



Region of Waterloo * Paramedic Services
PERFORMANCE MEASUREMENT

Performance Measurement Report (mid-year)

For the Period of January – June 2017

Produced on July 21st, 2017



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Summary

A. Volume and Service Level Indicators

Indicator	Mid-year 2016	Mid-year 2017	Per cent change
Total Number of Vehicle Responses	23,914	25,444	+6.4%
Rate of vehicle responses per 1,000 population*	78.8	87.5	+11.0%
Unit Utilization	39.7%	39.0%	-1.7%

C. Efficiency Indicators

Indicator	Mid-year 2016	Mid-year 2017	Per cent change
Offload Delay*	45.5 days	106.0 days	+133.1%
Code Yellow Time	12.1%	12.5%	+3.2%
Code Red Time	0.73%	0.73%	0.0%

B. Compliance and Quality Assurance Indicators

Indicator	Mid-year 2016	Mid-year 2017	Per cent change
Paramedic Services Response Time to Emergency Calls	9min 43sec	9min 30sec	-2.2%
Response Time Performance Plan Compliance Resuscitation calls (CTAS1)	71.2%	72.4%	+1.7%
Response Time Performance Plan Compliance Emergent calls (CTAS2)	78.4%	80.7%	+2.9%

D. Service and Quality Impact Indicators

Indicator	Mid-year 2016	Mid-year 2017	Per cent change
Stroke Patient to Stroke Facility*	86.6%	89.3%	+3.0%
Return of Spontaneous Circulation*	13.4%	11.0%	-17.4%
Heart attack (STEMI) protocol*	74.6%	77.7%	+4.0%

*A similar indicator is captured, with some variation in measurement units, within a portion of the MBN Canada (formerly OMBI) reporting process.



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A. Volume and Service Level Indicators

Definition of Indicator Group

Quantity type indicators that show values related to work intake and work breakdown (how much did we do?).

Summary of Results

For the first half of 2017, Paramedic Services responded to 22,045 calls resulting in 25,444 vehicles responses, up 6.4 per cent from the same time period in 2016. Currently more than 51,000 vehicles responses are forecasted for year-end 2017. The rate of vehicle responses, 87.5 for every 1,000 people, is up 11.0 per cent from 2016 (78.8 per 1,000) and, influenced by the aging population, is growing 3.5 times faster than the rate of population growth. Unit utilization averaged 39.0 per cent for the last 12 months with a range of 27.3 per cent at 5AM to 48.3 per cent at 9PM. The Paramedic Services master plan established a benchmark of target of 35 per cent; above this threshold it becomes difficult to ensure an ambulance will be available for the next call in a reasonable time. Monitoring unit utilization allows for proactive planning to ensure community needs are met in a reasonable time while using a sustainable level of deployed staff. Note, the effects of three additional 12-hour ambulances added in July of 2017 will not be reflected until future reports.

Indicator Name	Indicator Definition	Mid-year 2016	Mid-year 2017	Per cent change
Number of Vehicle Responses	A measure of service demand. The total number of ambulances or emergency response units (vehicles) that responded to calls dispatched to Region of Waterloo Paramedic Services inside or outside of Waterloo Region. More than one vehicle may respond to a single call; for example, multiple casualty incidents.	23,914	25,444	+6.4%
Rate of Vehicle Responses per 1,000 population	A measure of service demand. The rate of vehicle responses per 1,000 population to calls dispatched to Region of Waterloo Paramedic Services inside or outside of Waterloo Region. More than one vehicle may respond to a single call; for example, multiple casualty incidents.	78.8	87.5	+11.0%
Unit Utilization	Unit utilization measures the per cent of time that ambulances and emergency response units are actively engaged in responding to calls (codes 1 to 4) – as opposed to being deployed waiting for calls. Monitoring resource deployment through unit utilization helps ensure sufficient staffing to meet community needs. When unit utilization exceeds 35 per cent, it becomes difficult to ensure vehicles will be available for the next call within a reasonable time.	39.7%	39.0%	-1.7%



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Number and rate of vehicle responses per 1,000 population, by dispatch priority code and year

Region of Waterloo Paramedic Services, inside and outside of Waterloo Region, January 1st to June 30th, 2012-2017

Number of vehicle responses

Overall priority code	2012	2013	2014	2015	2016	2017	2012→2017
1 – Deferrable	422	310	289	81	65	50	
2 – Scheduled	86	86	79	57	66	39	
3 – Prompt	5,913	5,520	5,398	6,586	6,319	6,609	
4 – Urgent	13,537	13,919	14,606	15,748	17,464	18,746	
Rate per 1,000 (YTD)	72.2	71.2	72.3	78.8	82.0	87.5	
Annual change (%)	4.5%	-1.3%	1.6%	8.9%	4.1%	6.7%	
Total vehicle responses (YTD)	19,958	19,835	20,372	22,472	23,914	25,444	
Annual change (%)	5.7%	-0.6%	2.7%	10.3%	6.4%	6.4%	
Total vehicle responses (annual)	40,135	39,999	41,082	45,316	48,091	*51,310	
Annual change (%)	5.4%	-0.3%	2.7%	10.3%	6.1%	6.7%	

* Forecasted

Source: ADRS (July 21st, 2017)

■ Lowest value
 ■ Middle value(s)
 ■ Highest value



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Rate of vehicle responses per 1,000 population, by municipality and year

Region of Waterloo Paramedic Services, inside and outside of Waterloo Region, January 1st to June 30th, 2012-2017

Rate of vehicle responses per 1,000, by year, within Waterloo Region		Year-to-date		2017
		2012 → 2017	Min. - Max.	
Cities	Cambridge		71.1 - 96.0	96.0
	Kitchener		79.6 - 94.4	94.4
	Waterloo		52.1 - 67.5	67.5
	Cities total		70.9 - 87.8	87.8
Townships	North Dumfries		61.5 - 87.2	72.9
	Wellesley		32.4 - 49.2	39.5
	Wilmot		54.5 - 66.6	66.0
	Woolwich		63.9 - 79.9	79.9
	Townships total		57.5 - 69.0	67.8
Waterloo Region total			69.6 - 85.5	85.5
Number and proportion of total vehicle Responses outside Waterloo Region*		2012 → 2017	Min. - Max.	2017
Number of vehicle responses			399 - 597	597 vehicle responses
Proportion of total vehicle responses			1.8 - 2.4	2.3 per cent

*A population based rate of vehicle responses cannot be accurately calculated for calls outside of Waterloo Region because it is difficult to determine the size of the service population (denominator).

Source: ADRS (July 21st, 2017)



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Number and rate of vehicles responses per 1,000 population, by municipality and month

Region of Waterloo Paramedic Services, inside and outside of Waterloo Region, January 1st to June 30th, 2017

Rate of vehicle responses per 1,000, by month, within Waterloo Region		Jan → Dec	Year-to-date (YTD)	
			Rate per 1,000	Total calls
Cities	Cambridge		96.0	6,547
	Kitchener		94.4	11,456
	Waterloo		67.5	4,566
	Cities total		87.8	22,569
Townships	North Dumfries		72.9	362
	Wellesley		39.5	221
	Wilmot		66.0	693
	Woolwich		79.9	1,002
	Townships total		67.8	2,278
Waterloo Region total			85.5	24,847
Outside Waterloo Region total*				597
Waterloo Region Paramedic Services total*				25,444

* A population based rate of calls cannot be accurately calculated for calls outside of Waterloo Region because it is difficult to determine the size of the service population (denominator).

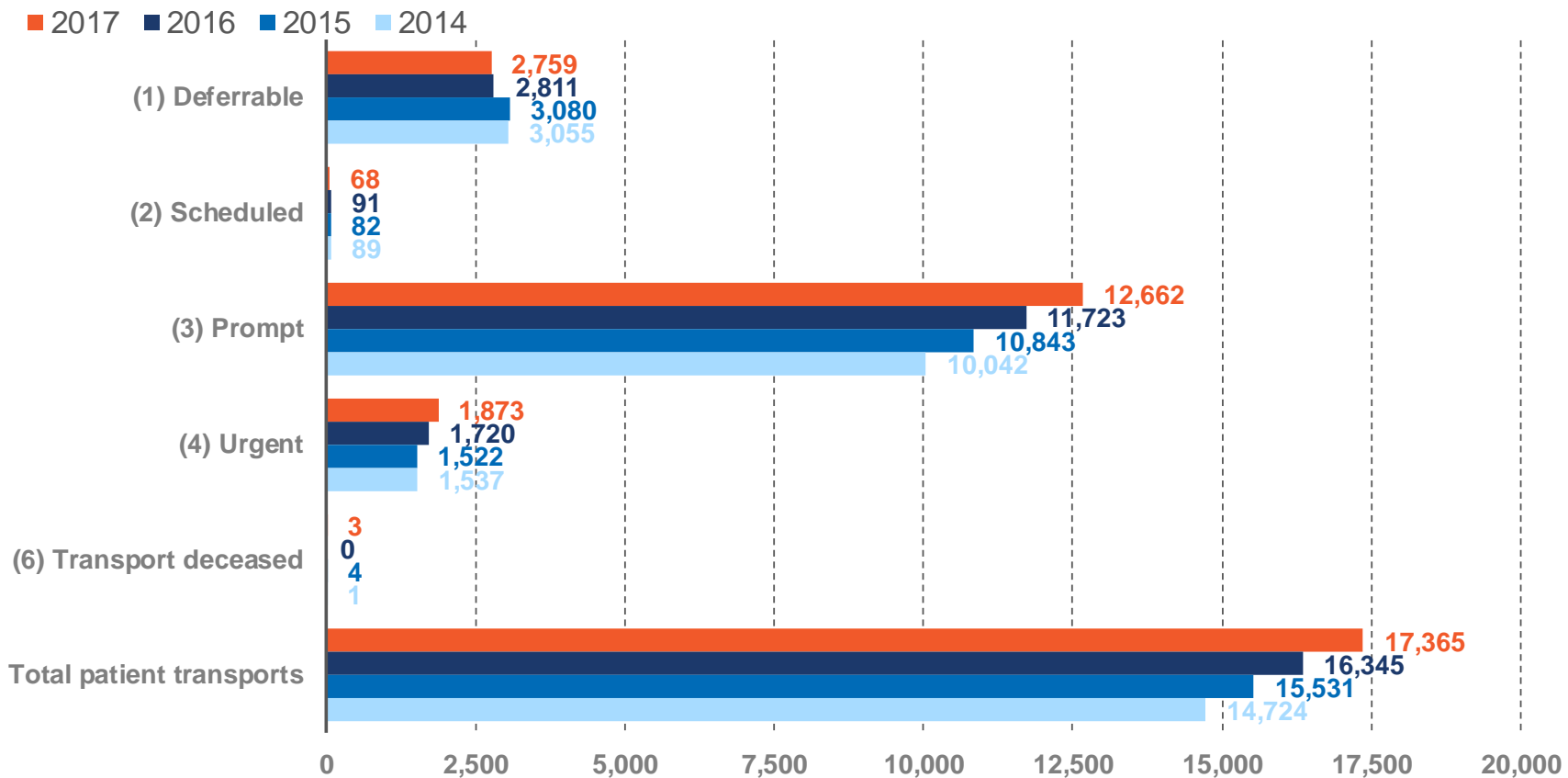
Source: ADRS (July 21st, 2017)



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Number of patient transports, by return priority code

Region of Waterloo Paramedic Services, inside and outside of Waterloo Region, January 1st to June 30th, 2015-2017



Source: TabletPCR (July 21st, 2017)



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Various measures of service provided by Region of Waterloo Paramedic Services, by year

Inside and outside of Waterloo Region, January 1st to June 30th, 2012-2017

Measure	2012	2013	2014	2015	2016	2017	2012 → 2017	Per cent change (2012-2017)
Number of unique calls (T1, code 1-4)	17,626	17,436	18,145	19,456	20,676	22,045		25.1
Number of vehicles dispatched (T2, code 1-4)	19,958	19,835	20,372	22,472	23,914	25,444		27.5
Number of vehicles arriving on scene (T4, code 1-4)	17,980	17,959	18,392	19,953	21,279	22,570		25.5
Number of vehicles transporting patients (T6, code 1-4)	13,226	13,559	14,265	15,189	16,089	16,955		28.2
Number of patients transported (T6, code 1-4)	13,370	13,723	14,392	15,350	16,257	17,139		28.2
Per cent of vehicles dispatched arriving on scene	90.1	90.5	90.3	88.8	89.0	88.7		-1.5
Per cent of vehicles arriving on scene transporting patients	73.6	75.5	77.6	76.1	75.6	75.1		2.1

Note that due to differences between the ADRS and TabletPCR data sources, there may be variance between similar indicators.

Source: ADRS (July 21st, 2017)

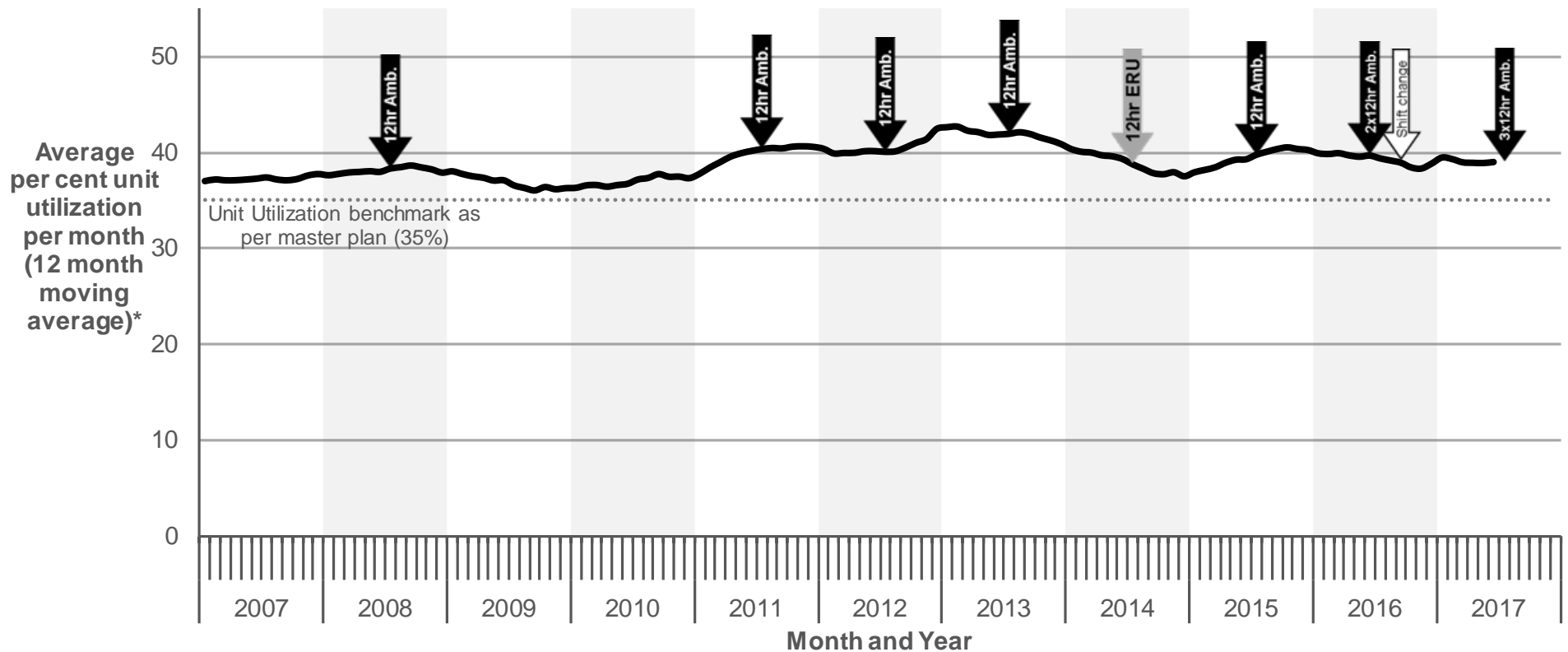
Lowest value
 Middle value(s)
 Highest value



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Moving 12 month average* Unit Utilization

Region of Waterloo Paramedic Services, January 1st, 2007 to June 30th, 2017



*On average, ambulances were in use 39 per cent of each month from July 2016 to June 2017, an improvement of 1.7 per cent from June 2016 when ambulances were in use an average of 40.1 per cent for the period of July 2015 and June 2016. **For unit utilization, a decreasing trend is considered positive, while an increasing trend is seen as a negative.**

Source: ADRS (July 21st, 2017)



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B. Compliance and Quality Assurance Indicators

Definition of Indicator Group

Indicators that monitor Paramedic Services' adherence to internal process, procedure, legislated mandates etc. (how well did we do it?).

Summary of Results

To the end of June 2017 the 80th percentile response time to emergency calls (code 4) within Waterloo Region was 9 minutes and 30 seconds, 2.2 per cent (13 seconds) faster than 2016. Response times improved, in part, due to the two ambulances added in July of 2016 and the adjusted shift start times in September of 2016, despite the unprecedented growth in vehicle responses late in 2016. Using an informal benchmark Paramedic Services monitors response times observed from urban, suburban, and rural perspectives as defined by call density. Response times vary according to population and road density. Drives times are longer in rural areas. Compliance to the 2017 response time performance plan improved for urgent call types and worsened for less urgent call types indicating that the most urgent calls are being given a more appropriate priority and are being attended to faster. Setting faster times for more urgent calls and progressively slower times for less urgent calls is a standard approach. Note, the effects of three additional 12-hour ambulances added in July of 2017 will not be reflected until future reports.

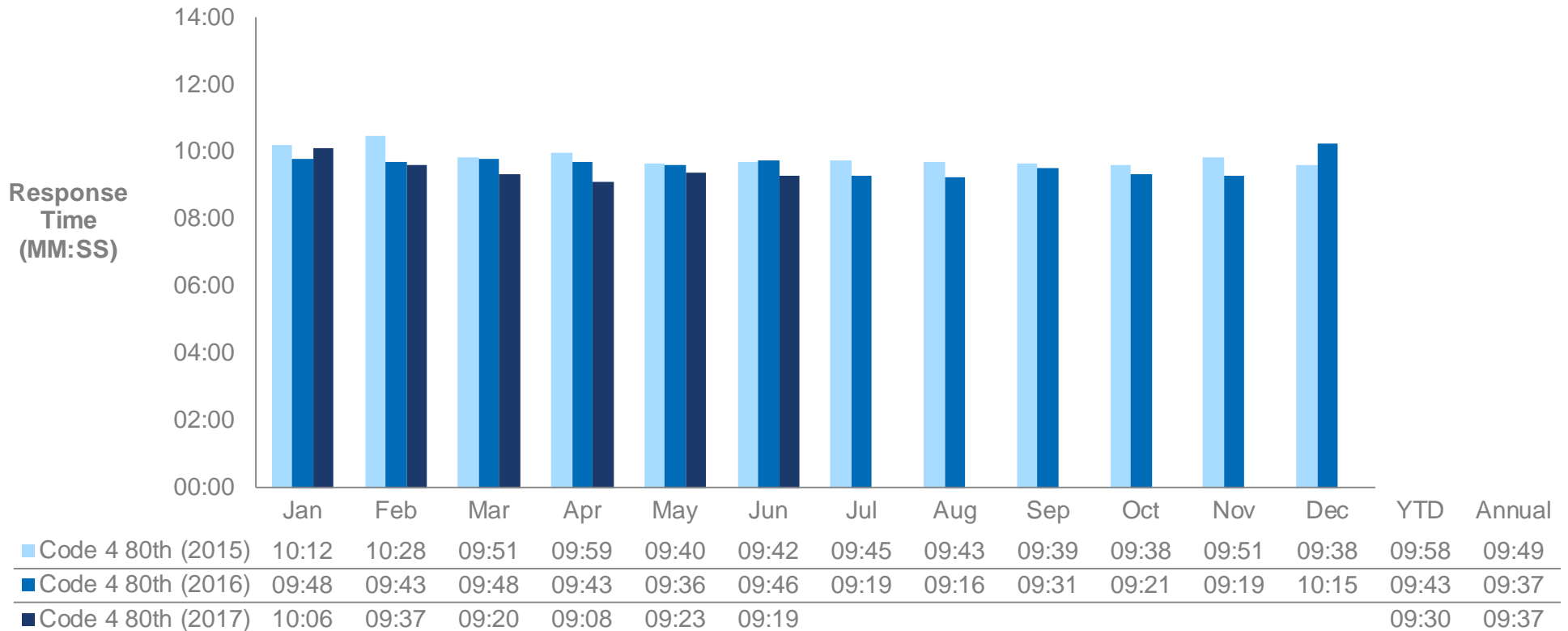
Indicator Name	Indicator Definition	Mid-year 2016	Mid-year 2017	Per cent change
Paramedic Services Response Time to Emergency Calls	A measurement of the Paramedic Services' ability to meet performance a summary performance indicator, response time to code 4 calls, 80 th percentile.	9min 43sec	9min 30sec	-2.2%
Response Time Performance Plan Compliance Resuscitation calls (CTAS1)	Resuscitation calls involve conditions that are, or may pose, an imminent threat to life or limb or risk of deterioration requiring immediate aggressive interventions; ideal physician assessment is immediate. The current target for resuscitation calls is a response time of 8 minutes or less 70 per cent of the time or better. A high proportion of compliance indicates that the most urgent calls are being attended to in the appropriate time frame.	71.2%	72.4%	+1.7%
Response Time Performance Plan Compliance Emergent calls (CTAS2)	Emergent calls involve conditions that potentially threaten to life, limb or function, requiring rapid medical interventions or delegated acts; ideal physician assessment is within 15 minutes. The current target for emergent calls is a response time of 10 minutes or less 80 per cent of the time or better.	78.4%	80.7%	+2.9%



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Response time to emergency calls (code 4), 80th percentile, by month

Any paramedic service, inside Waterloo Region, January 1st, 2015 to June 30th, 2017



Sources: ADRS (July 21st, 2017)

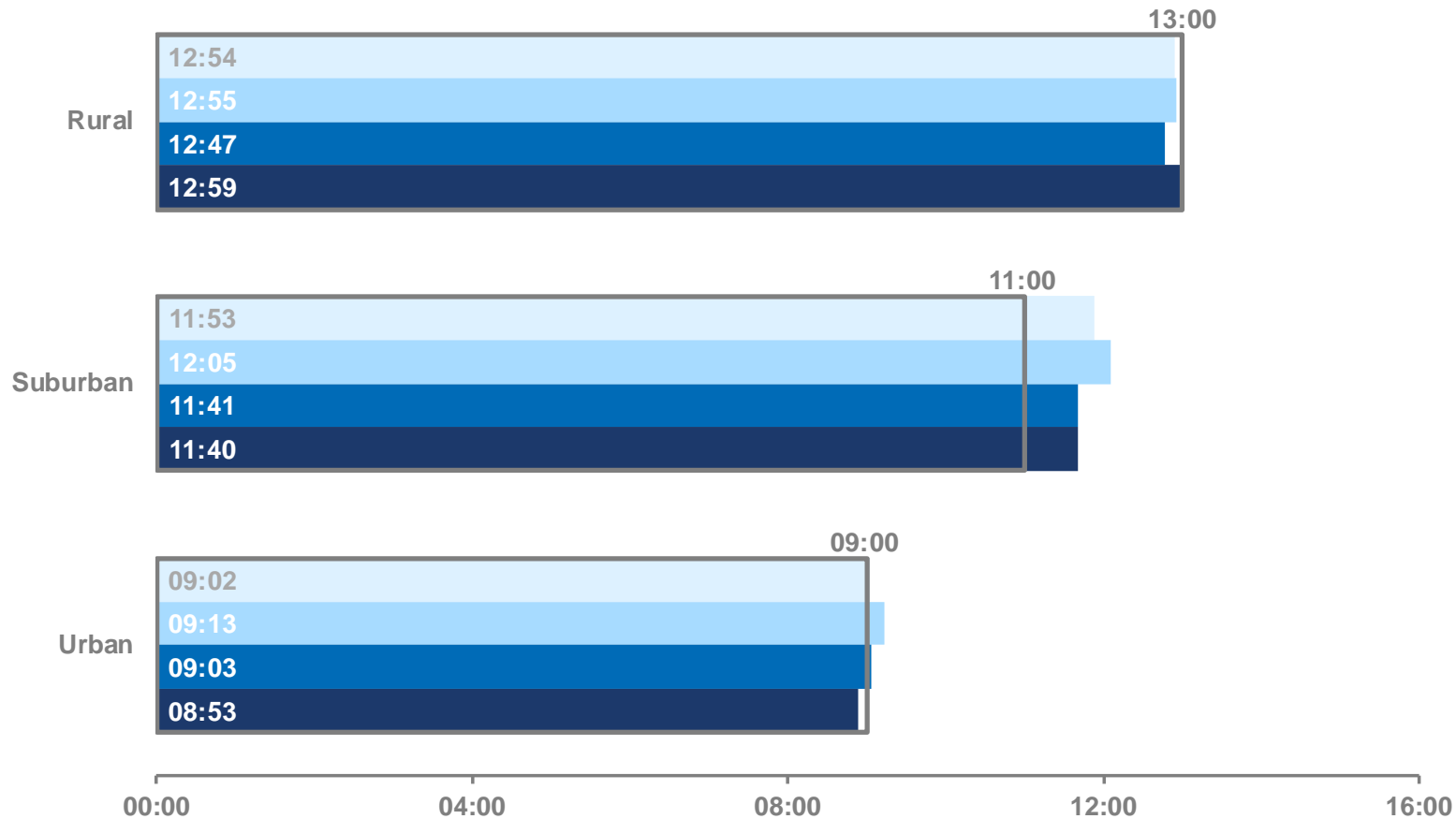


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Response time to emergency calls (code 4), 80th percentile, by vehicle response density

Any paramedic service, inside Waterloo Region, January 1st, 2014 to June 30th, 2017

2014 2015 2016 2017 Informal monitoring benchmark



Source: ADRS (July 21st, 2017)



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Compliance to 2016 response time performance plan, by Canadian Triage Acuity Score (CTAS)

Region of Waterloo Paramedic Services, inside or outside of Waterloo Region, January 1st to June 30th, 2016 and 2017

Type of call	Response Time Target Paramedic Services notified (T2) to arrive scene (T4)	Approved 2017 Region of Waterloo target	2016		2017	
			Per cent compliance	Percentile time (mm:ss)	Per cent compliance	Percentile time (mm:ss)
Sudden Cardiac Arrest	Defibrillator response in 6 minutes or less (set by MOHLTC)	50% or better (Paramedic Services only)	36%	06:58	38%	06:47
CTAS 1 (resuscitation)	Paramedic Services response in 8 minutes or less (set by MOHLTC)	70% or better	71%	07:50	72%	07:49
CTAS 2 (emergency)	Paramedic Services response in 10 minutes or less	80% or better	78%	10:15	81%	09:56
CTAS 3 (urgent)	Paramedic Services response in 11 minutes or less	80% or better	79%	11:13	80%	11:00
CTAS 4 (less urgent)	Paramedic Services response in 12 minutes or less	80% or better	81%	11:51	82%	11:39
CTAS 5 (non-urgent)	Paramedic Services response in 12 minutes or less	80% or better	76%	12:41	79%	12:18

Source: ADRS and TabletPCR (July 21st, 2017)



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C. Efficiency Indicators

Definition of Indicator Group

Indicators that outline how timely Paramedic Services is being performed by staff and offered to the Region (how well did we do it?).

Summary of Results

For the first half of 2017, the moving average for ambulance days lost to offload delay had increased 133.1 per cent compared to June 2016 resulting in the loss of 60 additional ambulance days relative to 2016. The large increase in offload delay observed to-date in 2017 can be attributed to increased paramedic service call volumes (e.g. January 2017 had 618 more vehicle responses than January 2016) and increased patient walk-in volumes as reported by the hospitals. In addition, funding for the Dedicated Offload Nurse Program from the Ministry of Health & Long-Term Care has not kept pace with the increases in patient volumes (i.e. has not increased and has marginally decreased). Paramedic Services continues to work with area Emergency Departments to realign hours of coverage to ensure maximum effect of the allocated funding. This means shifting hours to times of the year where more coverage is required and having less hours of coverage when the need may not be as great. Time spent in code yellow was up slightly in the first half of 2017 compared to the same time period in 2016 increasing from 12.1 per cent to 12.55 per cent; time spent in code red was unchanged relative to 2016 at 0.73 per cent. Note, the effects of three additional 12-hour ambulances added in July of 2017 will not be reflected until future reports.

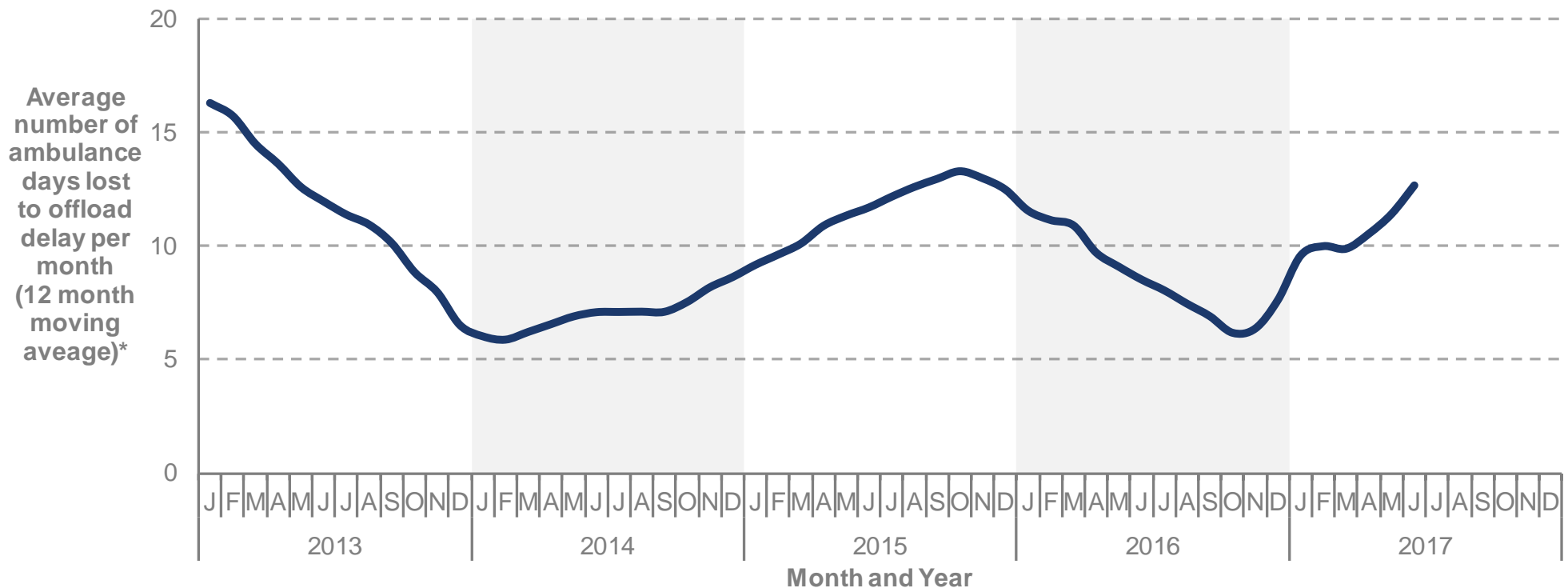
Indicator Name	Indicator Definition	Mid-year 2016	Mid-year 2017	Per cent change
Offload Delay Measurement	The amount of 24 hour ambulance days lost to offload delay over the course of a month.	45.5 days	106.0 days	+133.1%
Code Yellow Status	The percentage of time where Paramedic Services is in a Code Yellow Status for the month (\leq three vehicles available).	12.1%	12.5%	+3.2%
Code Red Status	The percentage of time where Paramedic Services is in a Code Red Status for the month (zero vehicles available).	0.73%	0.73%	0.0%



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12 month moving average number of ambulance days lost to offload delay, by month

Region of Waterloo Paramedic Services, inside and outside of Waterloo Region, January 1st, 2013 to June 30th, 2017



*On average, 12.7 days of offload delay were experienced each month from July 2016 to June 2017, a deterioration of 48.7 per cent from June of 2016, and 22.0 per cent worse since March 2017. **For offload delay, a decreasing trend is considered positive, while an increasing trend is seen as negative.**

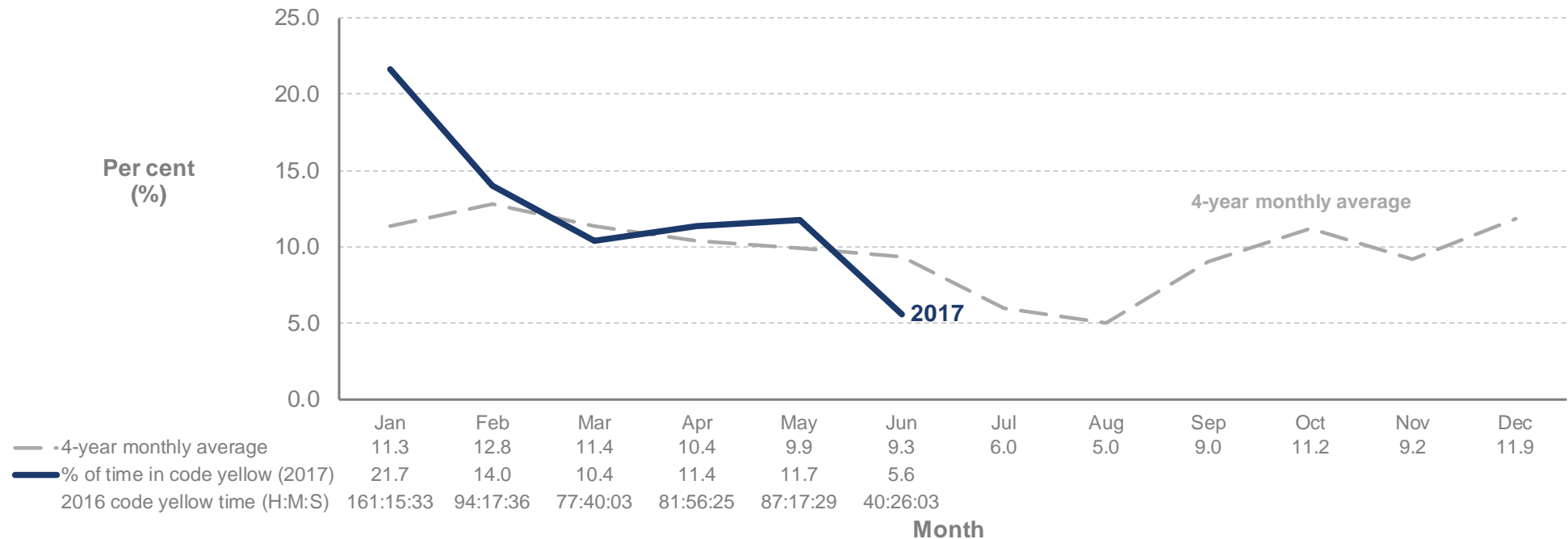
Source: TabletPCR (July 21st, 2017)



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Percentage of time in code yellow status, by month

Region of Waterloo Paramedic Services, inside and outside of Waterloo Region, January 1st to December 31st 2013-2016 and January 1st to June 30th, 2017



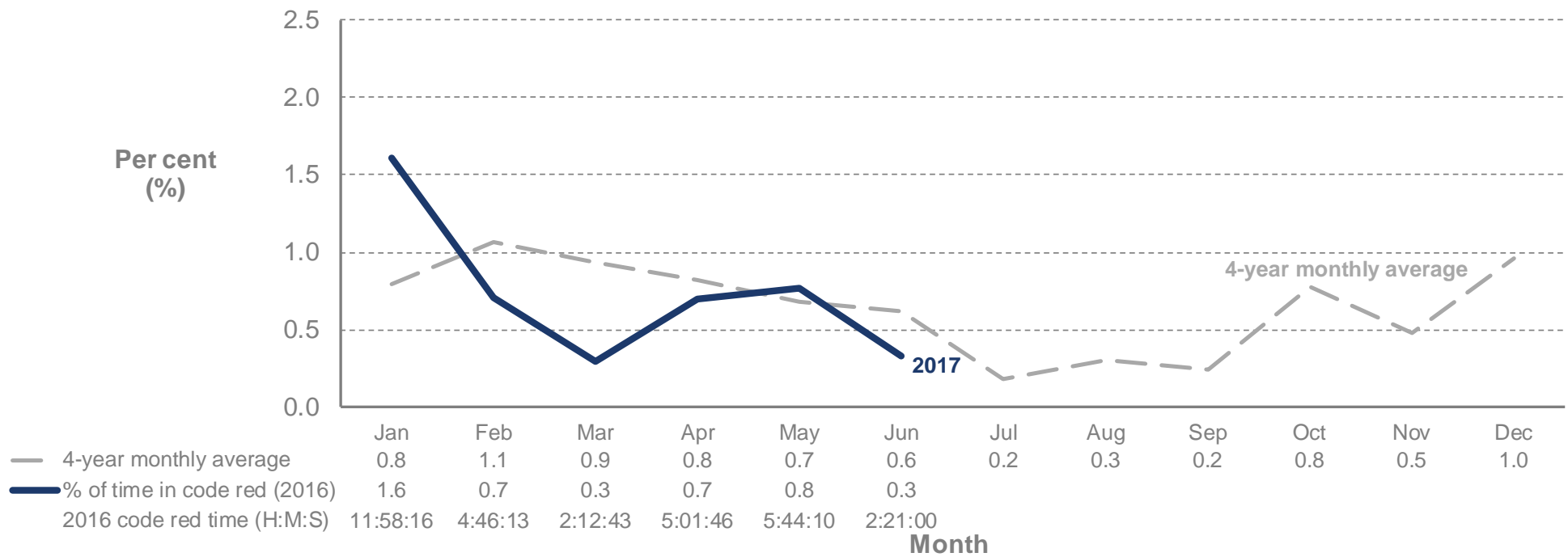
Source: CACC (July 21st, 2017)



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Percentage of time in code red status, by month

Region of Waterloo Paramedic Services, inside and outside of Waterloo Region, January 1st to December 31st 2013-2016 and January 1st to June 30th, 2017



Source: CACC (July 21st, 2017)



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D. Service and Quality Impact Indicators

Definition of Indicator Group

Indicators that measure not only the timely provision of service, but how well that service is being provided by Paramedic Services' staff (How well is the service being performed?).

Summary of Results

Note that service type indicators tend to fluctuate around the average over time, particularly when a small number of cases are involved. The percentage of stroke patients taken to stroke facilities improved 3.0 per cent from the same time period in 2016 to 89.0 per cent. The percentage of cardiac arrest patients with the return of pulse was 11.0 per cent in the first half of 2017 compared to 13.4 per cent in the first half of 2016. As any return of spontaneous circulation is deemed to be positive, results are in an acceptable range (variation is normal due to the small number of cases). Heart attack STEMI (ST-segment elevation myocardial infarction) protocol compliance (providing care in less than 90 minutes) was 77.7 percent, above the historical average of 68.7.0 per cent for the year-to-date (variation is expected for heart attack STEMI due to the numerous variables involved).

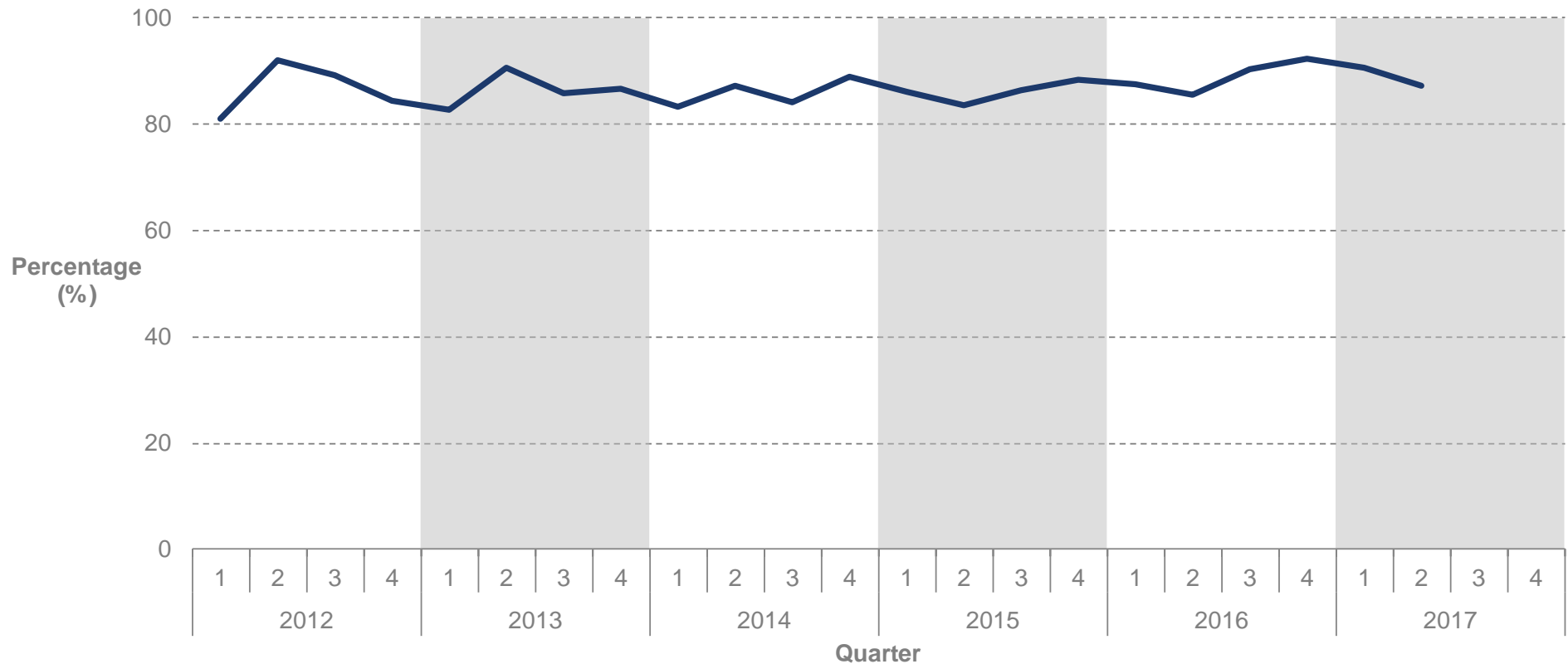
Indicator Name	Indicator Definition	Mid-year 2016	Mid-year 2017	Per cent change
Stroke Patient to Stroke Facilities	The percentage of stroke patients taken to Provincial Stroke Facilities. *Note that 'stroke protocol' outlines that only patients with certain symptoms and within certain timelines are transported to a stroke facility. Due to this, a variance under 100% may not necessarily represent a missed target.	86.6%	89.3%	+3.0%
Return of Spontaneous Circulation (ROSC)	The percentage of cardiac arrest patients with the return of pulse.	13.4%	11.0%	-17.4%
Heart attack (STEMI) Protocol ST-Segment Elevation Myocardial Infarction	The percentage of STEMI patients where care was provided in less than 90 minutes ('STEMI' represents a type of heart attack). *Note that indicator results are shared among Paramedic Services and St. Mary's Hospital. Paramedic Services can only control time from patient contact to arrival at St. Mary's Hospital; the remaining time to the 90 minute target is hospital dependent.	74.6%	77.7%	+4.0%



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Percentage of stroke patients transported to a stroke facility[†], by quarter

Region of Waterloo Paramedic Services, inside and outside of Waterloo Region, January 1st, 2012 to June 30th, 2017



[†]Stroke facilities include: Grand River, Brantford General, Hamilton General, Stratford General, and as of December 2013 Guelph General.

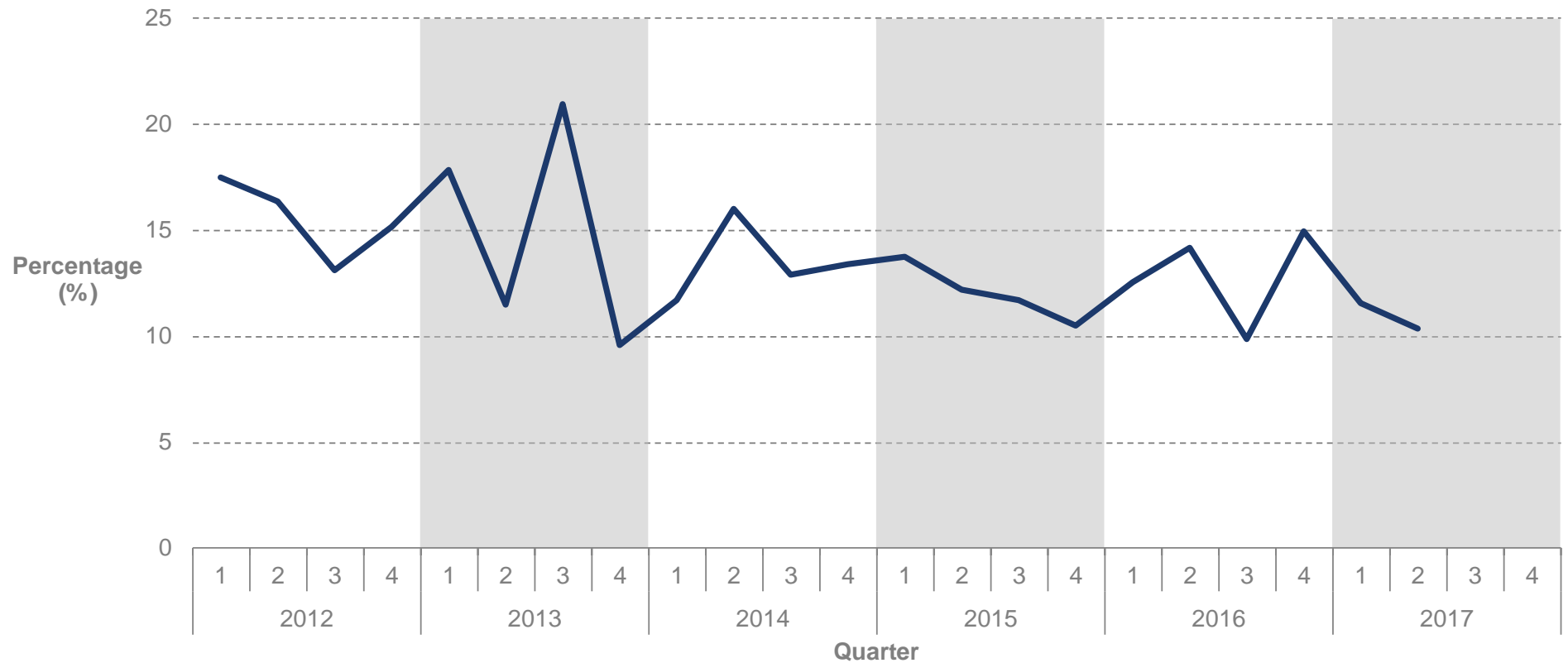
Source: TabletPCR (July 21st, 2017)



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Percentage of cardiac arrest patients with return of spontaneous circulation (ROSC), by quarter

Region of Waterloo Paramedic Services, inside and outside of Waterloo Region, January 1st, 2012 to June 30th, 2017



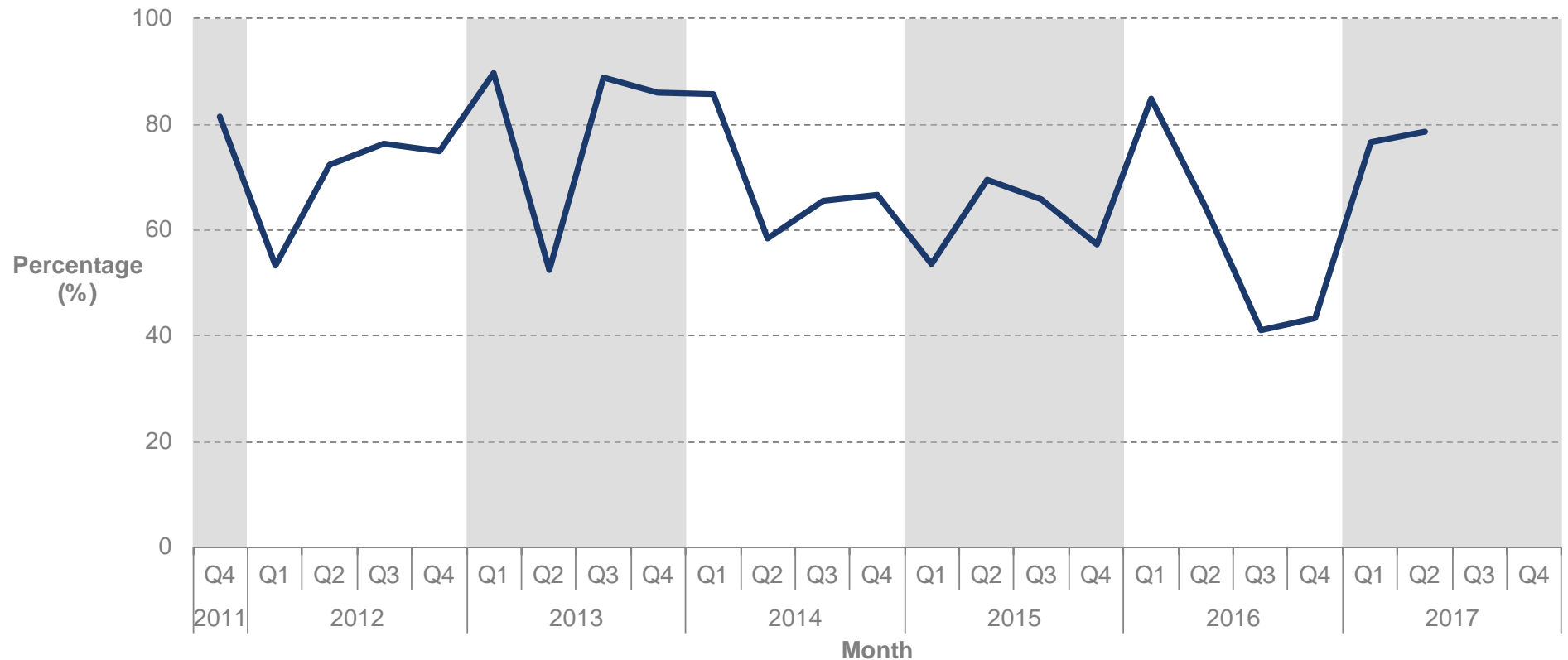
Source: TabletPCR (July 21st, 2017)



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Percentage of heart attack patients where care was provided in less than 90 minutes (STEMI protocol), by quarter

Region of Waterloo Paramedic Services, inside and outside of Waterloo Region, September 1st, 2011 to June 30th, 2017



Source: St. Mary's Hospital (July 21st, 2017)

E. GLOSSARY

ADRS: Ambulance Dispatch Reporting System

CACC: Central Ambulance Communications Centre

Call density: A 1km x 1km grid was overlaid across Waterloo Region so each call could be assigned a grid square based on its location. The total number of calls and an average per month calculated for each grid square. Grid squares were then assigned one of three classes:

Urban - A grid square was classed as urban if there were more than two calls per month per square kilometer and at least half of its neighbouring grid squares were of the same density or higher.

Suburban - A grid square was classed as suburban if there were less than or equal to two calls and more than 0.5 calls per month per square kilometer and at least half of its neighbouring grid squares were of the same density or higher.

Rural - A grid square was classed as suburban if there were less than or equal to 0.5 calls and more than 0.08 calls per month per square kilometer and at least half of its neighbouring grid squares were of the same density or higher.

Cardiac Arrest: A sudden, sometimes temporary, cessation of the heart's functioning.ⁱ

Code 1 (Deferrable): A routine call that may be delayed without detriment to the patient (e.g. a non-scheduled transfer; a minor injury).ⁱⁱ

Code 2 (Scheduled): A call which must be done at a specific time, for example because of special treatment or diagnostic facility requirement (e.g. inter-hospital transfers or a scheduled meet with an air ambulance).ⁱⁱⁱ

Code 3 (Prompt): A call that should be performed without delay (e.g. serious injury or illness).^{iv}

Code 4 (Urgent): A call that must be performed immediately where the patients 'life or limb' may be at risk (e.g. Vital Signs Absent patient or unconscious head injury).^v

Code Red: When the Region of Waterloo Paramedic Services is at a level where no ambulances are available to respond to the next emergency call and no out of town services are immediately available to assist.^{vi}

Code Yellow: When the Region of Waterloo Paramedic Services is at minimum coverage of three vehicles or less.^{vii}



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CTAS Level: The ‘Canadian Triage & Acuity Scale’ is used to assign a level of acuity to a patient. Acuity refers to the gravity of the situation – the potential for death and/or irreversible illness. CTAS is a tool that more accurately defines the patient’s need for care. Assignment of the CTAS level is to be based upon not only the presenting complaint identified on the initial assessment made by the paramedic, but also on their examination findings, and response to treatment.^{viii}

Defibrillator: An electronic device that applies an electric shock to restore the rhythm of a fibrillating heart.^{ix}

Dispatch Priority Code: The priority code number that is assigned to the call by the dispatcher. It identifies the priority under which the ambulance responds to the call location (e.g. an urgent response would be entered as Code 4).^x

Emergency Calls: Based on dispatch priority only. Emergency calls are categorized as Code 4 (Urgent).

Indicator: A defined part of a program/team/system that is deemed important to measure and provide “specific information on the state or condition of”, as it contributes to the efficient and effective achievement of an outcome.^{xi}

MBNCanada: Municipal Benchmarking Network Canada, formerly the Ontario Municipal Benchmarking Initiative (OMBI), is a partnership between Canadian municipalities for the purpose of fostering and supporting a culture of service excellence through the identification, creation, and collection of consistent and comparable performance data, and the sharing of operational best practices and collaboration on creative solutions to improve performance.

Offload Delay: Offload delay measures the offload of patients at local hospitals, which can impact the resources required and availability to respond to calls.^{xii}

Patient Transport(s): The total number of patients carried in the ambulance during a given call.^{xiii}

Performance Measurement: A method to monitor, observe and describe program implementation. It portrays information to tell that outputs are being delivered as planned, and gives an idea of whether outcomes are occurring. It provides information to be used for evaluation.^{xiv}

Response: See vehicle response.

Response Time: Response time means the time measured from the time a notice is received to the earlier of either the arrival on-scene of a person equipped to provide any type of defibrillation to sudden cardiac arrest patients or the arrival on-scene of the ambulance crew.^{xv}



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Return of Spontaneous Circulation: Signs of the return of spontaneous circulation (ROSC) include breathing (more than an occasional gasp), coughing, or movement. For healthcare personnel, signs of ROSC also may include evidence of a palpable pulse or a measurable blood pressure.^{xvi}

Return Priority Code: The priority code number that is assigned to the call by the ambulance crew. It identifies the priority under which the patient is transported (e.g. a prompt return to a medical facility would be entered as a Code 3).^{xvii}

STEMI: A STEMI (ST-Segment Elevation Myocardial Infarction) is a specific type of myocardial infarction (MI), or in other words a type of heart attack, which demonstrates characteristic ECG (electrocardiogram; a tool to measure electrical activity of the heart) changes including marked elevation in the ST-segment in the cardiac cycle.^{xviii}

STEMI Facilities: A hospital that houses onsite Percutaneous Coronary Intervention (PCI) facilities with an experienced interventional team.^{xix}

Stroke Facilities: Stroke facilities are based on a collaborative model of 11 regional stroke networks. Each regional network is comprised of a Regional Stroke Centre (RSC), District Stroke Centres (DSCs) and community hospitals. The regional stroke networks are collaborative partnerships of care providers that span the care continuum from prevention to community re-engagement. The goal is to coordinate equitable access and improve outcomes for stroke survivors.^{xx}

T1: The time point when a call is entered in to the queue at the Central Ambulance Communications Centre and is available for dispatch.

T2: The time point when ambulance/response unit is notified by the Central Ambulance Communications Centre of a call.

T4: The time point when an ambulance/response unit arrives at the dispatched call's location/scene. This is not the time point when a paramedic is at the patient's side.

T6: The time point when an ambulance arrives at its destination (e.g. hospital).

TabletPCR: An internal tool used to track information and data relevant to calls and patient care reporting.

Unit Utilization: Percentage of staffed vehicles utilized during any unit of time.^{xxi} Note that when UU exceeds a value of 40 per cent, it becomes difficult to ensure an ambulance will be available for the next call in a reasonable time.



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Vehicle response: A vehicle response is generated when an ambulance or emergency response unit is dispatched to a call; there can be more than one vehicle response per call (multiple ambulances/emergency response units assigned to the same call; for example, multi-casualty incidents).

YTD: Year-to-date refers to the period extending from the beginning of the current reporting year (January 1st) to the end of the reporting period. The Mid-year report's end date is June 30th, and the year-end report's end date is December 31st.



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F. Contact Information

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Notes

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- ⁱⁱⁱ Government of Ontario, Ministry of Health and Long-Term Care, Ambulance Call Report Completion Manual (Ontario: Government of Ontario, 2003) 9.
- ^{iv} Government of Ontario, Ministry of Health and Long-Term Care, Ambulance Call Report Completion Manual (Ontario: Government of Ontario, 2003) 9.
- ^v Government of Ontario, Ministry of Health and Long-Term Care, Ambulance Call Report Completion Manual (Ontario: Government of Ontario, 2003) 9.
- ^{vi} Region of Waterloo. Public Health. Emergency Medical Services. 2011 EMS System Performance. Report PH-12-017. File Code P 05-80. Waterloo: Region of Waterloo, May 8, 2010. Web. 14 August 2013.
- ^{vii} Region of Waterloo. Public Health. Emergency Medical Services. 2011 EMS System Performance. Report PH-12-017. File Code P 05-80. Waterloo: Region of Waterloo, May 8, 2010. Web. 14 August 2013.
- ^{viii} Government of Ontario, Ministry of Health and Long-Term Care, Ambulance Call Report Completion Manual (Ontario: Government of Ontario, 2003) 17.
- ^{ix} “Defibrillator”. *Merriam-Webster*. Merriam Webster, Incorporated, 2013. Web. 13 August 2013.
- ^x Government of Ontario, Ministry of Health and Long-Term Care, Ambulance Call Report Completion Manual (Ontario: Government of Ontario, 2003) 9.
- ^{xi} “Definition of indicator in English”. *Oxford Dictionaries*. Oxford University Press, 2013. Web. 14 August 2013.

- ^{xii} “What is Service?”. *OMBI Ontario Municipal CAO’s Benchmarking Initiative*. Ontario Municipal CAO’s Benchmarking Initiative, 2012. Web. 13 August 2013.
- ^{xiii} Government of Ontario, Ministry of Health and Long-Term Care, Ambulance Call Report Completion Manual (Ontario: Government of Ontario, 2003) 11.
- ^{xiv} Schacter, Mark. Kronick, Murray. “Results-Based Management 101”. *Performance and Planning Exchange*. Performance and Planning Exchange, 2010-2011. Web. 14 August 2013.
- ^{xv} “Ambulance Act”. *ServiceOntario e-Laws*. Government of Ontario, 2013. Web. 14 August 2013.
- ^{xvi} “Cardiac Arrest and Cardiopulmonary Resuscitation Outcome Reports”. *American Heart Association*. American Heart Association, Inc., 2013. Web. 13 August 2013.
- ^{xvii} Government of Ontario, Ministry of Health and Long-Term Care, Ambulance Call Report Completion Manual (Ontario: Government of Ontario, 2003) 10.
- ^{xviii} “Cardiac Care STEMI Program Frequently Asked Questions”. *Toronto EMS News & Video*. Toronto Emergency Medical Services, 1998-2013. Web. 13 August 2013.
- ^{xix} “CCN Documents Optimizing Access to Primary PCI for ST Elevation Myocardial Infarction”. *Cardiac Care Network*. Cardiac Care Network of Ontario, 2013. Web. 14 August 2013.
- ^{xx} “The Ontario Stroke System (OSS)”. *Ontario Stroke Network Advancing the Ontario Stroke System*. Ontario Stroke Network, 2010. Web. 13 August 2013.
- ^{xxi} Region of Waterloo. Public Health. Emergency Medical Services. Emergency Medical Services (EMS) Master Plan. Report PH-07-061. File Code P 05-01. Waterloo: Region of Waterloo, December 4, 2007. Web. 14 August 2013.