



**To:** Community Safety Committee

**Date:** May 18, 2016

**From:** John McGowan  
Fire Chief

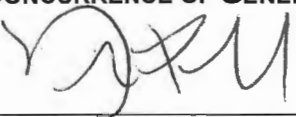

**File:** 09-5140-01/2016-Vol  
01

**Re:** BC Emergency Health Services Modelling Study

**Staff Recommendation**

1. That the staff report titled "BC Emergency Health Services Modelling Study," from Fire Chief John McGowan, dated May 18, 2016, be received for information; and
2. That a letter be sent to the Provincial Ministry of Health requesting that Richmond Fire Rescue be authorized to use the Provincial Patient Care Record form as part of the delivery of pre-hospital medical care through the first responder program.

John McGowan  
Fire Chief  
(604-303-2734)

<b>REPORT CONCURRENCE</b>	
<b>CONCURRENCE OF GENERAL MANAGER</b> 	
<b>REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE</b>	<b>INITIALS:</b>  DW
<b>APPROVED BY CAO</b> 	

## **Staff Report**

### **Origin**

This report is in response to the Council referral from the Regular Council meeting dated November 24, 2014:

*“That the Fire Chief continues to update Council on the impacts of the BC Ambulance Services (BCAS) dispatch protocol changes.”*

This report supports Council’s 2014-2018 Term Goal #1 A Safe Community:

*Maintain emphasis on community safety to ensure Richmond continues to be a safe community.*

- 1.3. Improved perception of Richmond as a safe community.*
- 1.4. Effective interagency relationships and partnerships.*

### **Findings of Fact**

British Columbia Emergency Health Services (BCEHS) provides pre-hospital services throughout the Province. Included in the pre-hospital services is British Columbia Ambulance Service (BCAS). In 2015, BCEHS retained Operational Research in Health (ORH) Ltd. to undertake a modelling study, assessing the future resource deployment requirements for BCAS in the Metro Region.

The scope of the overall project was to identify efficiencies, service standards and create recommendations that would inform a resource plan for ambulance deployment in the Metro Region over the next two to five years.

The project was conducted in three stages:

1. separate analysis of first responder data;
2. integrated analysis of BCAS and first responder data; and
3. recommend Metro Ambulance Service Delivery options analysis

### **First Responder Data**

Richmond Fire-Rescue (RFR) along with 16 additional Lower Mainland fire departments provided medical first responder (MFR) activity data to ORH for the 2014 calendar year. Some 90,486 records were provided of which 88,690 were linked to BCAS responses.

### **Significant finding:**

- Fire departments respond to 52.5% life threatening medical events (Delta/Echo), 46.5% possible life threatening medical events (Bravo/Charlie) and 1% non-life threatening medical events (Alpha/Omega). This distribution is consistent for RFR.

- The daily and hourly distribution of medical event response is consistent with very little variation between fire departments.
- The average response time for all fire departments to medical events is 5.33 minutes with little variation between medical response categories. RFR's average response is consistent with the average for the Metro Region 5:38 minutes.

### BCAS response compared to Fire Departments

1. Fire departments arrive on scene before BCAS on the vast majority of occasions:
  - 72% for Delta/Echo – Life threatening
  - 80% for Bravo/Charlie – Possible life threatening
  - 87% for Alpha/Omega – Non-life threatening
2. Fire departments, when arriving first on a medical events, wait for ambulance service on average:
  - 4:37 minutes for Delta/Echo
  - 9:23 minutes for Bravo/Charlie
3. The distribution of fire halls gives very good coverage of all medical events.
4. The BCAS resource allocation plan (RAP) has fire departments responding to:
  - 87% of all life threatening events, Delta/ Echo
  - 43% of all Possible life threatening events, Bravo/Charlie
  - Between 1 and 2% of all non-life threatening events, Alpha/Omega

### **Analysis**

The BCEHS report titled “Transforming Emergency Health Services Action Plan<sup>1</sup>” identified fire department staff as medical first responders for the most acute patients. Currently, BCEHS dispatches the closest fire department in approximately 30% of all medical events and 87% of the most acute cases.

The BCEHS Action Plan has five strategies to improve efficiency and effectiveness. These include:

1. Improving performance efficiencies to reduce dispatch and mobilization response times.
2. Working with stakeholders to change how BCEHS responds to calls of a minor nature and low acuity transfers.
3. Working with health authorities to streamline handover of care at emergency departments and improve turn-around times for ambulances from hospitals.
4. Working with government to develop a multi-year strategy for implementation of new resources.
5. Enabling innovation in the way the province delivers emergency health services.

---

<sup>1</sup> <http://www.bcehs.ca/about-site/Documents/transforming-emergency-health-services-action-plan.pdf>

The impact of the above recommendations on RFR could be substantial and what follows are possible scenarios based on a partial to full implementation of the recommendations:

1) Partial Implementation:

- a) Implementation of strategy 1 is realized in dispatch efficiency, with no other gains. Fire departments throughout the Lower Mainland will continue to be impacted by BCHES's projected 6% call increase in medical events per year.
- b) Implementation of strategy 1 and 2 where efficiencies are found in dispatch procedures and changes to how BCEHS responds to low acuity events with no other gains. Strategy 2 relies on significant changes to the union contracts where ORH suggest the use of single person response units. If achieved RFR would see crew utilization continue to increase in response to increase call volume. However, time at an event will decline as a result of the number of single person units put into operations by BCEHS.
- c) Implementation of strategies 1, 2, 3 and 5 where efficiencies are realized in a number of areas while still using the same number of staff. RFR would expect to see a minor reduction in call volume in the low acuity medical events as RFR has already reduced the number of Alpha level medical responses, a continued increase in crew utilization increase in response to increase call volume. However, time at an event will decline as a result of the number of single person units put into operations by BCEHS.

2) Full Implementation:

- a) RFR would expect to see call volume and crew utilization to increase but time at events would be reduced dramatically.

### Further Research

The ORH report examined tens of thousands of medical event records from first responders but did not examine the outcomes of patient treatment. While response time is one measure of efficiency, there is a need to study of the effectiveness of the actual treatment of the patient by first responders on scene.

To aid in the collection and comparative analysis of the patient treatment there is a need to standardize the way in which this data is collected. Currently RFR uses the Provincial First Responder form when recording information about patient treatment. This information is not in a form that aligns with the Provincial Patient Care Report (PCR) form and does not directly become part of the complete medical care record for the patient. By utilizing the PCR when recording information about patient treatment and conditions, this information can become part of the permanent patient record and used for analysis on the benefits and effects of first responder treatment in pre-hospital care.

### **Financial Impact**

None.

## Conclusion

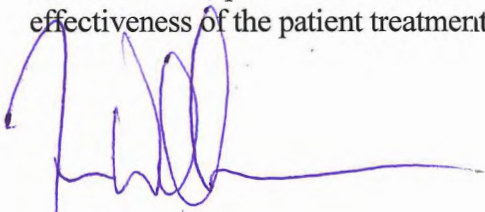
BCAS response to medical events will rise at a level of six percent (6%) per year totalling thirty percent (30%) by the end of 2020. If there are no changes in the manner in which BCEHS manages their resources, RFR could expect to see similar rates of increase in call volume.

The continued increase in RFR's emergency response has a direct impact on unit availability, response times, availability for non-emergency operations and in-service training. RFR will review the available statistics and amend resource allocation as necessary. A strategic option that RFR is exploring, is the utilization of a smaller specifically designed medical units to ensure that increasing requirements for medical services does not impact our fire response capabilities.

The continued increase in call volume in the City center may require additional response resources and potentially a facility to house staff and equipment.

BCEHS has cited that over the coming months, they will be working with the Provincial Government to develop a detailed implementation schedule for the recommended activities. The increase activity in the City of Richmond may require additional BCEHS resources. Any further changes to the delivery of pre-hospital care by BCEHS will be monitored, assessed and reported back to Council.

It is recommended that a letter be sent to the Provincial Ministry of Health requesting that the Patient Care Report form be utilized in Richmond. This report would enable a better analysis of the effectiveness of the patient treatment of first responders.



Tim Wilkinson  
Deputy Fire Chief  
(604-303-2701)

TW:tw