



INFORMATION REPORT

TO: Chair and Members Emergency & Community Services Committee	WARD(S) AFFECTED: CITY WIDE
COMMITTEE DATE: September 21, 2011	
SUBJECT/REPORT NO: Code Zero - EMS Monthly Report - January 1, 2011 to July 31, 2011 (HES11013) (City Wide)	
SUBMITTED BY: Brent Browett Director, Emergency Medical Services Hamilton Emergency Services	PREPARED BY: Brent Browett (905) 546-2424 x7741
SIGNATURE:	

Council Direction:

On April 23, 2008, Council approved Item 6(h) of the Emergency & Community Services Committee Report 08-006 (HES08006 – Resource Limitations and Hospital Emergency Department Off-Loading), directing Emergency Medical Services to provide regular reports.

Information:

This report updates performance to July 31, 2011.

Executive Summary (see Table 1)

To July 31, 2011 year-to-date as noted in Table 1 the following **demands** were experienced;

- An increase of ~8 minutes in the average call duration (1 hour 37 minutes vs. 1 hour 29 minutes in 2010) with the additional time spent linked to the hospital interval.
- An increase in the number of emergency calls per day; 191 vs. 184 in 2010.

To July 31, 2011 year-to-date as noted in Table 1 the following **performance** was realized;

- The paramedic emergency response time was 10 minutes 44 seconds or less in 9 of 10 emergency calls (vs. 10 minutes 15 seconds in 2010).
- Average paramedic emergency response time increased to 6 minutes 44 seconds (vs. 6 minutes 24 seconds in 2010).

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- 123 Code Zero Ambulance Events YTD or 1 every 1.7 days (vs. 1 every 3.9 days 2010).

Table 1: Summary Data 2007 to January to July 2011

	2007	2008	2009	2010	2011 YTD
Frequency of Paramedic Calls					
Average number calls per day	185	172	174	184	191
Calls Dispatch Emergency or Urgent Request (i.e. Unconscious or Fracture Arm)					
% of Total Calls	93%	98%	98%	98%	99%
Paramedic Time in the Hospital Emergency Department for Transfer of Care					
Average elapsed time	43 min 50 sec	53 min 7 sec	51 min 20 sec	52 min 13 sec	60 min 30 sec
Code Zero Ambulance Event (CZAE) – One or less ambulance(s) available					
No. of CZAE	44	66	82	94	123 (to July 31)
Average No. of Paramedic ERVs available during CZAE	2	5	7	6	7
Average No. of Ambulances in hospital during a CZAE	4	5	5	6	7
Paramedic Emergency Response – First Vehicle – Provincial Target 10 min. 3 sec.					
90 th percentile time city-wide (9 of 10 responses)	11 min 49 sec or LESS	10 min 42 sec or LESS	10 min 17 sec or LESS	10 min 15 sec or LESS	10 min 44 sec or LESS
Average time city-wide	6 min 44 sec	6 min 20 sec	6 min 27 sec	6 min 25 sec	6 min 44 sec
First Ambulance Transport 9 out of 10 calls					
90 th percentile time city-wide (9 of 10 responses)	11 min 49 sec	11 min 37 sec	11 min 25 sec	11 min 54 sec	12 min 29 sec
Paramedic Forced Overtime					
Average Hours per Day	15	18	22	21	23
Paramedic Missed Meal Breaks					
Average Missed per Day	NA	23	22	27	39

See Appendices A, B, and C attached to Report HES11013 for detailed results.

Note: The primary data source is the Ministry of Health and Long-Term Care (MOHLTC). The MOHLTC continuously update the fields and there may be adjustments in recent months.

Summary of Changes in Demands and Impacts

The number of ambulance calls and the call duration are two leading factors that determine the consumption of paramedic unit hours and the remaining capacity to respond to medical emergencies to maintain response time performance. By May 2008 the Paramedic Service was achieving continuous response time improvements coinciding with the full implementation of 2007 Council-endorsed enhancements. The performance continued to improve despite the increased paramedic time in the hospital and an increase in call volume. In the first seven months of 2011 there has been an increase in the EMS time in the hospital; the emergency

response times to arrive at the call and to have an ambulance on scene for transport; extended paramedic shifts, and paramedic missed meal breaks (see Table 1 and Appendix C).

Detailed Review

1) Code Zero Ambulance Events

The term “Code Zero Ambulance” Events is a term used to identify an interval when one (1) or less transport ambulances is available to respond to an emergency. By July 31, 2011 there were 123 Code Zero Ambulance Events or one (1) every 1.7 days.

During the same period the average time that the paramedics spent in the hospital emergency department (ED) to transfer care was 61 minutes (vs. 52 minutes in 2010; 53 minutes in 2008; 44 minutes in 2007, and, 33 minutes in 2000). When the CZAE have occurred on average seven (7) Hamilton ambulances were at the hospital ED. To minimize this impact the Hamilton EMS draws upon six (6) Paramedic Response Units (PRU) and three (3) supervisors to provide a high level of care first response. On average up to seven (7) of the PRUs have been available to continue to respond while the service recovers ambulance transport capacity.

During the same period the Paramedic Service has made the following observations:

- increased paramedics missed meal breaks
- increased forced overtime as the paramedic waits to transfer care at shift end
- increased initial paramedic emergency response times and ambulance transport times

2) Initial Paramedic Response Time and Ambulance Transport

From January to July 31, 2011 the response time for the first paramedic to arrive on scene across the City was 10 minutes 44 seconds or less for 9 of 10 patients (vs. 2010; 10 minutes 15 seconds or less).

Another important performance metric is the time to transport the patient to the hospital. The time for a transport ambulance to arrive on scene year-to-date is 12 minutes 29 seconds in 9 out of 10 calls (vs. 11 minutes 54 seconds in 2010), with a range across the six (6) communities from a low of 11 minutes 12 seconds to a high 19 minutes 33 seconds in 9 out of 10 calls.

Conclusion

In the past 11 years, EMS has had ongoing challenges to maintain the performance. In 2000, the Hamilton Paramedics completed 158 calls per day; 76% of the calls were dispatched as emergency or urgent; the average hospital time was 31 minutes; the response time was 10 minutes 12 seconds or less in 9 of 10 cases. Since then the Paramedic Service has observed an increase in the time that the paramedics spend in the hospital emergency department and increases in call volume. Previously ~24% of EMS calls were categorized as deferrable; today, 99% of the calls are dispatched as an urgent or an emergency event. The paramedics and nurses continue to make commendable efforts to maintain public safety supported by their management teams and the community partner agencies including the MOHLTC; CACC (ambulance dispatch), local hospitals; LHINS; Community Care Access Centre; and the Police and Fire Services.

Appendix A
Appendix B
Appendix C

HAMILTON - EMERGENCY MEDICAL SERVICES

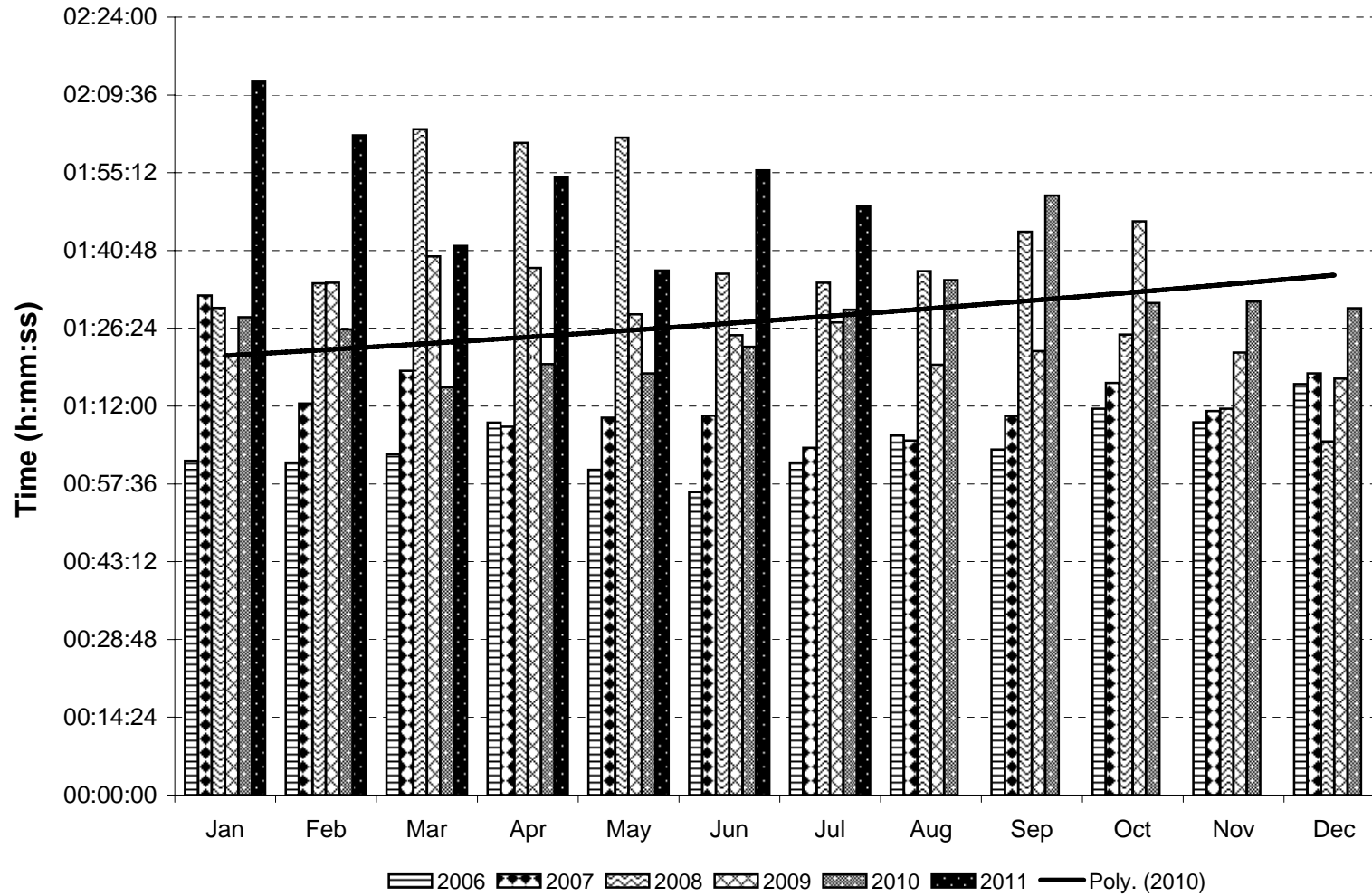
Code Zero Ambulance Events and EMS-Hospital Emergency Department Time

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Code Zero Ambulance Events - One or less Ambulances Available for Emergency Response in Hamilton													
2006	Data tracking began in May			→	1	0	0	3	1	3	0	5	13
2007	10	5	7	0	2	4	4	3	1	0	0	8	44
2008	0	8	10	3	17	5	12	16	6	6	8	4	95
2009	1	10	12	13	6	7	9	7	2	8	5	2	82
2010	6	9	9	3	7	7	12	6	10	4	11	10	94
2011	23	16	16	13	7	32	16						123
EMS Hospital ED Time - Arrive Hospital ED to Ambulance Clear Hospital ED (90th percentile)													
2006	01:01:53	01:01:33	01:03:06	01:08:58	01:00:12	00:56:04	01:01:34	01:06:34	01:03:57	01:11:32	01:09:01	01:16:03	
2007	01:32:30	01:12:30	01:18:31	01:08:11	01:09:52	01:10:13	01:04:16	01:05:36	01:10:11	01:16:17	01:11:06	01:18:03	
2008	01:30:10	01:34:43	02:03:16	02:00:45	02:01:43	01:36:29	01:34:51	01:36:59	01:44:15	01:25:15	01:11:32	01:05:29	
2009	01:21:20	01:34:51	01:39:42	01:37:33	01:28:59	01:25:08	01:27:29	01:19:41	01:22:10	01:46:13	01:21:54	01:17:05	
2010	01:28:28	01:26:14	01:15:30	01:19:48	01:18:03	01:23:01	01:29:52	01:35:20	01:50:57	01:31:04	01:31:21	01:30:07	
2011	02:12:12	02:02:09	01:41:39	01:54:21	01:37:04	01:55:38	01:48:58						

Source Data: MOHLTC ADDAS for 90th Percentile

Updated : 31 Aug 2011

Hamilton Emergency Medical Services 2006-2011 EMS Hospital Time in Emergency Department (90th Percentile)



Data Source: ADDAS

**HAMILTON EMERGENCY MEDICAL SERVICES
GENERAL STATISTICS**

	2008	2009	2010	2011	Jan	Feb	Mar	Apr	May	Jun	Jul
EMS CALL VOLUME											
EMS Calls Dispatched Priorities											
Non-Emergency Calls(1 & 2's)	1,471	1,422	1,343	409	69	44	62	74	51	50	59
3 - Urgent	13,164	16,502	19,000	10,822	1,624	1,465	1,533	1,376	1,483	1,608	1,733
4 - Life Threatening	48,160	45,739	46,834	29,195	4,339	3,817	4,248	3,919	4,127	4,211	4,534
Emergency Calls Priority 3 & 4's	61,324	62,241	65,834	40,017	5,963	5,282	5,781	5,295	5,610	5,819	6,267
TOTAL CALLS (1, 2, 3 & 4)	62,795	63,663	67,177	40,426	6,032	5,326	5,843	5,369	5,661	5,869	6,326
EMS Patients Transported with High Return Priority (Criteria: PickupUpperTier=38)											
Transported Life Threatening (Priority 4)	3,854	3,900	3,862	2,236	277	300	341	325	324	306	363
EMS RESPONSE TIMES											
CACC Response (MOHLTC Dispatch) Provincial Standard is 120 seconds or less for 90th percentile											
Seconds (T ₀ _TimeZero-T ₂ _Notified)	179	189	181	188	185	196	186	184	181	191	192
HES EMS Response - Provincial Standard is 10:03 or less for all of Hamilton 90th percentile (T ₂ _Notified-T ₄ _ArriveScene) First Unit											
City of Hamilton (amal.)	10:42	10:17	10:15	10:44	10:55	11:27	10:39	10:19	10:57	10:47	10:29
HES EMS Response Time - Average (T₂_Notified-T₄_ArriveScene) First Arrived Unit - ERV/Transport											
City of Hamilton (amal.)	06:20	06:27	06:25	06:44	06:43	07:11	06:37	06:32	06:41	06:45	06:36
- Ancaster	08:23	08:03	08:00	08:40	08:38	09:18	08:47	08:33	08:12	08:23	08:20
- Dundas	05:56	07:30	06:12	06:41	06:32	06:58	06:16	06:47	06:05	07:08	06:45
- Flamborough	10:53	10:30	10:31	10:49	10:49	11:43	11:32	10:31	10:36	09:57	09:58
- Glanbrook	09:46	09:18	09:34	09:44	09:44	10:01	09:50	09:12	10:07	10:03	08:58
- Hamilton	05:47	05:54	05:57	06:17	06:17	06:41	06:09	06:06	06:14	06:19	06:09
- Stoney Creek	07:29	07:15	06:59	07:02	07:01	07:17	06:47	07:10	07:34	07:07	07:03

**HAMILTON EMERGENCY MEDICAL SERVICES
GENERAL STATISTICS**

	2008	2009	2010	2011	Jan	Feb	Mar	Apr	May	Jun	Jul
EMS CALL VOLUME											
OTHER EMS TIME STATISTICS											
Avg. Chute Time (Notified-Enroute)	01:11	00:54	00:56	00:56	00:56	00:59	00:57	00:57	00:57	00:53	00:54
Avg. Time-on-Task (Enroute-ClearDest.)	01:28:40	01:27:20	01:28:45	01:37:17	01:42:35	01:40:57	01:34:45	01:38:26	01:32:42	01:36:41	01:35:19
Avg. Scene Time (ArriveScene-DepartScene)	17:01	17:39	17:56	18:04	18:37	18:30	18:39	17:48	17:56	17:15	17:42
EMS-Hospital Off-load/Transfer of Care Time (All Return Codes)											
Transfer of Care Monitor - All Calls											
Average (Arrive-End of ToC)	00:49:35	00:53:55	00:53:49	01:05:54	01:08:55	01:08:48	01:01:37	01:07:47	01:01:44	01:08:38	01:04:34
EMS-Hospital ED Time											
90 th percentile	01:35:14	01:27:31	01:27:53	01:52:18	02:12:12	02:02:09	01:41:39	01:54:21	01:37:04	01:55:38	01:48:58
Average (Arr_Dest-ClrDest)	00:53:07	00:51:20	00:52:13	01:00:30	01:05:22	01:02:59	00:56:51	01:01:52	00:56:02	01:01:09	00:59:26
EMS OPERATIONS											
Hours spent in ED (Emerg. calls)	29,338	29,109	30,473	20,800	3,345	2,872	2,937	2,865	2,751	2,956	3,074
Hours spent on Calls (Emerg. calls)	50,339	50,764	53,344	34,177	5,375	4,702	4,917	4,632	4,637	4,827	5,087
% Task Time spent in ED	58%	57%	57%	61%	62%	61%	60%	62%	59%	61%	60%
Total street hrs (incl. overruns)	350,657	367,315	373,782	213,110	31,657.9	27,790.3	30,707.7	30,443.1	31,451.8	29,948.4	31,110.6
Street Hours/Day	961	1,006	1,024	1,005	1,021	993	991	1,015	1,015	998	1,037
All Patients transported, all return priorities	40,426	41,371	42,031	24,213	3,615	3,196	3,577	3,266	3,409	3,466	3,684

Source: ADDAS Data Warehouse, Transfer of Care, EMS Scheduling.

Updated: 31 Aug 2011

Note: Data is subject to change as updates are received from the MOHLTC.