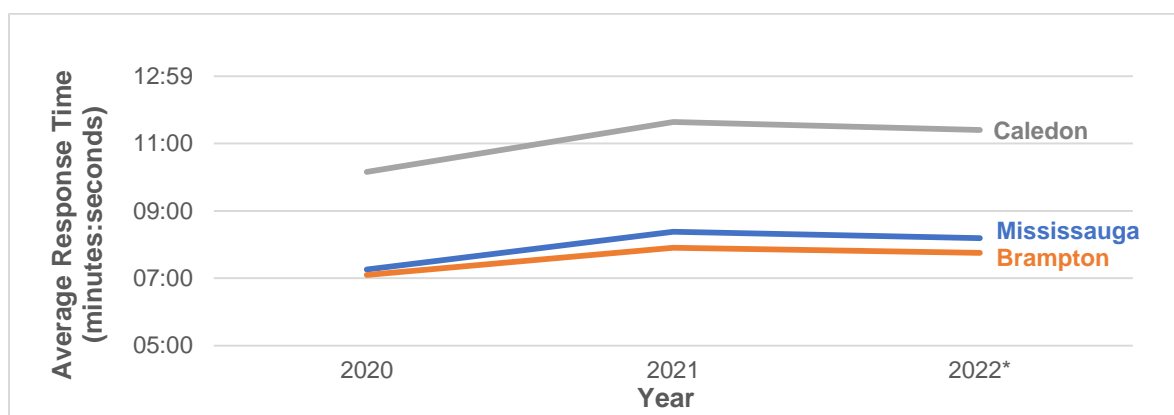
Paramedic Services System Pressures

Table 4. Region of Peel, Response times by patient CTAS level and targets, 2020-2021

Patient CTAS Level	Target Time (minutes:seconds)	Target Percentile	Response Times (minutes:seconds)	
			2020	2021
SCA	6:00	70%	5:59	5:51
CTAS 1	8:00	75%	8:32	8:41
CTAS 2	10:00	80%	8:54	9:54
CTAS 3	13:00	90%	10:59	12:48
CTAS 4	14:00	90%	11:36	12:36
CTAS 5	14:00	90%	11:38	13:19

Figure 2 shows the average response time by municipality within Peel from 2020 to March 31, 2022. All three municipalities experienced an approximate one-minute increase in average response time in 2021 compared to 2020.

Figure 2. Average response time by municipality, 2020 to 2022



*Note: Average response time for 2022 includes data from January 1 to March 31, 2022.

Each municipality also experienced increases in the average response times by patient CTAS level from 2020 to 2021. Increases in average response time ranged from 27 seconds to four minutes and 55 seconds, with the exception of the average response time for CTAS 1 patients in Caledon, which decreased by 16 seconds. Table 6 reports these average response times by municipality.

Paramedic Services System Pressures

Table 6. Average response times by Municipality and patient CTAS level, 2020 to 2021

Patient CTAS Level	Average Response Times by Municipality (minutes:seconds)					
	Brampton		Mississauga		Caledon	
	2020	2021	2020	2021	2020	2021
CTAS 1	06:58	07:19	07:01	07:28	09:41	09:25
CTAS 2	06:49	07:37	06:57	07:57	09:36	10:37
CTAS 3	07:01	08:10	07:12	08:20	09:56	10:59
CTAS 4	07:17	08:05	07:23	08:21	08:58	10:11
CTAS 5	06:59	08:08	07:40	08:20	09:16	14:12

Health Services, Strategic Policy and Performance undertook an independent review of Paramedic Services response times in the province. Their analyses showed that response time for the most urgent life-threatening calls within the Region of Peel is comparable to other jurisdictions in Ontario, with longer average response times in Peel's urban areas compared to other urban areas and shorter average response times in rural areas compared to other rural areas. A copy of "Analysis of Rural and Urban Average Code 4 Response Times Across Ontario Executive Summary, 2022" is included as Appendix II.

As indicated in the report titled "Medical Priority Dispatch System for Paramedic Services" listed on the May 26, 2022, Regional Council agenda, Paramedic Services expects to see a gradual change in response times across different patient acuity levels with the introduction of the Medical Priority Dispatch System (MPDS) to support more accurate patient triaging by the Mississauga CACC. As the Mississauga Central Ambulance Communication Centre (CACC) and Paramedic Services gradually adjust to MPDS, Paramedic Services anticipates decreased response times for the highest acuity calls, and longer response times for non-urgent calls.

Performance reporting against the 2022 response times targets and the proposed 2023 response time targets will be presented to Regional Council in September 2022 for approval.

c) Paramedic Offload Delay

The industry standard time for Paramedics to transfer patient care to hospital staff, complete paperwork, and return to the road, ready to respond to new 9-1-1 calls is 30 minutes. Time more than 30 minutes is considered to be 'offload delay'. Paramedic offload delay continues to impact paramedic services across Ontario, including Peel.

Over the past two years, Paramedic Services has seen a marked increase in offload times related to limited hospital staff resources to facilitate transfer of patients to the Emergency Department staff, as well as essential but time-consuming COVID-19 infection prevention and control protocols. Despite Paramedic Services' and all three Peel-area hospitals continuous efforts to reduce offload delays, these added delays reduce the availability of paramedics to return to the road to provide coverage following transfer of patient care.

Paramedic Services System Pressures

From 2019 to 2021, the total paramedic hours lost to offload delay across all three hospital sites increased by approximately 14 per cent, from 40,875 hours in 2019 to 46,364 hours in 2021. Offload delays continued into the first three weeks of January 2022 when Paramedic Services lost a total of 2,650 service hours. Delays at Brampton Civic Hospital contributed to almost half of these hours, costing approximately 1,200 hours, or the equivalent of 100 ambulances waiting a full 12-hour shift at the hospital with patients.

d) Workforce Health and Well-Being

The above service pressures all challenge Peel's paramedic workforce and service delivery. Paramedic Services actively monitors key indicators that can reflect paramedic well-being, including absenteeism, overtime, and end-of-shift overruns.

Paramedic Services service delivery capacity is affected by the number of paramedics available to work regularly scheduled shifts. Absenteeism significantly challenged scheduling efforts between March 2020 to March 2022 with overall absenteeism increasing by 14 per cent above pre-pandemic levels and averaging 6,657 hours per month. The two key contributors to this absenteeism are:

- **Quarantine time due to suspected or confirmed COVID-19.** Over the two-year period quarantine hours averaged 5,858 per month. During the fifth wave of the pandemic (November 1, 2021 to March 1, 2022), Paramedic Services operated with a daily average of 190 paramedics in quarantine, or 27 per cent of the paramedic workforce. At the time of writing this report, Paramedic Services reports a daily average of 70 paramedics in quarantine, or 10 per cent of the paramedic workforce.
- **Injuries (including over-exertion and exposures to harmful substances) and illness (mental health)** resulting in Workplace Safety and Insurance Board claims over the two-year period that accounted for 8,963 lost hours, a significant increase from 4,584 hours pre-pandemic.

Pressures on the service throughout the pandemic have also negatively affected paramedics' working conditions, as measured by overtime hours and end-of-shift overruns (situations when paramedics are required to work longer than a regularly scheduled shift to service calls or due to offload delay). Despite Paramedic Services ongoing efforts to reduce these types of events, over the past two years:

- Overtime hours increased by 25 per cent above pre-pandemic levels, averaging 1,962 hours per month.
- End-of-shift overrun hours increased by 42 per cent above pre-pandemic levels, averaging 554 hours per month.

3. Addressing System Pressures

Paramedic Services continues to implement process and service delivery improvement initiatives to mitigate system pressures, enhance service delivery and ensure system sustainability.

Paramedic Services System Pressures

a) Process Improvements and Operational Adaptations

The following provides an overview of key operational initiatives implemented by Paramedic Services to manage ongoing and new system pressures.

- i. **Paramedics deployed to emergency departments (EDs):** From December 2021 through January 2022 paramedics on modified duty provided 24/7 care coverage in all three hospitals to alleviate the pressures on hospital EDs managing high patient traffic, staffing pressures, and patient flow backlogs. This time-limited response supported a critical staffing shortage in hospitals, allowing paramedics to transfer patient care more efficiently to hospital staff and return to the road faster.
- ii. **Real-time dispatch support:** Starting January 2022, Paramedic Services senior staff have been positioned within the Mississauga Central Ambulance Communications Centre to gain real-time awareness of ambulance system status and work with dispatchers to optimize paramedic coverage in the context of a strained system. This initiative is intended to support service efficiencies such as managing offload delay and improving paramedic working conditions. A review of this initiative's impacts is planned in the coming months.
- iii. **Fit to Sit ('Fit2Sit'):** Peel Paramedics are transferring eligible low-risk patients to the waiting area in the ED while awaiting triage and registration by hospital staff. This "Fit2Sit" process began in Fall 2020 at Brampton Civic Hospital with the goal to reduce offload times, allowing paramedics to return to service to respond to new 9-1-1 calls for ambulance, and alleviating offload-related pressures on paramedics (lunch breaks and end-of-shift overruns). Over the first 13 months of Fit2Sit, the process enrolled 5,300 patients, reducing total offload delay at Brampton Civic Hospital by approximately nine per cent (1,964 hours).
- iv. **Transporting low-acuity patients to alternate destinations:** Starting in 2022, Paramedic Services can transport select low-risk patients to the Peel Memorial Urgent Care Centre as an alternate destination to the Brampton Civic Hospital ED. This process allows the patient to be received more quickly by hospital staff, allowing paramedic crews to return to the road more quickly, and reducing pressure and overcrowding in the Brampton Civic Hospital ED.

4. Sustainability

In addition to the operational innovations noted in the previous section, Paramedic Services continues to prioritize and build on measures to help improve broader health system performance, and to protect and support its workforce. The following summarizes the community paramedicine (CP) program and investments in staff mental health and well-being to ensure that service delivery continues to adapt to changing community needs and meets challenges as Peel recovers from the pandemic.

a) Community Paramedicine

Paramedic Services has expanded its CP programs aimed at reducing avoidable ED visits by individuals making frequent 9-1-1 calls for emergency service, or who are at greater risk of needing emergency health services or institutional long-term care. Seniors' wellness clinics and home visiting programs support integrated wraparound

Paramedic Services System Pressures

care for frail seniors, leveraging partnerships with Home and Community Care Support Service Organizations (formerly Local Health Integration Networks), all three hospitals in Peel, and Peel Living, with funding from the Ministry of Long-Term Care and from Ontario Health Central Region.

The 'Community Paramedicine for Long-Term Care' and 'High Intensity Supports at Home' programs are both home visiting programs supporting frail seniors. Together these programs have enrolled close to 800 clients since January 2021. During earlier waves of the COVID-19 pandemic, Peel Paramedics expanded community outreach through COVID-19 testing and vaccination. Expanded CP program implementation was interrupted due to CP paramedics being redeployed to COVID-19 testing and vaccination activities, as well as to staff ambulances during the most significant staffing shortages experienced in the period of December 2021 to January 2022.

While COVID-19 has impacted CP program delivery, the success and reach of the program has highlighted the need for community-based supports for seniors. To highlight this need, the Region continues to advocate to the Ministry of Health and Ontario Health to support programs such as CP and other integrated care programs such the Seniors Health and Wellness Village (SHWV) through sustainable funding to ensure adequate supports for seniors living in the community and in long term care.

To help secure the future for CP programs, Regional Council has supported advocacy calling on the Ontario government to establish a province-wide policy framework for CP, and for sustainable funding for these programs operated by Paramedic Services. The report titled 'Provincial Policy Framework for Community Paramedicine', listed on the March 10, 2022 Regional Council agenda identified necessary measures for the provincial government to take to ensure the sustainability of CP programming province-wide.

b) Staff Mental Health and Well-Being

Paramedic Services' entire workforce should be recognized for their unfettered dedication in caring for patients under exhausting conditions and in one of the hardest hit communities in Canada during the last two years of COVID.

Protecting all Paramedic Services' staff is critical to fostering a healthy workforce, sustaining service, and ensuring quality of care to patients, particularly under the challenging working conditions of the past two years. A multi-stage staff psychological health and safety strategy is being advanced, beginning at the leadership level and reaching all levels of the service in the months ahead. This strategy's priorities are:

- Critical incidence response management that supports staff through initial actions such as supervisors attending calls, coaching and operational de-briefs, and on-going follow-up.
- Peer support that applies proactive and reactive supports, and that uses technologies to increase access to available mental health supports such as Homewood Employee and Family Assistance Programs, the Centre for Addiction and Mental Health, and the 'Boots on the Ground' peer support for first responders program.
- Violence against Paramedics is a multi-pronged strategy designed to break down the stigma associated with mental health and the sense that violence is a normal thing to experience on the job.

Paramedic Services System Pressures

- Suicide prevention and awareness training to help staff identify at-risk employees and intervene in a safe manner.

Supporting and protecting front line and support staff remains a key priority that is central to ensuring staff health and well-being. These and any future measures to protect the workforce need to be in place to support the people responsible for delivering care, particularly as the health system recovers and adapts from the pandemic.

FINANCIAL IMPLICATIONS

Paramedic Services will need to be resourced at levels allowing it to adapt to a health system that is recovering from the pandemic and to the ongoing service pressures related to population growth and aging in Peel. Because of the pandemic, staff were uncertain how quickly call volume would increase in 2022. So instead of requesting permanent staffing resources right away, one-time funding of \$2.7 million was included in the 2022 budget as a contingency to ensure sufficient staffing resources were available.

However, the need for additional paramedic resources to serve the Peel community are required now. The system is stressed beyond what could be envisioned in 2021 while preparing for the 2022 budget cycle.

To meet the existing pressures and the forecasted call volume and service demands and to sustain current services levels Paramedic Services requires two additional 24/7 ambulances to be in place in 2022. Without these additional resources to serve the community, Paramedic Services' ability to provide quality pre-hospital care will be impacted.

This equates to 22 FTE which includes 20 direct FTE to staff ambulances and 2 FTE that support the in-direct needs as staff are added into the system. These in-direct FTE's support training and certification along with Ministry regulated certification requirements. The total annual estimated gross cost for the staffing is \$3.34 million of which 50 per cent will be eligible for Provincial funding, resulting in an additional net tax levy impact of \$1.67 million to the 2023 Budget.

For the remainder of 2022, the \$1.67 million cost of the staffing will be funded through the reserve draw of \$2.72 million that was approved in the 2022 Budget for contingent staffing needs. The \$953 thousand capital cost of the two additional 24/7 ambulances will be funded by the Tax Supported Capital Reserve (R0230).

In addition, the 2023 Capital Budget will include the monetary amounts required to purchase lands for these sites, approximately \$38.9 million had been included in the capital plan for the development of a new facility in 2024 but that budget needs to be advanced to 2023 to provide sufficient time to procure the land required. Staff continue to exercise all opportunities to partner with municipal partners and regional programs first before purchasing is considered.

APPENDICES

Appendix I - Paramedic Services Long Term Facilities Capital Plan Update

Appendix II - Analysis of Rural and Urban Average Code 4 Response Times Across Ontario Executive Summary, 2022

Paramedic Services System Pressures

Authored By: Cullen Perry, Analyst Research and Policy, Health Services

A handwritten signature in black ink that reads "Nancy Polsinelli". The signature is written in a cursive style with a large initial 'N' and 'P'.

Nancy Polsinelli, Commissioner of Health Services