

The County of Peterborough
Joint Services Steering Committee

To: Chair and Members of Committee
From: Randy Mellow, Chief of Paramedics
Date: September 4, 2014

Purpose

To provide Joint Services Steering Committee with a summary of the results of the Peterborough County/City Paramedic (PCCP) Service Organizational Review.

Recommendation

That Joint Services Steering Committee receive the report for information.

Financial Impact

Including wages and benefits - 2014 budget year - \$2,900; 2015 budget year annualized - \$8,700.

Overview:

At the direction of County Council, Peterborough County/City Paramedic Service (PCCP) has conducted an in-depth organizational review including the department's service delivery, organizational structure and human resources. This report was concluded and recommendations brought forward to Council on August 27th, 2014.

Scope of the review:

The PCCP management group is comprised of the following positions:

Chief of Paramedics	1
Deputy Chief of Paramedics	1
Commander of Paramedics	1
Superintendent, Logistics	1
Superintendent, Quality Assurance	1
Shift Superintendents – full-time	3
Vacant Shift Superintendent – full-time	<u>1</u>
	9

Superintendent, Emergency Management	1
Shift Superintendents – part-time	8 (1 on LOA)

Other positions supporting the administrative and paramedic units, **not specifically included** in this study include:

Executive Assistant	1
Professional Standards Support	1
Clerical – PCCP	1
Fleet Maintenance	1

See **Appendix A** for the current organizational chart.

The Study Process:

Two primary activities contributed to the underlying data and findings contained in this report:

1) Survey of Comparator Services:

An extensive survey was designed and delivered to fifteen (15) paramedic services. The response rate was remarkable with 15 of 15 responding.

The survey was comprised of two major sections: a) EMS Key Metrics; and, b) Organizational Structure and Total Compensation. The survey contained eighty-four (84) questions as well as the opportunity to provide accompanying back-up such as organizational charts, job descriptions and salary grids.

The data was compiled to allow for analysis of data from multiple perspectives and to calculate ratios and rank ordering based on the areas of interest.

2) Facilitated Session – Lean Six Sigma Approach

A black-belt qualified Lean Six Sigma consultant was contracted to deliver a two-day facilitated session. Participants included PCCP management, Human Resources and Corporate Projects & Services

The goal of the session was to apply lean six sigma principles and thinking to understand the current issues in the organizational structure and position design, and to identify the primary areas of functional responsibility that best align and integrate for position design and clarification of roles and responsibilities. The identification of “value streams” contributed to the identification of role improvements to ensure separation of roles and responsibilities and a focus on the value

streams or business processes that contribute to excellent emergency medical services.

Other sources of data that were referenced during this study include the Gazda, Houlne & Associates organizational review commissioned by the County of Peterborough dated December 18, 2013, Statistics Canada and Ontario Municipal Benchmarking Initiative (OMBI) EMS measurement data.

Analysis:

Comparator EMS Services Included in the Study

The following comparator EMS services were identified for inclusion in the study because of their similarity in providing services in eastern Ontario and/or in both urban/rural geographical disperse settings:

EMS Service	2014 Operating Budget	Total Geographic Service Area (km ²)	Total Population	Total Calls
Haliburton	\$4,778,000	4,072	17,026	6,096
Lennox & Addington	5,389,200	2,841	41,824	5,914
Haldimand	5,436,660	1,251	44,876	7,765
Brant	7,974,275	916	130,000	17,060
City of Kawartha Lakes	8,589,343	3,067	75,565	16,593
Bruce	9,150,000	4,025	64,000	10,393
Huron	9,565,496	3,402	58,500	10,558
Leeds & Grenville	10,086,804	3,351	96,606	20,879
Northumberland	10,120,587	1,906	86,000	20,137
Renfrew	10,500,000	7,700	90,000	34,485
Cornwall	10,945,000	3,000	110,000	16,667
Prescott-Russell	10,947,719	2,002	83,000	8,847
Grey	12,679,316	4,400	92,000	18,989
Peterborough	13,329,411	3,848	134,933	23,446
Hastings	15,188,845	7,151	160,430	28,167
Frontenac	15,252,910	3,996	149,738	25,423
Median	\$10,103,696	3,376	88,000	16,864
Average	\$9,995,848	3,558	89,656	16,964
Peterborough - Gap to Median	-\$3,225,716	-471	-45,277	-6,482
(negative value - exceeds median)				

The Findings

a) EMS Service Metrics

Data collected through the survey of fifteen (15) other EMS services was examined in order to develop and compare Key Metrics focused on the service demand, performance, efficiency and efficacy.

The data analysis also provides a comparison of geographic area and population demographics to enable additional consideration of correlation to EMS Performance Metrics. The following are key findings related to EMS System/Service Metrics:

Geographic and Population Demographics

The survey results indicate that the region served by PCCP is comparatively close to the median in terms of geographic size and population density as compared to the 15 services examined. The data also indicates, however, that the age demographic of the Peterborough Region does not align with the comparator group with a very high ratio of population aged 65 years and over. The survey data as well as retrospective ambulance call data review provides evidence of correlation of those age demographics with both demand for service and operating costs.

Geographic Area Served versus Population Density

Total Geographic Service Area (km²)		Population Density (Population per km²)	
Renfrew	7,700	Brant	142
Hastings	7,151	Northumberland	45
Grey	4,400	Prescott-Russell	41
Haliburton	4,072	Frontenac	37
Bruce	4,025	Cornwall	37
Frontenac	3,996	Haldimand	36
Peterborough	3,847	Peterborough	35
Huron	3,402	Leeds & Grenville	28
Leeds & Grenville	3,350	City of Kawartha Lakes	25
City of Kawartha Lakes	3,067	Hastings	22
Cornwall	3,000	Grey	21
Lennox & Addington	2,841	Huron	17
Prescott-Russell	2,002	Bruce	16
Northumberland	1,906	Lennox & Addington	15
Haldimand	1,251	Renfrew	11
Brant	916	Haliburton	4
Average	3,558	Average	33
Median	3,402	Median	27

Population of Aged – per Statistics Canada

Persons Age > 80 per 1000 pop (Stats Can)		Population Age > 65 (Stats Can)	
Haliburton	61	Peterborough	27,055
City of Kawartha Lakes	59	Frontenac	24,925
Peterborough	59	Hastings	24,920
Grey	58	Cornwall	20,820
Northumberland	57	Brant	20,675
Huron	56	Grey	19,510
Leeds & Grenville	52	Leeds & Grenville	19,485
Cornwall	51	Haldimand	19,355
Renfrew	51	Renfrew	18,420
Hastings	50	Northumberland	17,885
Bruce	49	City of Kawartha Lakes	16,010
Haldimand	47	Bruce	13,250
Frontenac	46	Prescott-Russell	12,135
Lennox & Addington	44	Huron	11,725
Brant	44	Lennox & Addington	7,580
Prescott-Russell	34	Haliburton	4,750
Average	51	Average	17,406
Median	51	Median	18,888

Demand for Service and Level of Service Provided

A review of data related to the rate of EMS request for response was conducted and compared against the level of EMS service currently provided. The rate at which the residents of Peterborough County/City utilize the Paramedic services falls well above the median at 120.85 requests for response per 1000 persons. It is very important to note that almost all services (3 of 4) reporting higher rates of utilization continue to provide a high ratio of non-urgent patient transport. The majority of non-urgent patient transfers are appropriately served by *private carriers* within Peterborough County/City.

In terms of level of service provided to the community in the form of In-Service Ambulance Hours, PCCP currently falls well below the median as compared to the comparator group. As a result of the high rate of request and the lower number of In-Service Ambulance hours, PCCP ambulances tend to be much busier with a Response per Unit Hour rate which is well above the median.

In consideration of the data revealed within this survey in relation to population demographics, local rates of request for response and current service staffing levels, further consideration should be given to performing a more detailed analysis in order to provide clearer prediction of future service demand and subsequent growth for long term planning.

Rate of Request vs. In-service Ambulance Hours

Rate of Request - Responses/1000 pop (Notes: 1 = Service performs a high percentage non-urgent transfers, 2 = Service provides first response unit coverage)		In-service Ambulance Hours/1000 population	
Renfrew (Note 1, 2)	181.18	Haliburton	1543.52
Haliburton	161.81	Renfrew	827.33
Cornwall (Note 1, 2)	149.27	Huron	821.33
Frontenac (Note 1, 2)	136.45	Haldimand	780.81
Peterborough	120.85	Prescott-Russell	765.10
Leeds & Grenville (Note 1, 2)	119.95	Grey	755.43
Hastings (Note 1)	119.64	Lennox & Addington	733.07
Lennox & Addington (Note 1)	114.74	City of Kawartha Lakes	694.92
Grey (Note 1)	111.03	Northumberland	662.09
Haldimand (Note 1)	109.92	Cornwall	567.27
City of Kawartha Lakes	107.81	Leeds & Grenville	565.59
Brant	105.6	Hastings	529.75
Prescott-Russell (Note 1)	105.27	Frontenac	508.40
Bruce (Note 1)	104.87	Peterborough	470.63
Northumberland	88.45	Brant	303.23
Huron (Note 1, 2)	71.31	Bruce	210.37
Average	119.26	Average	671.18
Median	112.88	Median	678.50

of Emergency Responses per Ambulance Unit Hour

Emergency Responses/Ambulance Unit Hour	
Bruce	0.39
Brant	0.34
Frontenac	0.26
Peterborough	0.25
Cornwall	0.23
Hastings	0.22
Leeds & Grenville	0.19
Renfrew	0.19
City of Kawartha Lakes	0.15
Lennox & Addington	0.15
Northumberland	0.13
Haldimand	0.13
Prescott-Russell	0.13
Grey	0.12
Haliburton	0.10
Huron	0.08
Average	0.19
Median	0.17

Efficiency and Efficacy of Operations

Through examination of the survey data, PCCP Operations have been compared to the fifteen (15) other respondents in terms of Operating Cost and efficacy of operations in the form of response time to emergent calls for service. The areas examined include the cost of paramedic operations per population, per ambulance response and per ambulance in-service hour. The data reveals that PCCP cost of operations by population and by individual response fall below the median. This could most likely be attributed to the lower number of in-service ambulance hours provided across the community and the resultant higher rate of responses per unit hour (decreased paramedic down time). In terms of cost per in-service hour of operation, PCCP costs are above the median. As these costs are disproportionately driven by wages, this deviation would most likely be best explained by paramedic wages that exceed the median combined with the increased costs of ACP classified paramedic positions.

Traditionally ambulance performance metrics have been limited to response times. Under newly legislated Land Ambulance Service Response Time Standards, each Municipality operating an Ambulance Service must develop a Response Time Plan including targets based on

medical acuity and report on performance based on those targets in the following year. In order to provide a comparison of efficacy of the PCCP service delivery to the comparator group, the response times targets designated for CTAS 1 (Emergent or Life Threatening) response was examined. As indicated by the chart below, PCCP maintains an aggressive target of a 66% response rate to CATS 1 calls in 8 minutes or less. This target is well above the median.

Operating Costs per Population and per Response

Operating Cost per Population		Operating Cost per Response	
Haliburton	\$280.63	Huron	\$2,292.78
Huron	\$163.51	Haliburton	\$1,734.30
Bruce	\$142.97	Bruce	\$1,363.23
Grey	\$137.82	Northumberland	\$1,330.43
Prescott-Russell	\$131.90	Prescott-Russell	\$1,252.89
Lennox & Addington	\$128.85	Grey	\$1,241.24
Haldimand	\$121.15	Lennox & Addington	\$1,122.98
Northumberland	\$117.68	Haldimand	\$1,102.10
Renfrew	\$116.67	City of Kawartha Lakes	\$1,054.30
City of Kawartha Lakes	\$113.67	Leeds & Grenville	\$870.45
Leeds & Grenville	\$104.41	Peterborough	\$817.35
Frontenac	\$101.86	Hastings	\$791.29
Cornwall	\$99.50	Frontenac	\$746.52
Peterborough	\$98.79	Cornwall	\$666.57
Hastings	\$94.68	Renfrew	\$643.90
Brant	\$61.34	Brant	\$580.88
Average	\$125.96	Average	\$1,100.70
Median	\$117.17	Median	\$1,078.20

**Operating Cost per In-service Ambulance Hour
& % of Responses 8 min. or Less**

Operating Cost per In-Service Ambulance Hour		Response Time Plan Target (CTAS 1 - Percentage of Response 8 min or less)	
Bruce	\$679.59	Cornwall	68
Peterborough	\$209.90	Frontenac	68
Brant	\$202.29	Peterborough	66
Frontenac	\$200.36	Brant	65
Huron	\$199.08	City of Kawartha Lakes	55
Leeds & Grenville	\$184.60	Hastings	55
Grey	\$182.44	Northumberland	55
Haliburton	\$181.81	Renfrew	55
Hastings	\$178.72	Leeds & Grenville	52
Northumberland	\$177.74	Bruce	50
Lennox & Addington	\$175.77	Grey	50
Cornwall	\$175.40	Haldimand	50
Prescott-Russell	\$172.39	Lennox & Addington	50
City of Kawartha Lakes	\$163.57	Prescott-Russell	45
Haldimand	\$155.16	Haliburton	40
Renfrew	\$141.02	Huron	35
Average	\$211.24	Average	54
Median	\$180.26	Median	54

b) Organizational Structure

Comparison of the PCCP organization structure and staffing with 15 other EMS services was undertaken to identify similarities and differences in the approach being taken to organization design as well as to identify similarities and differences in staffing and staffing numbers. The comparative analysis identified a number of specific findings related to the commonality of services, functional responsibility distribution and total staffing. The following are key findings from the study:

of Shift Superintendents

The study results indicate that the 4th Shift Superintendent position that has been approved in the 2014 budget year is warranted. The number of full-time positions in other services ranged from a low of one (1) to a high of six (6), with the average/median being four (4).

The weekly hours worked by Shift Superintendents in 71% of comparators is 42 hrs./week. This aligns best with the 42 hr./week scheduling of paramedics to ensure 24/7 front-line supervision. PCCP Shift Superintendents currently work a 40 hr. work week which is out of line with

comparators. The County would be best served from a liability and efficiency perspective to move the full-time Shift Superintendents to a 42 hr./week assignment prior to filling the 4th Shift Superintendent position. The cost of this change is minimal given that it is a shift of costs from part-time to full-time staffing, and will result in fewer part-time hours being paid. Costing estimates are included in the recommendation section below.

of Full-time vs. Part-time Paramedics

The organizational review conducted by Gazda, Houlne & Associates Inc. made the observation that PCCP full-time to part-time paramedic ratios are out of line with comparators used in their study. Study results confirmed those finding as follows:

FT Paramedics vs. PT Paramedics	
Brant	0.63 : 1
Lennox & Addington	0.65 : 1
Peterborough	0.81 : 1
Haliburton	0.92 : 1
Northumberland	1.00:1
City of Kawartha Lakes	1.05 : 1
Leeds Grenville	1.06 : 1
Haldimand	1.07 : 1
Prescott-Russell	1.11 : 1
Bruce	1.18 : 1
Hastings	1.31 : 1
Grey	1.34 : 1
Renfrew	1.49 : 1
Frontenac	1.50 : 1
Cornwall	1.72 : 1
Huron	1.93 : 1

While this was flagged in the organizational review, it was not cited as being problematic unless the staffing ratio is not meeting operational requirements. Steps have been taken to assess and reduce the number of part-time employees (from 72 to 67) and the department will continue to assess the need to increase/reduce the part-time employee group. However, this pool of employees is relied upon heavily to backfill full-time employees on various leaves from the workplace and PCCP is hesitant to reduce it significantly until it is know that operational requirements can continue to be met in doing so. Review of this ratio will continue particularly as it relates to the longer term needs of the County and its aging demographic.

of PCP vs. ACP Qualified Paramedics

There are two classifications of Paramedics: Primary Care Paramedics (PCP's) and Advanced Care Paramedics (ACP's). ACP's have an expanded scope of practise that is defined by the Ministry of Health & Long Term Care, established to improve mortality rates when providing emergency patient care. Some services have established target ratios of PCP:ACP full-time staffing numbers at 50%. This enables those services to staff ambulances with one PCP and one ACP, to ensure advanced patient care is available throughout the geographic vicinity it serves.

The chart below provides the comparator data related to staffing ratios and is intended for information only at this point. Currently, PCCP has 25% of full-time paramedics that are ACP qualified. A holistic report that examines the research and studies related to ACP impact on mortality rates and patient care, what the PCCP current state and desired state is in the longer term, and any costs associated with such a strategic target is in progress and will be brought to Council within the next several months.

Total % Full-time ACP	
Bruce	0.00%
Grey	0.00%
Haldimand	0.00%
Haliburton	0.00%
Leeds & Grenville	0.00%
Lennox & Addington	3.57%
Prescott-Russell	7.69%
Cornwall	12.90%
Peterborough	25.00%
Huron	26.92%
Frontenac	28.21%
Northumberland	30.77%
Hastings	34.52%
Renfrew	37.31%
City of Kawartha Lakes	50.00%
Brant	90.00%

of Management Positions

There has been reference made to the size and structure of the PCCP management team in the organizational review that was conducted. Gazda reported a trend average of 7 management positions based on their study group, and our results confirmed this. However, for those services with comparable call volumes, service hours, geographic sq. km. and population served (i.e. the larger services), the number of management positions in PCCP is not out of line (currently 9 positions including the 4th Shift Superintendent). A review of organizational charts also reveals a number of services that have non-union/union positions dedicated for specific functions (in some situations Shift Supervisors or paramedic leads do the work of Logistics/Scheduling or Quality Assurance functional managers).

Position Comparables	Total FT Managers (incl. Chief, excl. EM)
Haldimand	3
Haliburton	3
Lennox & Addington	4
City of Kawartha Lakes	5
Brant	7
Bruce	7
Cornwall	7
Grey	7
Huron	7
Leeds & Grenville	7
Northumberland	7
Prescott-Russell	7
Frontenac	9
Peterborough	9
Renfrew	9
Hastings	10

Two Deputy Chief Model

Gazda's report made reference to consideration of a "two Deputy Chief" organizational model, as compared to the current Commander ->Deputy Chief ->Chief reporting structure. This was based on feedback gathered through interviews in the organizational review process, as well as Gazda's comparison of the organizational structure against their 16 design principles.

Many of the comments that were contained in Gazda's report were echoed by existing PCCP management employees during the two-day facilitated session. The existing structure creates confusion in reporting, task fulfillment, responsibilities and job functions – best described as a web of accountabilities.

The comparator data provides support to this recommendation from Gazda. Ten (10) of the comparators surveyed have applied the two (2) Deputy Chief model and only three (3) have a Commander in place.

Organizational Structure

An examination of the current organizational structure was undertaken, relying on three important sources of information: 1) Gazda's organizational review report; 2) the County's comparator data survey results; and, 3) the results of the two-day facilitated session. The four primary goals captured at the beginning of this report were referenced to ensure the outcome of the review gave consideration to the concerns that had been identified.

One-to-One Reporting Relationship

A visual examination of the organization chart quickly confirms the structural flaw in its current design. The one-to-one relationship between the Commander, Deputy Chief and Chief contravenes the principles of sound organizational design by creating a bottleneck with the Commander position.

Position Responsibilities

When the Commander position was inserted into the organizational structure a few years ago, the position description was developed and implemented but there was significant confusion about the roles and responsibilities of other positions. Work was done to provide greater clarification for each position as it relates to the major business processes and tasks by developing a RACI chart, a Lean Six Sigma tool, used to articulate for tasks the position that is **R**esponsible, **A**ccountable, **C**onsulted, **I**nformed. While this provided some assistance, there remained the issue of overlapping responsibilities and accountabilities, etc.

Lean Six Sigma Exercise

This two day session was invaluable to the organizational review. It promoted buy-in to outcomes through active participation of PCCP management employees. It involved several processes:

- ▶ Identify the current state of undesirable effects (UDE's) – duplication of effort, confusion about roles and responsibilities, lines of accountability unclear, etc.

- ▶ Criteria for the perfect solution –
 - § Visible goals/objectives, connect work to goals, respected, valued, meaningful work, no fear of mistakes
 - § High level processes of focus – such as disaster planning, quality of patient care, staff scheduling, investigations, fleet/equipment/procurement, regulatory compliance, vehicle deployment, facility maintenance, health & safety, managing human resources, training, external liaisons/PR, and strategic/long term planning
- ▶ High level process mapping (inputs, process, outputs) of the processes identified
- ▶ Identifying the load or effort associated with each high level process
- ▶ Partitioning or bundling the high level processes:
 - § Operations Strategy }
§ Disaster }
§ Strategic Long Term Planning } Plan
§ Operational & External Liaison }

 - § Facilities }
§ Fleet/Equipment } Physical
Resources }

 - § People }
§ Staff Scheduling } Human

 - § Patient Care/QA }
§ Training } Quality Program
§ H&S }

Organizational Changes

These outputs were used to consider changes to current job descriptions and organization structure (see Appendix B – Proposed Organization Chart) with changes proposed as follows:

Chief – clarify primary responsibility for disaster planning by having Superintendent, Emergency Management report directly through to the Chief

Deputy Chief of Paramedics – change title to “Deputy Chief, Operations” with responsibility for operational planning and physical resources; report directly to the Chief; supervision of Shift Superintendents, Fleet & Equipment, Paramedics

Commander – change the position of Commander to “Deputy Chief, Professional Standards” with responsibility for human resources (people) and quality programs; report directly to the Chief; supervision of Superintendent, Quality Assurance and Superintendent, Staffing & Development.

Superintendent, Emergency Management – report directly to the Chief (not Deputy Chief)

Superintendent, Logistics – change title to “Superintendent, Staffing & Development”; duties modified to remove responsibilities related to physical resources and facilities; focus on training, development, recruitment, health & safety, scheduling and human resource processes (i.e. leaves, return-to-work, accommodations)

These changes are intended to better delineate roles, responsibilities and accountabilities, and to provide the foundation on which future efficiencies will be built. The dual Deputy Chief model provides strong support for succession planning and business continuity in the absence of the Chief.

Additionally, it is expected that this revised organizational structure will provide greater clarity and consistency of areas of responsibility to improve relations with other departments (i.e. finance, IT, HR).

Cost Implications

Detail	2014 – Partial Year	2015 – Annualized Cost
Commander – moved to Deputy Chief	\$2,900	\$8,700
Shift Superintendents – move from 40 to 42 hrs./week (4 positions)	136 hours shift from part-time to full-time – cost neutral	416 hours shift from part-time to full-time – cost neutral
Total	\$2,900	\$8,700

The 2014 costs as well as other incidental costs associated with position title changes and administrative effort will be absorbed within existing budget allocations and included in the 2015 proposed budget currently in development. Estimated cost impacts include both wages and benefit burden as provided by Finance.

Summary:

Peterborough County/City Paramedic Services continues to meet aggressive response time targets while providing excellent pre-hospital care at primary and advanced care levels. The department is achieving this goal through the use of an

organizational structure of appropriate size and with demonstrated efficiency in terms of operating costs.

Opportunities found within this report, and addressed through the recommendations below, will assist the department in providing the effective leadership required to continue as an efficient and effective organization.

In consideration of the data analyzed in relation to population demographics, local rates of request for response and current service staffing levels, it can easily be surmised that the department will be unlikely to continue to efficiently meet its goals and stakeholder expectations while maintaining current service levels while encountering the increasing future demands. It is strongly recommended that further consideration be given to performing a more detailed analysis in order to provide clearer prediction of future service demand and subsequent growth for long term planning requirements.

Conclusion:

The following recommendations were presented to County Council on August 27th, 2014 and subsequently received approval for implementation on September 5th 2014.

- 1) That the position of Commander be modified to “Deputy Chief, Professional Standards” and that this position be placed on the salary grid at the same level as Deputy Chief, Operations.
- 2) That the position of Deputy Chief of Paramedics be modified to Deputy Chief, Operations.
- 3) That the position of Superintendent, Logistics be modified to “Superintendent, Staffing & Development”.
- 4) That the position of Superintendent, Emergency Management reporting relationship be changed to report directly to the Chief of Paramedics.
- 5) That the position of Shift Superintendent approved in the 2014 budget, and the three existing Shift Superintendent positions, be modified to reflect 42 hrs./week.
- 6) That these changes shall become effective September 5, 2014.

Respectfully submitted,

Original signed by

Randy Mellow

Chief of Paramedics

Attachments:

Appendix A – Current Organizational Chart – PCCP

Appendix B – Organizational Chart – PCCP – Sept. 5/14