M TORONTO

PARAMEDIC SERVICES



PROGRAM MAP

Paramedic Services



Paramedic Services, previously Emergency Medical Services (EMS) is responsible for protecting the quality of life in Toronto by providing 24/7 pre-hospital and out-of-hospital medical care, responding to patients with health emergencies and to the special needs of vulnerable communities through integrated, mobile, paramedic-based health care. This is provided through:

Community Paramedicine & Emergency Call Mitigation:

- Provides community-based primary medical care and referrals that support aging at home, health promotion, illness and injury prevention and reduction of 911 calls through emergency call mitigation strategies
- Provides at-home medical care to support seniors and vulnerable citizens in order to remain independent in the community
- Provides citizen first-response education and awareness within the community to support medical first response for all health care emergencies

Emergency Medical Dispatch & Preliminary Care

• Provides immediate access to dispatch life support instructions through Toronto's Central Ambulance Communications Centre prior to paramedic arrival

Emergency Medical Care

 Provides paramedic-based, mobile health services and emergency medical response, and provides medically appropriate and functionally sound transport for all patients in the community.

City Emergency and Major Event Mass Casualty Care

Provides on-site, dedicated medical coverage for a variety of large-scale events and ability to respond to emergencies involving mass casualty victims.

SUMMARY OF PERFORMANCE MEASUREMENT RESULTS

Question	Indicator/Measure	Internal Comparison of Toronto's 2016 vs. 2015 Results	External Comparison to Other Municipalities (MBNC) By Quartile for 2016	Chart & Page Ref.					
Service / Activity Level Indicators									
How many hours are Paramedic vehicles in-service and available to respond to emergencies?	Paramedic Services Actual Weighted Vehicle In-Service Hours per 1,000 Population - (Service Level)	Increase Number of in-service vehicle hours increased (service level indicator)	3 Lower rate of in-service vehicle hours compared to others (service level indicator) (high population density cities, like Toronto, have shorter travel distances, but increased traffic congestion, and may require fewer vehicle hours)	21.1 21.2 pg. 6/7					
How many emergency patient transports does Toronto Paramedic Services provide?	Total and Emergency Patient Transports	Increase Number of emergency patient transports increased (activity level indicator)	N/A	21.4 pg. 8					
How many total vehicle responses (emergency & non- emergency) are performed by Paramedic Services?	All Paramedic Services vehicle responses per 1,000 Population (Activity Level)	Increase Number of total vehicle responses increased in 2016 (activity level indicator)	2 Higher rate of total vehicle responses compared to others (activity level indicator)	21.3 21.5 pg. 8/9					
	Con	nmunity Impact Measures							
What percentage of time do ambulances spend at hospitals transferring patients?	Percentage of Ambulance Time Lost to Hospital Turnaround - (Community Impact)	Increase Percentage of lost ambulance time (off- load delay) increased	4 Highest percentage of lost ambulance time (off-load delay) compared to others	21.6 21.7 pg. 10/ 11					



Question	Indicator/Measure		Internal Comparison of Toronto's 2016 vs. 2015 Results		External Comparison to Other Municipalities (MBNC) By Quartile for 2016	Chart & Page Ref.		
Customer Service Measures								
What percentage of time does an ambulance crew arrive (within 8 minutes) to provide service for life- threatening calls?	RTS CTAS 1 - % time an ambulance crew arrives on scene to provide ambulance services to sudden cardiac arrest patients or other patients categorized as CTAS 1, within eight minutes of the time notice is received respecting such services		Stable The percentage of time an ambulance crew arrives within 8 minutes for life-threatening calls was stable (No Chart)		1 Higher percentage of time ambulance crews respond within 8 minutes to life- threatening calls compared to others	21.8 pg. 12		
What percentage of time does a person equipped with a defibrillator arrive on scene (within six minutes) to provide ambulance services to sudden cardiac arrest patients?	RTS SCA – Response Time - Sudden Cardiac Arrest		Stable The percentage of time a person equipped with a defibrillator arrived on scene within 6 minutes was stable (No Chart)		1 Highest percentage of time ambulance crews respond within six minutes to sudden cardiac arrest patients compared to others	21.9 pg. 13		
Efficiency Measures								
What does it cost for Paramedic Services to transport a patient?	Paramedic Operating Cost per Patient Transported - (Efficiency)		Stable Operating cost per patient transported was stable		3 Operating cost per patient transported was higher compared to others	21.10 21.11 pg. 14/ 15		
What does it cost for Paramedic Services to transport a patient?	Paramedic Total Cost per Patient Transported -(Efficiency)		Stable Total cost per patient transported was stable		3 Total cost per patient transported was higher compared to others			



Question	Indicator/Measure	Internal Comparison of Toronto's 2016 vs. 2015 Results		External Comparison to Other Municipalities (MBNC) By Quartile for 2016			Chart & Page Ref.
What is the hourly cost to have a vehicle in-service, available to respond to emergencies?	Paramedic Services Operating Cost per Actual Weighted Vehicle Service Hour – (Efficiency)	Stable Operating cost per in- service vehicle hour was stable in 2016		4 Highest operating cost per in-service vehicle hour compared to others			21.12 21.13
What is the hourly cost to have a vehicle in-service, available to respond to emergencies?	Paramedic Services Total Cost per Actual Weighted Vehicle Service Hour – (Efficiency)	Stable Total cost per in-service vehicle hour was stable in 2016		4 Highest total cost per in- service vehicle hour compared to others			pg. 15/16
Overall Results		Service/ Activity Level Indicators (Resources) 3 - Increased 0 - Stable 0 - Decreased. 100% favorable or stable	Performance Measures (Results) 0 - Favorable 6 - Stable 1 - Unfavorable 86% favorable or stable	Service/ Activity Level Indicators (Resources) 0 - 1st quartile 1 - 2 nd quartile 1 - 3 nd quartile 0 - 4th quartile 50% in 1st and 2nd quartile	Performance Measures (Results) 2 - 1st quartile 0 - 2nd quartile 2 - 3rd quartile 3 - 4th quartile 28.5% in 1st and 2nd quartile		

For an explanation of how to interpret this summary and the supporting charts, please see the Guide to Toronto's Performance Results. These quartile results are based on a maximum sample size of 12 municipalities.

M Toronto

SERVICE LEVEL

One indication of Paramedic Services service levels is the hours that Paramedic Service vehicles are in-service, either on calls or available to respond to emergencies.

21.1 – HOW MANY HOURS ARE TORONTO'S VEHICLES IN-SERVICE AND AVAILABLE TO RESPOND TO EMERGENCIES?



Chart 21.1 provides Toronto's weighted in-service Paramedic Service vehicle hours per 1,000 population.

Chart 21.1 (City of Toronto) Weighted In-Service Vehicle Hours per 1,000 Population

Weighted hours take into consideration the number of personnel on the three different types of emergency response vehicles (ambulances, first response units and supervisory units). Note the results for 2016 exclude supervisory units.

In 2016 the weighted vehicles hours per 1,000 population increased by 4% from the previous year. From 2013 onwards, Toronto's weighted in-service vehicle hours per 1,000 population has generally increased.

21.2 – HOW DO TORONTO'S IN-SERVICE VEHICLE HOURS COMPARE TO OTHER MUNICIPALITIES?



Chart 21.2 compares Toronto's 2016 weighted inservice Paramedic Services vehicle hours per 1,000 population to other MBNC municipalities, reflected as columns relative to the left axis.

Chart 21.2 (MBNC 2016) Weighted In-Service Vehicle Hours per 1,000 Population

Population density (population per square km) is plotted as a line graph relative to the right axis.

Toronto ranks ninth of twelve municipalities (third quartile) in terms of having the highest number of in-service Paramedic Services vehicle hours. Toronto's high population density plays a significant role in this result. In cities with high population densities, travel distances might be shorter, but may have more traffic congestion, which impacts the lower vehicle hours.

Although Toronto's Paramedic Services has the fourth lowest rate of vehicle hours deployed in service delivery, Toronto's ambulances continue to be among the busiest of the MBNC municipalities, engaged in patient care activities 54% of the time in 2016, compared to MBNC median of 33.7%.

21.3 – HOW MANY VEHICLE RESPONSES DOES TORONTO PARAMEDIC SERVICES PROVIDE?



Chart 21.3 shows the total number of vehicle responses and the total number of vehicle responses per 1,000 population.

Total number of responses increased by 2.5% in 2016.



21.4 – HOW MANY PATIENT TRANSPORTS DOES TORONTO PARAMEDIC SERVICES PROVIDE?



Chart 21.4 shows the number of patients transported by Toronto Paramedic Services.

Chart 21.4 (City of Toronto) Total Patient Transports

The number of patients transported by Toronto Paramedic Services continues to grow rapidly, increasing 39 per cent (over 62,000 patients) since 2007, placing great pressure on Toronto Paramedic resources.

21.5 – HOW DO THE NUMBER OF PARAMEDIC SERVICES VEHICLE RESPONSES IN TORONTO COMPARE TO OTHER MUNICIPALITIES?



Chart 21.5 compares Toronto's 2016 results for the total number of vehicle responses, to other MBNC municipalities.

Chart 21.5 (MBNC 2016) Total Paramedic Service Vehicle Responses per 1,000 Population

In terms of the highest rate of vehicle responses to calls for service, Toronto ranks fourth of eleven (second quartile) for total vehicle responses.

COMMUNITY IMPACT

The turnaround time required to transfer a patient from the care of paramedics to the care of hospital staff can have a significant impact on service. This turnaround time includes the time it takes the hospital to triage and transfer the patient, complete patient care documentation and delays due to shortages of hospital resources (commonly referred to as off-load delay). Off-load delays result in less time that paramedics are available "on the road" to respond to other emergency calls.

21.6 – WHAT PERCENTAGE OF TIME DO AMBULANCES IN TORONTO SPEND AT HOSPITALS TRANSFERRING PATIENTS?



Chart 21.6 shows Toronto's results for the total hours and percentage of ambulance hours involved in the turnaround activities noted above.

Chart 21.6 (City of Toronto) Hours or Ambulance Time Lost to Hospital Turnaround

Number of hours lost increased by 18.6% in 2016. Off-load delays at hospitals account for much of this time. The increase in total time spent at hospital in 2016 was due to the increase in emergency patient transport volume as shown in Chart 21.4.



21.7 - HOW DOES TORONTO'S AMBULANCE TIME SPENT AT HOSPITALS COMPARE

Chart 21.7 (MBNC 2016) Percentage of Ambulance Time Lost to Hospital Turnaround

In terms of shortest ambulance turnaround time, Toronto ranks highest of twelve municipalities (fourth quartile). While the Hospital Offload Delay Nurse Program has relieved some pressure on Paramedic Services resources, increased emergency calls, increased patient transports and offload delay remain significant pressures that contribute to Paramedic Services use of overtime in order to maintain service levels.



CUSTOMER SERVICE

CTAS, or the Canadian Triage & Acuity Scale, is a standardized tool that enables emergency departments and paramedic services to prioritize care requirements according to the type and severity of the presenting signs and symptoms. Patients are assigned a CTAS level between 1 (more severe, life threatening) and 5 (less severe).

21.8 – WHAT PERCENTAGE OF TIME DOES AN AMBULANCE CREW ARRIVE (WITHIN 8 MINUTES) TO PROVIDE SERVICE FOR LIFE-THREATENING CALLS?



Chart 21.8 compares Toronto's 2016 result to other municipalities for the percentage of time it takes (within 8 minutes) an ambulance crew to respond to lifethreatening calls. The municipality's target is plotted with each column.

Chart 21.8 (MBNC 2016) Percentage of time an ambulance crew arrives on scene to provide ambulance services to sudden cardiac arrest patients or other patients (CTAS 1), within eight minutes of the time notice is received from dispatch

In 2016, Toronto ambulance crews responded to life-threatening calls (CTAS 1) within 8 minutes, 79.4% of the time, which is above the target of 75%. In terms of highest actual percentage of time to arrive at the scene, Toronto ranked second of twelve (first quartile). It is important to note that Toronto Paramedic Services also responds to a high number of calls that return as CTAS 1 or 2 (life-threatening).



21.9 – WHAT PERCENTAGE OF TIME DOES A PERSON EQUIPPED WITH A DEFIBRILLATOR ARRIVE ON SCENE (WITHIN SIX MINUTES) TO PROVIDE AMBULANCE SERVICES TO

SUDDEN CARDIAC ARREST PATIENTS?

Chart 21.9

compares Toronto's 2016 result to other municipalities for the percentage of time it takes a person equipped with a defibrillator to arrive on scene to provide emergency medical care to sudden cardiac arrest patients, within six minutes. A municipality's target is plotted with each column.

Chart 21.9 (MBNC 2016) Percentage of time that a person equipped to provide any type of defibrillation has arrived on scene to provide defibrillation to sudden cardiac arrest patients within six minutes of the time notice is received from dispatch

The actual result is the percentage of time that a person equipped to provide any type of defibrillation has arrived on-scene to provide defibrillation to sudden cardiac arrest patients within six minutes of the time notice is received from dispatch.

In 2016, Toronto ambulance services responded to sudden cardiac arrest patients within six minutes, 89.5 percent of the time, and exceeded its target of 60 percent. Compared to other municipalities, Toronto ranked first of twelve municipalities (first quartile).

M Toronto

EFFICIENCY

21.10 – WHAT DOES IT COST PARAMEDIC SERVICES TO TRANSPORT A PATIENT IN TORONTO?



Chart 21.10 looks at efficiency of Paramedic services in Toronto in terms of utilization, by relating costs to the number of patients that have been transported (both emergency and non-emergency).

Chart 21.10 (City of Toronto) Operating & Total Cost per Patient Transported

To reflect the impact of inflation, the graph also provides Consumer Price Index (CPI) adjusted operating cost results, which are plotted as a line graph. This adjustment discounts the actual operating cost result for each year by the change in Toronto's CPI since the base year of 2002.

Both the operating cost and total cost (operating cost plus amortization) per patient transported were relatively stable in 2016. It should be noted that Toronto's costs exclude those related to dispatch in order to be comparable to other municipalities, where this function is provided by the Ontario Ministry of Health and Long-Term Care.

From 2009 to 2016, Toronto Paramedic Services total cost per patient transported has increased by 11.37% (or \$93). This is because of the additional time required to complete patient transports due to offload delays at hospitals and increased emergency call volumes.

Starting in 2009, changes in accounting policies were instituted; therefore, results of 2009 and subsequent years are not as comparable to 2008 and prior years. Amortization is shown as a separate stacked column.

21.11 – WHAT DOES IT COST PARAMEDIC SERVICES TO TRANSPORT A PATIENT IN TORONTO?



Chart 21.11 compares Toronto's 2016 operating cost and total cost per patient transported to other MBNC municipalities.

Chart 21.11 (MBNC 2016) Operating & Total Cost per Patient Transported

In terms of the lowest cost Toronto ranks seventh of twelve (third quartile) for both operating and total costs. Toronto's ambulances were also some of the busiest of the MBNC municipalities. Although Toronto has higher costs on an hourly basis (see below), Toronto continues to have a high utilization rate of its vehicles in transporting patients, which improves Toronto's ranking for this measure based on the cost per patient transported.

21.12 – WHAT IS THE HOURLY COST IN TORONTO TO HAVE A PARAMEDIC SERVICES VEHICLE IN-SERVICE, AVAILABLE TO RESPOND TO EMERGENCIES?



Chart 21.12 looks at the efficiency of Paramedic Services in Toronto in terms of its supply by relating costs to the hours that Paramedic Services vehicles are inservice, responding to or available to respond to emergencies.

Chart 21.12 (City of Toronto 2016) Operating & Total Cost per Weighted In-Service Vehicle Service Hour



To reflect the impact of inflation, this graph also provides Consumer Price Index (CPI) adjusted operating cost results, which are plotted as a line graph. This adjustment discounts the actual operating cost result for each year by the change in Toronto's CPI since the base year of 2002. Toronto's costs exclude those related to dispatch in order to be comparable to other municipalities, where this function is provided by the Ontario Ministry of Health and Long-Term Care.

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Over this 8-year period, the total cost per in-service vehicle hour increased by 17.8% primarily due to higher wages from collective agreement settlements, which exceeded the increase in Toronto's CPI. In 2014 City Council approved a four year paramedic staffing plan; as a result, vehicle in-service hours increased in 2014, 2015, and 2016. Costs have also increased due to collective agreement wage and benefit costs to meet the continued growth in emergency patient volumes.



In 2016, total and operating cost were relatively stable compared to the previous year.

21.13 - HOW DOES TORONTO'S HOURLY IN-SERVICE VEHICLE COST FOR

Chart 21.13 compares Toronto's 2016 Paramedic Services operating and total cost per weighted-in-service vehicle hour to other Ontario municipalities.



In terms of the lowest cost, Toronto ranks the highest of twelve municipalities (fourth quartile) for the highest cost (both operating and total) per vehicle hour. However, it should be recognized that Toronto's ambulances continue to be among the busiest of the MBNC municipalities.

2016 ACHIEVEMENTS AND 2017 PLANNED INITIATIVES

The following initiatives have improved or will help to improve the effectiveness of Toronto's Paramedic Services:

2016 Achievements

Community Paramedicine and Emergency Call Mitigation

- Continued to employ and investigate innovative emergency call diversion and mitigation strategies for low acuity calls to improve ambulance availability for high acuity calls.
- Continued to use the Community Paramedicine Program to re-direct specific patient groups to appropriate preventative, out-of-hospital medical care to minimize or eliminate their reliance on 911 and the hospital system.
- Continued to coordinate and expand the Public Access Defibrillation (PAD) Program to save more lives.

Emergency Medical Dispatch and Preliminary Care

- Hired first-ever class of 9 part-time Call Takers to improve staffing flexibility in the Central Ambulance Communications Centre, and provide continued support to 911 operations.
- Continued to improve processing of emergency calls using decision-support software which allows EMDs to more accurately anticipate, monitor and assign the right paramedic resources throughout the city.
- Continued to employ, during peak periods of call activity, a Patient Safety Advocate (PSA) function as part of the Division's strategy to mitigate possible service delays.

Emergency Medical Care

- Projected to transport 220,677 emergency patients to hospital in 2016.
- Continued to expand lifesaving programs such as: STEMI (type of heart attack), stroke, trauma and post cardiac arrest patient care programs to reduce pre-hospital mortality and significantly improve quality of life for patients and families.
- Continued to improve response times to life-threatening calls by: expanded use of Part-Time Paramedics and continued implementation of Council-approved staffing recommendations from the EMS/Fire Service & Organizational Review completed by an independent third party.

2017 Planned Initiatives

City of Toronto and has established strategic directions with the following 2017 deliverables.

- 24-hour emergency medical response for the City of Toronto from 45 ambulance stations located across the City.
- Target response times to life-threatening emergency calls within 11.4 minutes 90% of the time.
- Provision of an estimated 229,500 emergency patient transports in 2017, an estimated increase of 4% over the projected 220,677 transports in 2016.



- Maintenance and oversight for approximately 1,550 Automatic External Defibrillators in 2017.
- Phase 1 of the transition to Multi-Function Stations to improve efficiencies in managing staff and resources will occur with the opening of the new 1300 Wilson Station.

Factors Influencing the Results of Municipalities

The results of each municipality included in this report can be influenced to varying degrees by factors such as:

- Geographic coverage and population density: in high-density cities, congestion can make navigating roads more difficult, resulting in significant delays. In contrast, rural areas can have large under-populated areas, making it challenging to provide cost-effective and timely emergency coverage.
- Local demographics: an older, more vulnerable or economically disadvantaged population can increase the demand for service, as can seasonal visitors and the inflow of workers from other communities during the day.
- Level of certification: the mix of advanced care vs. primary care paramedics and their differing wage rates, as well as the status of multi-year collective bargaining agreements can impact costs. Level of certification mix can also impact operational performance and results, e.g., Toronto uses a targeted model to send Advanced Care Paramedics to critically ill or injured patients.
- Specialized services: tactical teams, multi-patient transport units, and bike and marine teams are increasingly being provided by the larger municipalities to better address urban population demands, which can affect costs.
- Off-load delays in hospitals: results can be impacted by a number of factors, such as bed occupancy rates, the level of activity in hospital emergency departments and the efficiency of admission procedures.
- Increases in emergency calls and emergency patient transports due to an expanding and aging population with an increasing number of ill and injured.
- Dispatch: The system, processes and governance of the dispatch impact the efficiency and effectiveness of the land ambulance operation. Local control or influence of dispatch operations has a direct influence on Emergency Medical Services/Paramedic Services operations.