CITY OF HAMILTON

HAMILTON EMERGENCY SERVICES

Emergency Medical Services

TO: Chair and Members  
Emergency & Community Services Committee  
WARD(S) AFFECTED: CITY WIDE

COMMITTEE DATE: June 8, 2011

SUBJECT/REPORT NO: 
Response Time Reporting (HES11008) (City Wide)

SUBMITTED BY: 
Brent Browett, Director  
Emergency Medical Services  
Hamilton Emergency Services

PREPARED BY: 
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Wesley Loy (905) 546-2424 x7759

SIGNATURE:

RECOMMENDATION

(a) That the City of Hamilton adopt emergency medical response time targets for the calendar year 2011 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 B to Report HES11008).

(b) That the emergency medical response times targets noted in Appendix A to Report HES11008 respecting Response Time Performance Plan be approved.

EXECUTIVE SUMMARY

At the request of the Association of Municipalities of Ontario (AMO) the provincial government made changes to Ambulance Response Time Standards that go into effect October 1, 2011. The changes will; modernize the performance targets; establish equity in the measurements for Upper Tier Municipalities (UTM), and provide the UTMs with some new flexibility in determining resource allocations. In addition the UTMs will be
able to use response times from Public Access Defibrillation (PAD) for reporting purposes.

The emergency medical calls that are covered by the new standards are summarized as follows:

**Sudden Cardiac Arrest (SCA):** person has no pulse and is not breathing  
**CTAS I:** severely ill, requires resuscitation (i.e. major shock)  
**CTAS II:** requires emergent care and rapid medical intervention (i.e. head injury)  
**CTAS III:** requires urgent care (i.e. mild asthma)  
**CTAS IV:** requires less-urgent care (i.e. earache)  
**CTAS V:** requires non-urgent care (i.e. sore throat)  
(For CTAS details see Appendix C attached to Report HES11008).

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**

<table>
<thead>
<tr>
<th>Interval 1</th>
<th>Interval 2</th>
<th>Interval 3</th>
<th>Interval 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPS Control</td>
<td>MOHLTC Control</td>
<td>HES EMS Control</td>
<td></td>
</tr>
<tr>
<td>911 call taker answers and connects the citizen to the MOHLTC ACO*</td>
<td>MOHLTC ACO answers the citizen and notifies the paramedic</td>
<td>The paramedic receives the call and goes mobile</td>
<td>The paramedic arrives on scene</td>
</tr>
</tbody>
</table>

*Ministry of Health Long Term Care, Ambulance Communication Officer

With the past standard each 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).

With the new standard each UTM will be compliant by annually submitting a Response Time Performance Plan (RTPP) to the Ministry of Health Long Term Care (MOHLTC) by October 1 of each year. The RTPP must identify the UTM’s performance expectations for the year forward within each category of the Canadian Triage Acuity Scale (CTAS).

In the new standard for the critical patient categories (SCA and other CTAS 1) the target time has been set by the MOHLTC for Interval 3 and 4 and it is the same for all UTMs.
In the other CTAS categories the UTMs are required to establish their own time targets, and in all CTAS categories the UTM will set their own targets for the frequency (expressed as a %) that they expect to meet the time target. After the year has passed the UTM will report the performance they achieved to the MOHLTC.

For the October 2011 RTPP submission to the MOHLTC regarding the 2012 performance, staff is recommending the noted time targets in Column 1, 2 and 3 of Appendix A to Report HES11008 based on past performance and assuming the demand for Emergency Medical Services (EMS) is similar to 2011. To establish targets for CTAS 2 to 5 staff considered; the practices of other jurisdictions; the CTAS guidelines; expert medical advice; and, past performance.

Alternatives for Consideration – See Page 5

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 2011 response time targets to the MOHLTC.

HISTORICAL BACKGROUND (Chronology of events)

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. These changes will be fully in effect by 2012 with reporting requirements starting October 1, 2011.

Specifically the Upper Tier Municipality (UTM) will send its Response Time Performance Plan (RTPP) to the Ministry of Health and Long Term Care (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 HES11008 written by the Hamilton Emergency Services (HES) EMS municipal medical advisor.

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 and in the less acute categories the UTM will establish their own target times and their own percentage targets. 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.

With the new standard the response time will 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

City Manager’s Office. The advice was to proceed with the report forthwith to allow adequate time to consider the same.

Corporate Services Department, Treasury Services Division. The advice was neutral given that submitting the RTPP it is not expected to have any financial impacts.

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

Corporate Services, Legal Division. The advice was that the recommended targets should be at least similar to that of what is currently achieved.
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).

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”.

Vision: To be the best place in Canada to raise a child, promote innovation, engage citizens and provide diverse economic opportunities.

Values: Honesty, Accountability, Innovation, Leadership, Respect, Excellence, Teamwork
CORPORATE STRATEGIC PLAN  (Linkage to Desired End Results)


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
• Effective and sustainable Growth Management
• 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 HES11008 – Recommended Response Time Targets
Appendix B to Report HES11008 – Ambulance Act
Appendix C to Report HES11008 – Canadian Triage and Acuity Scale (CTAS) National Guidelines
Appendix D to Report HES11008 – Overview of Medical Evidence
### Recommended Response Time Targets

<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
<th>2010 Results</th>
<th>2010 No. of calls</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type of Call</strong></td>
<td><strong>2012 Response Time Targets (from EMS notified of the call to arrival at site)</strong></td>
<td><strong>Recommended 2012 City of Hamilton Benchmark %</strong></td>
<td>% of Cases the Proposed Target Time was Achieved</td>
<td><strong>No. of calls</strong></td>
</tr>
<tr>
<td>Sudden Cardiac Arrest (SCA) i.e. not breathing no pulse</td>
<td>Defibrillator Response Six (6) minutes or less Set by the MOHLTC</td>
<td>65%</td>
<td>65.9 % within 6m</td>
<td>225</td>
</tr>
<tr>
<td>CTAS* 1 (other than SCA) i.e. major shock</td>
<td>Paramedic Response 8 mins or less Set by the MOHLTC</td>
<td>75% or better</td>
<td>88.3% within 8m</td>
<td>539</td>
</tr>
<tr>
<td>CTAS 2 (emergent care) i.e. chest pain</td>
<td>Paramedic Response 10 mins or less Set by the CoH</td>
<td>75% or better</td>
<td>86.4% within 10m</td>
<td>10,898</td>
</tr>
<tr>
<td>CTAS 3 (urgent care) i.e. mild asthma</td>
<td>Paramedic Response 15 mins or less Set by the CoH</td>
<td>75% or better</td>
<td>92.5% within 15m</td>
<td>15,594</td>
</tr>
<tr>
<td>CTAS 4 (less urgent care) i.e. ear ache</td>
<td>Paramedic Response 30 mins or less Set by the CoH</td>
<td>75% or better</td>
<td>99.7% within 30m</td>
<td>6,697</td>
</tr>
<tr>
<td>CTAS 5 (non urgent care) i.e. sore throat</td>
<td>Paramedic Response 60 mins or less Set by the CoH</td>
<td>75% or better</td>
<td>99.7% within 60m</td>
<td>1,147</td>
</tr>
</tbody>
</table>
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
The Canadian Triage and Acuity Scale (CTAS) is one method for grouping patients according to the severity of their condition.

**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.)


**Figure 1**

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

- **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](http://www.cihi.ca/cihiweb/en/media_14sep2005_fig1_e.html)

**CANADIAN TRIAGE AND ACUITY SCALE (CTAS) NATIONAL GUIDELINES**

**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](http://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.