CITY OF HAMILTON

HAMILTON EMERGENCY SERVICES
Emergency Medical Services

TO: Chair and Members Emergency & Community Services Committee	**WARD(S) AFFECTED:** CITY WIDE
COMMITTEE DATE: September 10, 2012	
SUBJECT/REPORT NO: Paramedic Service Response Time Reporting 2013 (HES12014) (City Wide)	
SUBMITTED BY: Brent Browett, Paramedic Chief-Director Emergency Medical Services Hamilton Emergency Services	**PREPARED BY:** Brent Browett (905) 546-2424 x7741
SIGNATURE:	

RECOMMENDATION

(a) That the City of Hamilton adopt emergency medical response time targets for the calendar year 2013 in accordance with the Ambulance Act, Ontario Regulation 267/08, amending O. Reg. 257/00 with the heading Section 22: Part VIII, Response Time Performance Plans and the related Sections 23 and 24 (attached as Appendix A to Report HES12014);

(b) That the emergency medical response times targets noted in Appendix B to Report HES12014 respecting Response Time Performance Plan be approved.

EXECUTIVE SUMMARY

The provincial government made changes to Ambulance Response Time Standards and all municipalities must submit their Response Time Performance Plan (RTPP) by October 1 each year for the year following starting in 2012. Hamilton adopted the requirements in 2011 (HES11008) and now has to confirm the Hamilton 2013 RTPP.

The interval that the municipality is responsible for starts when the first Hamilton paramedic is notified of the call until a paramedic arrives scene, or in a sudden cardiac arrest that a rescuer with a defibrillator is on the scene. The 2013 recommended response time targets are noted in Appendix B to Report HES12014, Columns 2 and 3. To formulate the targets staff considered; practices of like jurisdictions; Canadian Triage Acuity Standards (Appendix C attached to Report HES12014); past performance; and, expert medical advice. Staff is recommending modifying the Sudden Cardiac Arrest target from 65% to 75% based on recent performance and all others remain status quo. The targets assume demands for Paramedic Services do not substantially increase.

Alternatives for Consideration – See Page 4

FINANCIAL / STAFFING / LEGAL IMPLICATIONS (for Recommendation(s) only)

Financial:
There are no financial implications.

Staffing:
There are no staffing implications.

Legal:
In order to comply with the Ambulance Act, the municipality is required to submit the 2013 response time targets to the Ministry of Health and Long-Term Care (MOHLTC).

HISTORICAL BACKGROUND (Chronology of events)

When the public calls 911 there are four time intervals that occur before the paramedic arrives at the scene (see Diagram 1). This report focuses on the intervals starting when the paramedic is first given the call and ending when the paramedic arrives on scene (Intervals 3 and 4). The other two intervals are in the control of the Hamilton Police Service (HPS) who operates the 911 call answering system (Interval 1), and the provincially operated ambulance dispatch service (Interval 2).

Diagram 1

Interval 1	Interval 2	**Interval 3**	**Interval 4**
HPS Control	MOHLTC Control	**Hamilton Paramedic Service Control**	
911 call taker answers and connects the citizen to the MOHLTC ACO*	MOHLTC ACO answers the citizen and notifies the paramedic	**The paramedic receives the call and goes mobile**	**The paramedic arrives on scene**

*Ministry of Health Long Term Care, Ambulance Communication Officer

With the past standard each Upper Tier Municipality (UTM) had a different target time for Interval 3 and 4 that was assigned by the province. The target was based on the 1996 performance for that geographical area and to comply with the regulation the UTM was required to achieve the target in at least 9 out of 10 calls (90 percent of the time).

In 2006 the provincial government in conjunction with the Association of Municipalities of Ontario (AMO) established a Land Ambulance Committee (LAC) to review various subjects including the ambulance response time standards. On July 31, 2008 the provincial government made changes to the Ambulance Act, Ontario Regulation 267/08, amending O. Reg. 257/00 with the heading Section 22: Part VIII, Response Time Performance Plans, and Sections 22 and 23.

Starting no later than 2012 all municipalities must comply to the new response time standard. Specifically the UTM will send its RTPP to the MOHLTC, Emergency Health Services Branch Director no later than October 1st of each year (Section 23 (5)) including the UTM's performance expectations for Sudden Cardiac Arrest, CTAS 1, 2, 3, 4 and 5. By March 31 of each year the UTM will report to the MOHLTC the actual times achieved in the previous year.

The new target times are the same for all UTMs in the critical patient categories and they are based on the best available medical evidence. A review is provided in Appendix D to Report HES12014 written by the Hamilton Emergency Medical Services municipal medical advisor.

For the first time, the UTM will be allowed to count the time that any defibrillator was used to assist a victim of sudden cardiac arrest. In addition, the new standard provides flexibility for each UTM to individually establish the percentage of time that the UTM expects to meet the target times in the critical patient categories and in the less acute categories the UTM are to establish their own target times and their own percentages. The other change is that the response time will now be measured based on the severity of the call as found by the paramedic (vs. how it was dispatched). Measuring the response time based on the categorization assessment by the paramedic (vs. how the call was dispatched) is consistent with the medical evaluation model.

POLICY IMPLICATIONS

There are no corporate policies affected by these recommendations.

RELEVANT CONSULTATION

Corporate Services, Risk Management Section. The advice is to consider what is achievable based on current experience and predictable changes in demand.

See also Response Time Reporting (HES11008) (City Wide) consultation.

ANALYSIS / RATIONALE FOR RECOMMENDATION

(include Performance Measurement/Benchmarking Data, if applicable)

Recommendation (a) is made to ensure that the City complies with the Ambulance Act.

Recommendation (b) has a series of suggested emergency medical services response time targets. Targets in Sudden Cardiac Arrests and CTAS1s are imposed by the MOHLTC and are new; therefore, recommended targets are consistent with current performance. Where deemed applicable, EMS also considered the percentage targets in use by the United Kingdom as they operate a publicly funded ambulance service and they have reviewed this subject matter.

ALTERNATIVES FOR CONSIDERATION

(include Financial, Staffing, Legal and Policy Implications and pros and cons for each alternative)

There are no alternatives to Recommendation (a) as it is a provincial regulation that requires the municipality to set ambulance response time targets.

With regard to Recommendation (b) the CoH could set more rigorous targets or more conservative targets. Neither is recommended based on the following explanations.

Alternative 1 – More Rigorous Targets
One alternative to staff Recommendation (b) is that Council may set more rigorous emergency medical response time targets. The concern with this approach is that it is not sustainable with existing resources if there is a sudden change in paramedic service demands in any form (i.e. more calls or prolonged hospital offload times), and further that it would beyond other comparators.

Alternative 2 – Less Rigorous Targets
A second alternative to staff Recommendation (b) is that Council may set more relaxed emergency medical response time targets. This approach may increase the risk to community safety by eliminating any tension in the system to maintain a reasonable level of response time performance that maintains public trust and that fulfils the City's strategic objective to support a "healthy community".

CORPORATE STRATEGIC PLAN (Linkage to Desired End Results)

Focus Areas: 1. Skilled, Innovative and Respectful Organization, 2. Financial Sustainability, 3. Intergovernmental Relationships, 4. Growing Our Economy, 5. Social Development, 6. Environmental Stewardship, 7. Healthy Community

Skilled, Innovative & Respectful Organization

- A culture of excellence
- More innovation, greater teamwork, better client focus
- An enabling work environment - respectful culture, well-being and safety, effective communication
- Council and SMT are recognized for their leadership and integrity

Financial Sustainability

- Financially Sustainable City by 2020
- Delivery of municipal services and management capital assets/liabilities in a sustainable, innovative and cost effective manner

Intergovernmental Relationships

- Maintain effective relationships with other public agencies

Growing Our Economy

- An improved customer service

Social Development

- Residents in need have access to adequate support services

Healthy Community

- Adequate access to food, water, shelter and income, safety, work, recreation and support for all (Human Services)

APPENDICES / SCHEDULES

Appendix A to Report HES12014 – Ambulance Act
Appendix B to Report HES12014 – Recommended Response Time Targets
Appendix C to Report HES12014 – Canadian Triage and Acuity Scale (CTAS) National Guidelines
Appendix D to Report HES12014 – Overview of Medical Evidence

ONTARIO REGULATION 267/08

made under the

AMBULANCE ACT

Made: May 27, 2008
Approved: July 23, 2008
Filed: July 30, 2008
Published on e-Laws: July 31, 2008
Printed in *The Ontario Gazette*: August 16, 2008

Amending O. Reg. 257/00
(General)

Note: Ontario Regulation 257/00 has previously been amended. Those amendments are listed in the Table of Current Consolidated Regulations – Legislative History Overview which can be found at www.e-Laws.gov.on.ca.

1. (1) Ontario Regulation 257/00 is amended by adding the following heading immediately before section 22:

PART VIII
RESPONSE TIME PERFORMANCE PLANS

(2) Section 22 of the Regulation is revoked and the following substituted:

22. In this Part,

"notice" means notice given to a land ambulance crew by a land ambulance communication service of a request;

"request" means a request made to a land ambulance communication service for ambulance services that are determined to be emergency services by the communication service at the time of the request.

23. (1) In this section,

"response time" means the time measured from the time a notice is received to the earlier of the following:

1. The arrival on-scene of a person equipped to provide any type of defibrillation to sudden cardiac arrest patients.
2. The arrival on-scene of the ambulance crew.

(2) No later than October 1 in each year after 2009, every upper-tier municipality and every delivery agent responsible under the Act for ensuring the proper provision of land ambulance services shall establish, for land ambulance service operators selected by the upper-tier municipality or delivery agent in accordance with the Act, a performance plan for the next calendar year respecting response times.

(3) An upper-tier municipality or delivery agent to which subsection (2) applies shall ensure that the plan established under that subsection sets response time targets for responses to notices respecting patients categorized as Canadian Triage Acuity Scale ("CTAS") 1, 2, 3, 4 and 5, and that such targets are set for each land ambulance service operator selected by the upper-tier municipality or delivery agent in accordance with the Act.

(4) An upper-tier municipality or delivery agent to which subsection (2) applies shall ensure that throughout the year the plan established under that subsection is continuously maintained, enforced and evaluated and, where necessary, updated, whether in whole or in part.

(5) An upper-tier municipality or delivery agent to which subsection (2) applies shall provide the Director with a copy of the plan established under that subsection no later than October 31 in each year, and a copy of any plan updated, whether in whole or in part, under subsection (4) no later than one month after the plan has been updated.

(6) An upper-tier municipality or delivery agent to which subsection (2) applies shall report to the Director, as required from time to time by the Director and on forms or in a manner provided or determined by the Director, on any matter relating to,

(a) the nature and scope of the plan established under that subsection or updated under subsection (4), and

(b) the establishment, maintenance, enforcement, evaluation and updating of the plan.

(7) Without limiting the generality of subsection (6), no later than March 31 in each year after 2011, an upper-tier municipality or delivery agent to which subsection (2) applies shall report to the Director on the following matters for the preceding calendar year:

1. The percentage of times 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.
2. The percentage of times 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.
3. The percentage of times that an ambulance crew has arrived on-scene to provide ambulance services to patients categorized as CTAS 2, 3, 4 and 5 within the response time targets set by the upper-tier municipality or delivery agent under its plan established under subsection (2).

(8) Without limiting the generality of subsection (6), an upper-tier municipality or delivery agent to which subsection (2) applies shall report to the Director on the performance of each land ambulance service operator selected by the upper-tier municipality or delivery agent in accordance with the Act in respect of the targets set for that operator under subsection (3).

24. (1) In this section,

"response time" means the time measured from the time a request is received to the time a notice is given respecting that request.

(2) No later than October 1 in each year after 2009, every land ambulance communication service shall establish a response time performance plan for the next calendar year that sets out the percentage of times that the communication service will give notice within two minutes of the time a request is received respecting sudden cardiac arrest patients or other patients categorized as CTAS 1.

(3) A land ambulance communication service to which subsection (2) applies shall ensure that throughout the year the plan established under that subsection is continuously maintained, enforced and evaluated and, where necessary, updated, whether in whole or in part.

(4) A land ambulance communication service to which subsection (2) applies shall provide the Director with a copy of the plan established under that subsection no later than October 31 in each year, and a copy of any plan updated, whether in whole or in part, under subsection (3) no later than one month after the plan has been updated.

(5) A land ambulance communication service to which subsection (2) applies shall report to the Director, as required from time to time by the Director and on forms or in a manner provided or determined by the Director, on any matter relating to,

(a) the nature and scope of every plan established under that subsection or updated under subsection (3); and

(b) the establishment, maintenance, enforcement, evaluation and updating of the plan.

(6) Without limiting the generality of subsection (5), no later than March 31 in each year after 2011, a land ambulance communication service to which subsection (2) applies shall report to the Director the percentage of times in the preceding calendar year that the communication service gave notice within two minutes of the time a request was received respecting sudden cardiac arrest patients or other patients categorized as CTAS 1.

2. This Regulation comes into force on the day it is filed.

Made by:

GEORGE SMITHERMAN
Minister of Health and Long-Term Care

Recommended Response Time Targets

Column 1 Type of Call	Column 2 Response Time Targets (from EMS notified of the call to arrival at site)	Column 3 Recommend 2013 City of Hamilton Benchmark %	2010 No. of calls	2010 % of Cases the Proposed Target Time was Achieved	2011	2012 YTD to June
Sudden Cardiac Arrest (SCA) i.e. not breathing no pulse	Defibrillator Response Six (6) minutes or less Set by the MOHLTC	75% or better	225	64.8 % within 6m	75.1%	85.8%
CTAS* 1 (other than SCA) i.e. major shock	Paramedic Response 8 mins or less Set by the MOHLTC	75% or better	539	85.3% within 8m	84.0%	86.3
CTAS 2 (emergent care) i.e. chest pain	Paramedic Response 10 mins or less Set by the CoH	75% or better	10,898	86.4% within 10m	84.7	84.8
CTAS 3 (urgent care) i.e. mild asthma	Paramedic Response 15 mins or less Set by the CoH	75% or better	15,594	92.5% within 15m	90.9	91.2
CTAS 4 (less urgent care) i.e. ear ache	Paramedic Response 20 mins or less Set by the CoH	75% or better	6,697	97.2% within 20m	96.3	95.9
CTAS 5 (non urgent care) i.e. sore throat	Paramedic Response 25 mins or less Set by the CoH	75% or better	1,147	98.4% within 25m	98.8	98.7

Canadian Triage Acuity Scale (CTAS) National Guidelines

The Canadian Triage and Acuity Scale (CTAS) is one method for grouping patients according to the severity of their condition and is compromised of the following categories:

CTAS I: severely ill, requires resuscitation
CTAS II: requires emergent care and rapid medical intervention
CTAS III: requires urgent care
CTAS IV: requires less-urgent care
CTAS V: requires non-urgent care

(See figure 1 for further details.)

Source: http://www.cihi.ca/cihiweb/dispPage.jsp?cw_page=media_14sep2005_e

Figure 1

- CTAS I: requires resuscitation and includes conditions that are threats to life or imminent risk of deterioration, requiring immediate aggressive interventions (for example, arrest, major trauma or shock states).
- CTAS II: requires emergent care and includes conditions that are a potential threat to life or limb function, requiring rapid medical intervention or delegated acts (for example, head injury, chest pain or internal bleeding).
- CTAS III: requires urgent care and includes conditions that could potentially progress to a serious problem requiring emergency intervention, such as mild to moderate asthma, moderate trauma or vomiting and diarrhea in patients younger than 2 years.
- CTAS IV: requires less-urgent care and includes conditions related to patient age, distress or potential for deterioration or complications that would benefit from intervention, such as urinary symptoms, mild abdominal pain or earache.
- CTAS V: requires non-urgent care and includes conditions in which investigations or interventions could be delayed or referred to other areas of the hospital or health care system, such as sore throat, menses, conditions related to chronic problems or psychiatric complaints with no suicidal ideation or attempts.

Source:
http://www.cihi.ca/cihiweb/en/media_14sep2005_fig1_e.html

National Guidelines for the target time to be seen by a physician based on CTAS

CTAS Level 1 - Patients need to be seen by a physician immediately 98% of the time.
CTAS Level 2 - Patients need to be seen by a physician within 15 minutes 95% of the time.
CTAS Level 3 - Patients need to be seen by a physician within 30 minutes 90% of the time.
CTAS Level 4 - Patients need to be seen by a physician within 60 minutes 85% of the time.
CTAS Level 5 - Patients need to be seen by a physician within 120 minutes 80 % of the time.

Source:
www.calgaryhealthregion.ca/.../Admission_over-capacity_AppendixA.pdf

Municipal Medical Advisor Advice Regarding Response Time Targets

The new Land Ambulance Response Time Standards utilize the Canadian Triage Acuity Scale (CTAS) to establish the priorities for EMS patients *("Implementation Guidelines for The Canadian Emergency Department Triage & Acuity Scale (CTAS)", CTAS16.DOC December 16, 1998).* The CTAS levels were originally developed in order to rationalize and standardize priorities for emergency department patient treatment. The recommended reaction times were largely based on what most of us would want for family members, and the need for timely intervention to improve outcome (i.e. defibrillation for cardiac arrest, bronchodilators for acute severe asthma). The original CTAS guidelines state: "There is a need for more research on the effect time delays have on patient outcomes." The CTAS times are still largely based on the 'best medical advice' as the research continues. The following highlights the 'best medical advice' for each category supported by human physiologic data. Other than sudden cardiac arrest, there are few, if any, studies that validate the amount of time a patient can safely wait to be treated (related studies are available on request).

Sudden Cardiac Arrest patients (no pulse and no breathing) are patients who will die without prompt intervention. They require CPR and defibrillation (shocking the heart) as soon as possible which can be safely performed by lay rescuer or the professional responder. After 10 minutes of cardiac arrest without treatment, the chance of survival is limited. The time to defibrillation can be extended with early CPR. Evidence from the OPALS study, and from many related studies over the past 20 years, confirms the benefit of a fast response time.

CTAS I patients (i.e. respiratory arrest, unconscious or severe allergic reaction) are unstable and frequently deteriorate if they do not receive prompt and continuous care to support the bodies physiologic demands that are imperative to live. For example in respiratory severe distress although the relationship between time and outcome has not been studied, it can be deduced using physiologic data. If a person does not receive sufficient oxygen for 1 to 2 minutes, they will become unconscious and if this continues, it may result in cardiac arrest. The timeliness of intervening will vary based on factors such as pre-existing health status, severity of oxygen deprivation, etc. The response time target for CTAS 1 patients should be as prompt as can be managed with a paramedic response that has the capacity to effectively manage a range of conditions (i.e. manage airway - King Airway; breathing - suction, inhaler medication, etc.; circulation - epinephrine injection for allergic reactions).

CTAS II patients (i.e. chest pain, stroke, asthma) are sick or injured and potentially unstable, but do not appear to be worsening. For CTAS II patients there is no evidence to validate that the outcome will be affected by a response time difference of multiple minutes, however, without prompt and appropriate care their condition may worsen. These patients benefit from prompt attention by paramedics equipped to address their primary symptoms. In many of these patients the time of greater importance will be the interval to get the patient to definitive hospital care and this is more typically considered in increments of hours vs. minutes.

CTAS III, IV or V patients (i.e. abdominal pain, minor laceration) require care but outcome will not be affected by a prolonged response time. These patients may have pain or other issues that can benefit from paramedic intervention. The time to treatment of those issues may affect comfort levels.