

# 8 Emergency Medical Services (EMS)



## What is the Service?

Emergency Medical Services (EMS), increasingly referred to as paramedic services, provides emergency care to stabilize a patient's condition, initiates rapid transport to hospitals, and facilitates both emergency and non-emergency transfers between medical facilities.

*Specific objectives include:*

- All citizens should have equal access to ambulance services
- Ambulance services are an integrated part of the overall emergency health care services
- Closest available and/or appropriate ambulance responds to a patient regardless of municipal boundaries
- Ambulance service operators are medically, operationally and financially accountable to provide service of the highest possible caliber
- Ambulance services must adapt to the changing health care, demographic, socio-economic and medical needs in their area

## Influencing Factors

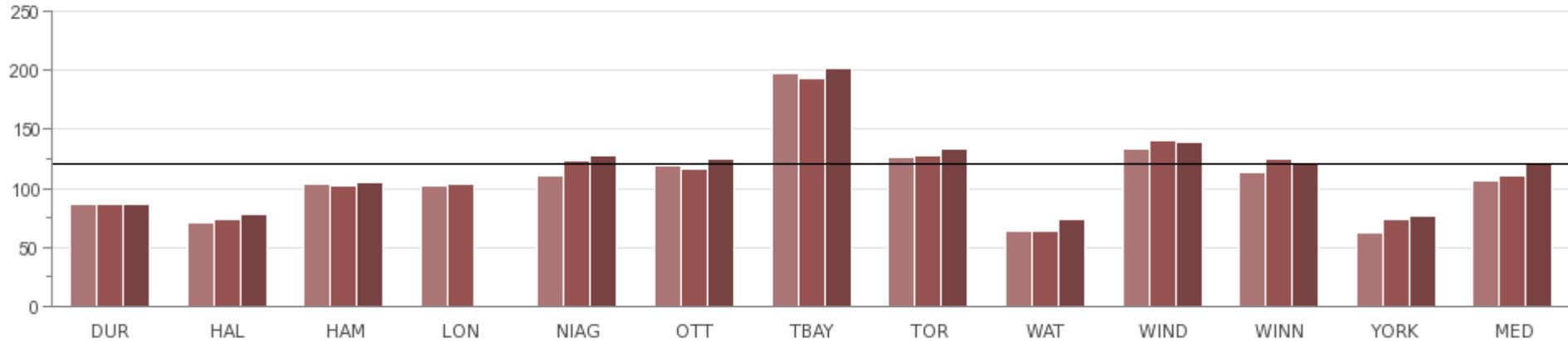
**Community Services:** Community paramedicine, tactical teams, multi-patient transport units, bike and marine teams are examples of services being provided by municipalities to meet the needs of their community. System design and service delivery are impacted by the ratio of Advanced Care Paramedics vs. Primary Care Paramedics.

- **Demographics:** Age and health status of the population has an impact on the number and severity of calls. An older population can increase the demand for services, as can seasonal visitors and the inflow of workers from other communities during the day.
- **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 EMS operations. The majority of dispatch centers in Ontario are operated directly by the Ministry of Health.
- **Geography:** Mix of urban vs. rural geography can influence response time and cost factors. Traffic congestion can make navigating roads more difficult, resulting in longer response times. Large rural geographic areas can make it challenging to provide cost-effective, timely emergency coverage.
- **Governance:** All EMS operations are governed and regulated provincially pursuant to the Ambulance Act including minimum operational standards. Budgeted Resources, Local Response Times Standards and Deployment Plans are mandated by Council.
- **Hospital Delay:** Varying lengths of delays in the off-load of patients at local hospitals, can impact the resources required and availability to respond to calls.
- **Non Residents:** Visitors, workers, tourists and out of town hospital patients can increase the call volume; but are not reflected in the measures (population is that of municipality only).
- **Vehicle Mix:** Varying mixture of response vehicles which have different levels of staffing.

# Emergency Medical Services (EMS)

How many calls were responded to by EMS providers for every 1,000 people?

Fig 8.1 Total EMS Responses per 1,000 Population

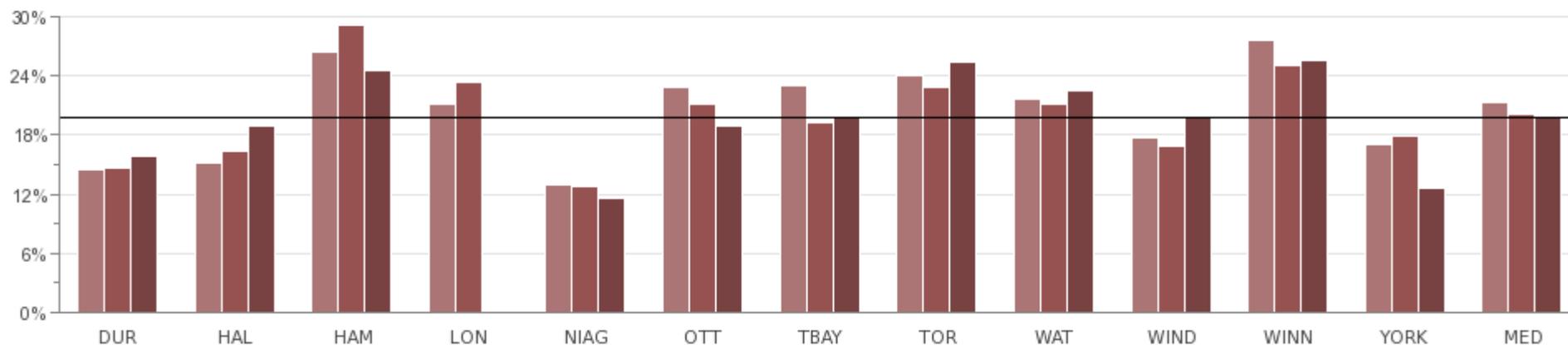


2012	86	71	103	102	111	119	197	126	64	133	113	62	107
2013	87	74	102	103	123	117	193	128	63	140	125	74	110
2014	87	78	105	N/A	128	125	202	133	74	139	121	77	121

Source: EMDS229 (Service Level)

## What percent of time do ambulances spend at the hospital?

Fig 8.2 Percent of Ambulance Time Lost to Hospital Turnaround



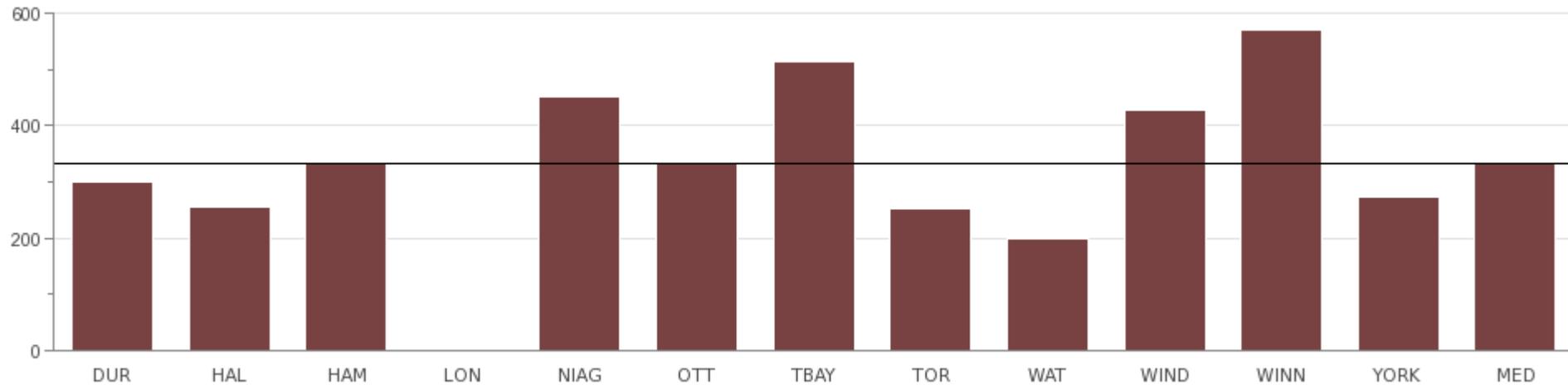
<b>2012</b>	<b>14.5%</b>	<b>15.2%</b>	<b>26.5%</b>	<b>21.1%</b>	<b>13.0%</b>	<b>22.8%</b>	<b>23.1%</b>	<b>24.1%</b>	<b>21.6%</b>	<b>17.8%</b>	<b>27.7%</b>	<b>17.0%</b>	<b>21.4%</b>
<b>2013</b>	<b>14.7%</b>	<b>16.4%</b>	<b>29.2%</b>	<b>23.3%</b>	<b>12.8%</b>	<b>21.2%</b>	<b>19.2%</b>	<b>22.9%</b>	<b>21.1%</b>	<b>16.9%</b>	<b>25.1%</b>	<b>17.9%</b>	<b>20.2%</b>
<b>2014</b>	<b>15.9%</b>	<b>19.0%</b>	<b>24.5%</b>	<b>N/A</b>	<b>11.5%</b>	<b>18.9%</b>	<b>19.9%</b>	<b>25.5%</b>	<b>22.5%</b>	<b>19.7%</b>	<b>25.6%</b>	<b>12.6%</b>	<b>19.7%</b>

Source: EMDS150 (Community Impact)

Note: Time spent in hospital includes the time it takes to transfer a patient, delays in transfer care due to lack of hospital resources (off-load delay), paperwork and other activities. The more time paramedics spend in the hospital process equates to less time they are available to respond to calls.

## How many hours of ambulance service are provided in the community for every 1,000 people?

Fig 8.3 EMS Weighted Vehicle In-Service Hours per 1,000 Population

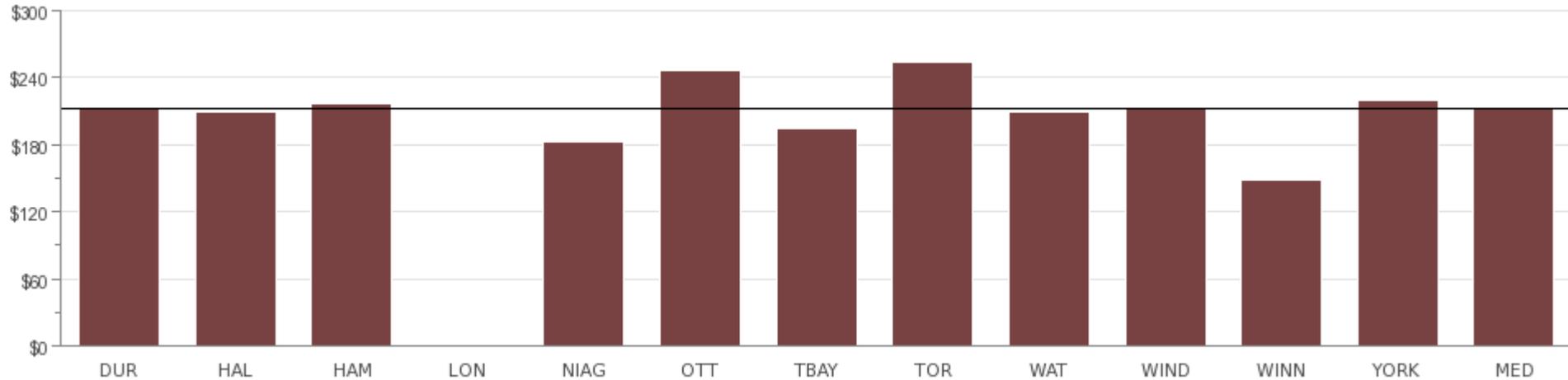


2014	301	257	336	N/A	451	333	515	253	198	427	571	272	333
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Source: EMDS226 (Service Level)

## What is the total cost to provide one hour of ambulance service?

Fig 8.4 EMS Total Cost per Weighted Vehicle In-Service Hour (includes amortization)



2014	\$213	\$210	\$217	N/A	\$182	\$247	\$194	\$254	\$209	\$213	\$148	\$220	\$213
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Source: EMDS306T (Efficiency)

Note: Hours refers to only the hours that vehicles are available for service. Costs include paramedic, administrative, medical supply, building, operating, supervision and overhead.

## What percent of time does an ambulance crew arrive on scene, within eight minutes of the time notice is received, to provide ambulance services to sudden cardiac arrest patients or other patients categorized as CTAS 1?

Fig 8.5 RTS CTAS 1

<p style="text-align: center;"><b>RTS CTAS 1</b>                      What percentage of time does an ambulance crew arrive on scene to provide ambulance services to sudden cardiac arrest patients or other patients categorized as CTAS 1, within <u>eight</u> minutes of the time notice is received respecting such services ?                      (EMDS431)</p>			
Municipality	Target Percentage	Actual Percentage 2013	Actual Percentage 2014
DUR	75%	77.70%	77.28%
HAL	75%	79.50%	73.50%
HAM	75%	76.60%	76.00%
LON	50%	85.71%	N/A
NIAG	80%	77.66%	72.10%
OTT	75%	83.60%	79.50%
TBAY	70%	81.00%	81.00%
TOR	75%	70.30%	77.40%
WAT	70%	75.00%	66.00%
WIND	75%	80.00%	77.00%
WINN	90%	64.37%	75.06%
YORK	75%	75.00%	76.00%
MED		77.68%	76.00%

Note: RTS CTAS 1 – Response Time Standard – Canadian Triage & Acuity Scale

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 – least severe.

Target Percentage: Each service is able to determine and set the percentage of compliance for this measure.

The response time is calculated based on the crew notified (T2) time of the first vehicle being notified of the call and the arrived scene (T4) time of the first vehicle to reach the scene.

Actual Percentage: The percentage of time that an ambulance crew has arrived 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.

## What percentage of time does a person equipped with a defibrillator arrive on scene within six minutes of the time notice is received from dispatch, to provide ambulance services to sudden cardiac arrest patient?

Fig 8.6 RTS SCA - Within Six Minutes

<b>RTS SCA – Within Six Minutes</b> What percentage of time does a person equipped with a defibrillator arrive on scene to a sudden cardiac arrest patient within <u>six</u> minutes of the time notice is received from dispatch? (EMDS430)			
Municipality	Target Percentage	Actual Percentage 2013	Actual Percentage 2014
DUR	60%	61.40%	66.67%
HAL	55%	64.40%	52.90%
HAM	75%	77.00%	74.00%
LON	50%	76.67%	N/A
NIAG	55%	59.12%	58.80%
OTT	65%	73.50%	63.00%
TBAY	50%	65.00%	69.00%
TOR	60%	75.50%	87.30%
WAT	50%	42.00%	39.00%
WIND	55%	51.00%	58.00%
WINN	90%	73.82%	73.33%
YORK	60%	60.00%	67.00%
MED		64.70%	66.67%

Note: RTS SCA – Response Time Standard – Sudden Cardiac Arrest

Target: Each service is able to determine and set the percentage of compliance for this measure. Any person with a defibrillator stops the clock on this measure so the paramedic (service) is required to capture the time of arrival for any defibrillator by a non-paramedic party. These times are reflected at procedure code 385 with a soft time (best estimate) provided by the attending paramedic. The response time is calculated based on the crew notified (T2) time of the first vehicle being notified of the call and the arrived scene (T4) time of the first vehicle to reach the scene.

Actual: 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. Refer to Ministry Guidelines to see what is included /excluded.

Source: EMDS430 (Customer Service)

## How long does it take from the time a call is received and dispatched to EMS unit?

Fig 8.7 90<sup>th</sup> Percentile Response Time – EMS TO-2 Code 4 (AMPDS 1 and 2/DE, optional in C)

Municipality	EMS TO-2, Code 4, 90th Percentile Response Time (min:sec)		
	2012	2013	2014
DUR	2:29	No data available	3:07
HAL	2:53		2:49
HAM	3:10		2:59
NIAG	1:55		1:58
OTT	2:35		N/A
TBAY	2:18		2:50
TOR	2:59		3:04
WAT	3:50		3:53
WIND	3:27		N/A
WINN	N/A		2:41
YORK	2:41		2:57
MED	2:47		2:57

Source: 2014 - EMDS480; 2012 – EMDS419E (Community Impact)

Note: This data was not collected in 2013, therefore only two years of data is available.

The Ministry of Health and Long Term Care directly operates all land ambulance dispatch service in Ontario with the exception of Toronto and Niagara.

Dispatch time is the time from a phone call being received to the EMS unit being notified.

Code 4 refers to the highest priority calls.

90<sup>th</sup> Percentile means that 90% of all calls of the service have a dispatch time within the period reflected in the graph.