



REPORT TO COUNCIL

To: **Mayor and Councillors**

Subject: **Discussion Paper, Medical Emergency Service Alarm (MESA) Calls**

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From: Francis Cheung, P. Eng.
Chief Administrative Officer

Date: May 4, 2021

RECOMMENDATION:

THAT City Council receive this report for information.

PURPOSE:

The purpose of this report is to present the Discussion Paper, Medical Emergency Service Alarm (MESA) Calls to City Council.

POLICY:

Not applicable.

COMMENTS/ANALYSIS:

At the Regular Council meeting of March 22, 2021, City Council received a letter from City of Delta Mayor George Harvie to the Minister of Health dated March 10, 2021 regarding Emergency Medical Care in BC.

Following discussion, City Council directed staff to prepare a discussion paper on paramedical services in Langley City.

Introduction

The City of Langley has been concerned with the significant number of Medical Emergency Service Alarm (MESA) calls that the Langley City Fire Rescue Service (LCFRS) has responded to over the past 15 years. The percentage of MESA incidents that LCFRS has responded to over this period has been in the range of 70% to 79% of total calls, with the exception of 2020 due to the COVID-19 pandemic. The year 2012 marked the highest percentage of MESA incidents, when 2,018 out of the 2,552 incidents (79%) were MESA incidents (see Attachment 2). The number of MESA calls has been declining since the implementation of the Clinical Response Model (CRM) on May 30, 2018, with 2,514 calls in 2017, 1,913 calls in 2018 and 1,808 calls in 2019.

The City recognizes that the First Responder (FR) program is voluntary, but the fact is that this intermediate patient care can greatly enhance patient outcomes and therefore significantly reduce short-term and long-term costs to the overall health care system. The City further acknowledges the significant community benefits of supporting BC Emergency Health Services (BCEHS) by providing first responder services while the ambulance is en route. However, without any compensation from BCEHS, this trend imposes a significant burden on City resources. Though the City could consider not responding to certain levels of MESA calls, thereby not incurring the additional costs, this would not serve community residents or the Province of BC well.

In 2012, the City submitted a motion to the Union of British Columbia Municipalities (UBCM) which was considered at the Annual Convention and endorsed by the delegates, to request that the Province of BC work with UBCM to develop a fair and equitable cost recovery model to compensate local governments for responding to MESA calls (see Attachment 1). Langley City Council met with the Minister of Health and the Ministry's staff at that time, and have at almost every UBCM Convention since 2012, to seek their support of our motion.

Background

Fire stations are strategically located in communities and are often in a position to respond and provide medical care to the public prior to arrival of an ambulance. In high acuity patients, this intermediate patient care can greatly enhance patient outcomes. Fire departments participate in the EMA First Responder (FR) program voluntarily and receive no direct financial assistance from the British Columbia Emergency Health Service (BCEHS) or the Provincial Government. Locally, EMA (FR) calls are called Medical Emergency Service Alarms or MESA calls.

The Provincial Emergency Health and Services Act requires that those participating in pre-hospital care as Emergency Medical Assistants be licenced. Most fire

departments choose to provide the EMA (FR) level of Emergency Medical Assistants licences.

EMA (FR) vs. EMR Standards:

Members of the LCFRS are trained to the EMA (FR) standards and they are endorsed to assume the following care:

Standard Endorsements	Additional Endorsements
<ul style="list-style-type: none"> • Scene assessment • Vital signs • Patient assessment • Basic wound care • Fracture management • Basic airway management • CPR 	<ul style="list-style-type: none"> • Oral airways, oral suction, ventilation – oxygenation, pocket mask, bag valve mask • Spinal immobilization • Treatment of hypoglycemia with oral glucose • Emergency childbirth • Automated external defibrillation

Some municipalities have been advocating to the Province to allow their firefighters to be endorsed to provide the care under the Emergency Medical Responder (EMR) standards. The EMR standards include all services under the category of EMA (FR) listed above as well as:

Standard Endorsements	Additional Endorsements
<ul style="list-style-type: none"> • EMA (FR) standards • Cervical collar application and spinal immobilization • Patient handling, packaging and transporting skills • Blood pressure by auscultation/palpation • Emergency fracture immobilization • Soft tissue injury treatment • Administration of semi-automatic or automatic external defibrillator • Airway management 	<ul style="list-style-type: none"> • IV maintenance • Pulse oximetry • Medication administration using PO, SL and inhalation routes: <ul style="list-style-type: none"> ○ Narcotic antagonist ○ Anti-anginal ○ Analgesic ○ Anti-hypoglycemic ○ Platelet inhibitors • Chest auscultation • Insertion and maintenance of a nasal airway • Use and interpretation of a glucometer

It should be noted that Fire departments are not licensed to practice EMR standards. Rather, it is individual firefighter who are licensee of EMR certification and they practice within the scope of their own licence.

MESA Call Dispatch:

British Columbia Emergency Health Services (BCEHS) response to medical emergencies is guided by a response model called the Clinical Response Model (CRM). This model was implemented as of May 30, 2018, replacing the Resource Allocation Plan (RAP), which assumes ambulance transport for every patient. The number of MESA calls has been declining since the implementation of the CRM with 2,514 calls in 2017, 1,913 calls in 2018 and 1,808 calls in 2019.

The CRM uses a colour-coding system with some similarities to the colour system used in hospitals (see chart below). The CRM provides six categories (vs. RAP's three) for assignment of resources for both emergency and non-emergency calls.

The BCEHS dispatcher uses triage questions to classify the patient's condition and situation into different chief complaint protocols ranging from abdominal pain to unconsciousness.

The CRM allows the BCEHS dispatcher to provide appropriate resource response to the patient's illness or injury as categorized by the Medical Priority Dispatch System (MPDS) code. In some cases, this will be a Basic Life Support (BLS) ambulance, with lights and sirens response (Hot) along with First Responder and air ambulance backup. In other cases, the patient is allocated a BLS ambulance running routine (Cold) to the patient. The CRM provides the most appropriate medical response for the patient based on the information received.

CRM Colour Coding classifies patient acuity ranging from Purple to Blue calls. Purple calls are the highest priority and usually indicate an immediately life-threatening illness or injury, Red and Orange calls which are serious but not life-threatening, and finally Yellow, Green, and Blue calls which are neither serious nor life-threatening. Each CRM Code can have a different response priority level.

Patient Condition	Colour
Immediately life threatening (Eg. Cardiac Arrest)	Purple
Immediately life threatening or time critical (Eg. Chest Pain)	Red
Urgent / Potentially serious, but not immediately life threatening (Eg. Abdominal Pain)	Orange
Non-urgent (not serious or life threatening) (Eg. Sprained Ankle)	Yellow
Non-urgent (not serious or life threatening). Possibly suitable for treatment at scene ** NOT Being implemented immediately	Green
Non-urgent (not serious or life threatening) Further clinical telephone triage and advice Referrals to HealthLink BC (8-1-1 calls)	Blue

For the highest acuity calls, BCEHS is supported by partner agencies that provide first responder services to give basic first aid to the patient while the ambulance is en route. The CRM indicates which colour codes should alert first responders and this notification is mandatory on every indicated call. Some agencies provide a response to all calls in this category and others provide a response to only a portion of the calls - for example: just chest pain calls. All calls are sent by BCEHS dispatchers to the first responder agency's dispatch centre where requests are screened and BCEHS is informed if first responders are attending.

Typically, the LCFRS would respond to all Purple and Red calls as well as other color category calls based on delayed ambulance response or need for special equipment such as in the case of a Motor Vehicle Accident, forced entry needs into a building, or lifting assistance for a patient.

Listed below is an example of the LCFRS response breakdown for the twenty-four-hour period for March 31, 2021.

CAD Response Type	No. of Incidents
CONTAINER/GARBAGE FIRE	1
LIFT ASSIST	1
MESA- Cardiac/Overdose ¹	3
MESA-RED	7
MISC/OTHER/SPECIAL/NOT LISTED	1
MVA RESCUE REQ	1
Total	14

EMR in Other Communities:

There are some First Responders who may decide to be endorsed to provide care under the Emergency Medical Responder (EMR) standards, especially in rural and remote communities with fewer or no paramedics trained to provide advanced care.

In the Lower Mainland, there are two municipalities that are currently providing EMR while others are transiting to EMR:

	EMR	In-Transition to EMR	Contemplating	FR
Delta	✓			
Dist. North Van	✓			
Burnaby		✓		
Coquitlam		✓		
North Van City		✓		
Pitt Meadows		✓		
Port Coquitlam		✓		
Port Moody		✓		
Vancouver		✓		
Mission			✓	
Chilliwack				✓
Langley City				✓
Langley Township				✓
Maple Ridge				✓
New Westminster				✓
Richmond				✓

¹ The MESA Cardiac/Overdoses would be considered Purple calls.

Squamish				✓
Surrey				✓

City of Delta

Enacted the “Delta Fire Regulation Bylaw No. 5855, 2001 Amendment (Ancillary Health Services) Bylaw No. 7426, 2015” to “assume the provision of health care to an injured or sick person that supports, supplements or complements, or that is related or ancillary to, one or both of the following (i) ‘Ambulance Services’, or (ii) Emergency Health Services’, including, but not limited to, ‘EMA FR Services’ and EMR Services’, until Ambulance Services, Emergency Services, or services provided by, from, in or through a Facility are willing and available to provide health care to that person.”

In Dr. Martha Dow’s December 2019 study entitled, Delta Fire & Emergency Services: A Review of the Emergency Medical Responder Program, it referenced that the cost for the City of Delta to implement this initiative was approximately \$180,000 over three years (2014-2016) and was distributed in the following manner:

- Licensing fees for 120 personnel (\$60,000);
- Backfilling for instructors and training and testing of members (\$90,000);
- Equipment and training material costs (\$20,000);
- Medical oversight (\$8,000); and
- Instructor training (2,000).

Additional, the City of Delta has allocated \$25,000 per year to enable EMR maintenance, medical oversight and equipment replacement.

Of the 3,119 incidents, out of 8,580 incidents, where EMR skills were used between June 15, 2015 and September 12, 2016, there were no formal complaints and no EMALB investigations. However, there were a small number of incidents discussed with BCEHS in regard to best practices indicating that the oversight protocols are providing important formative opportunities.

The implementation of the EMR program in June 2015 necessitated a significant undertaking in regard to training and licencing.

The EMR program has been a positive addition to the pre-hospital landscape in Delta. There are no indications that the implementation of EMR level certification of Delta firefighters has had any deleterious impact on patients or the system at large.

District of North Vancouver

The District of North Vancouver transitioned to EMR based on the following rationale:

- Ability to offer the public a higher level of care in trail areas where BCAS will not go;
- Ability to offer the public a higher level of care in a post disaster situation; and
- Ability to offer firefighters hurt on the job a higher level of care.

Analysis:

There is no question that First Responders play an essential role in the pre-hospital care system and in supporting BC Emergency Health Services (BCEHS) with the delivery of the quickest possible response to patients requiring time-critical care. The provision of EMR level of care by First Responders may improve patient care in certain jurisdiction based on a number of factors such as municipal vision, demographic, demographic changes, geography, service demand, cost of skills enhancement, emergency preparedness, and service delivery.

The Auditor General of British Columbia published an independent audit report in February 2019 on [Access to Emergency Health Services](#) and referenced that BCEHS is responsible for the delivery, coordination, and governance of emergency health services, including call intake and dispatch. Paramedics provide emergency health services at the scene, en route by ambulance to hospital, and during patient transfers between hospitals. First Responders, with the consent of BCEHS, provide basic life-saving interventions at the scene as part of a coordinated response.

The Auditor General also noted that BCEHS is in the midst of a transformational change of its service to better match its resources to patient needs. This includes an increase to the number of paramedics and ambulances as well as the introduction of a new dispatch approach, with the goal of shortening response times for patients who need the most care. BCEHS is also pursuing alternatives to traditional emergency response for patients who do not require transport to hospital. This includes options such as providing medical advice over the phone, transporting patients to a health service, such as a clinic, or having a paramedic provide treatment in the home or community.

We support the recommendation in the Auditor General report that BCEHS needs to increase the number of paramedics and ambulances, as well as the plan to introduce a new dispatch approach to shorten response times for patients who need the care most. It is our position that First Responders should only be supporting, and not assuming the role of, paramedics in providing effective access to emergency health services.

We support the notion that the pre-hospital care system requires improved coordination with fire departments to support consistent application of medical standards, information sharing, an integrated dispatch system, and improvements to patient care. In other words, the goal is for fire departments to be integrated into the pre-hospital care system with adequate support (e.g. training) and resources (e.g. cost recovery) from BCEHS in order to achieve this goal.

BUDGET IMPLICATIONS:

The annual operating and capital budget for the LCFRS over the past five years is illustrated below:

Operating Program	2016 Budget	2017 Budget	2018 Budget	2019 Budget	2020 Budget	2021 Budget
Fire Administration	608,495	648,555	669,275	747,885	785,060	798,560
Fire Suppression	2,674,575	2,809,110	3,052,860	3,570,060	3,665,710	3,661,570
Training	202,030	206,940	212,550	218,240	242,830	250,600
Prevention & Education	154,445	161,170	169,680	185,460	190,500	195,010
Equipment & Building Maintenance	222,810	235,520	235,950	245,190	273,400	291,440
Fire Dispatch & Communications	96,070	196,350	196,350	205,650	218,030	222,120
	3,958,425	4,257,645	4,536,665	5,172,485	5,375,530	5,419,300
Capital Program						
Capital Improvement Summary	544,500	212,000	255,500	325,000	535,000	936,000
Total Annual Budget	4,502,925	4,469,645	4,792,165	5,497,485	5,910,530	6,355,300

The annual operating budget for LCFRS has increased from \$3,959,425 in 2016 to \$5,419,300 in 2021, a 36.9% increase over a 5 (five) year period. The potential cost savings are not directly proportional to the percentage of reduction in responding to MESA calls because the major driver is fielding a four-firefighter platoon. However, if the number of MESA calls that LCFRS attended to was reduced, the firefighters could be redeployed to other duties such as business licence inspections and public education. In 2018, the City hired an additional three firefighters to deal with a significant backlog of business licence inspections and to maintain the minimum acceptable level of business inspections. This backlog is primarily due to the fact that the firefighters had to spend the majority of their time responding to MESA calls over the years. If LCFRS take on EMR standard calls, we may need to hire additional firefighters to respond to the current level of all calls and other necessary duties. There will be additional costs associated with implementing EMR program including licensing fees, backfilling for instructors and training and testing of members, equipment and training material costs, medical oversight, and Instructor training.

ALTERNATIVES:

None provided.

SUMMARY:

The percentage of Medical Emergency Service Alarm (MESA) incidents that Langley City Fire Rescue Service (LCFRS) has responded to over the past 15 years has been in the range of 70% to 79% of total calls, which has not only been a significant strain on our resources but has also adversely impacted our ability to carry out other required duties without increasing the number of firefighters.

In 2012, the City submitted a motion to the Union of British Columbia Municipalities (UBCM) which was considered at the Annual Convention and endorsed by the delegates, to request that the Province of BC work with UBCM to develop a fair and equitable cost recovery model to compensate local governments for responding to MESA calls. Langley City Council have at almost every UBCM Convention since 2012 met with the Minister of Health and the Ministry's staff to seek their support of our motion.

The City recognizes that First Responders play an essential role in the pre-hospital care system and in supporting BC Emergency Health Services (BCEHS) with the delivery of the quickest possible response to patients requiring time-critical care. However, it is the responsibility of BC Emergency Health Services (BCEHS) to deliver, coordinate and govern emergency health services, including call intake and dispatch. The First Responders' role within the pre-hospital care system should be providing basic life-saving interventions at the scene as part of a coordinated response and not to take over the role of paramedics.

We recognize that the provision of EMR level of care by First Responders may improve patient care in certain jurisdiction. The decision to transition to EMR is up to each jurisdiction and based on a number of factors such as municipal vision, demographic, demographic changes, geography, service demand, cost of skills enhancement, emergency preparedness, and service delivery.

The City supports the Auditor General of British Columbia's independent audit report on Access to Emergency Health Services which noted that BCEHS is in the midst of a transformational change of its service to better match its resources to patient needs. The City supports the recommendation that:

- BCEHS needs to increase the number of paramedics and ambulances, as well as the plan to introduce a new dispatch approach to shorten response times for patients who need the care most.

- The pre-hospital care system requires improved coordination with fire departments to support consistent application of medical standards, information sharing, an integrated dispatch system, and improvements to patient care.

It is our position that the goal for fire departments is to be integrated into the pre-hospital care system, with adequate support (e.g. training) and resources (e.g. cost recovery) from BCEHS in order to achieve this goal.

Respectfully Submitted,



Francis Cheung, P. Eng.
Chief Administrative Officer

Attachments:

1. Motion passed by City Council and endorsed by delegates at the 2012 UBCM Convention
2. 2007 to 2020 Calls Summary, Langley City Fire Rescue Services
3. Letter from the Mayor of Delta George Harvie to the Minister of Health dated March 10, 2021 regarding Emergency Medical Care in BC
4. [Access to Emergency Health Services](#), An Independent Audit Report, Office of the Auditor General of British Columbia, February 2019
5. Delta Fire & Emergency Services: A Review of the Emergency Medical Responder Program, University of the Fraser Valley, Martha Dow, PhD, December 2019

Attachment 1

**Motion passed by City Council and endorsed by delegates
at the 2012 UBCM Convention**

THAT City Council endorse and forward the following resolution to the UBCM for their consideration at the 2012 Annual Convention:

WHEREAS the number of First Responder or Medical Emergency Service Alarm (MESA) calls that the City of Langley responds to represents 75 percent of all calls received by the Langley City Fire Rescue Service (LCFRS);

WHEREAS the City of Langley and other local governments incur significant direct costs as a result of responding to MESA calls to complement the services provided by BC Emergency Health Service (BCEHS);

AND WHEREAS the intermediate patient care provided by first responders can greatly enhance patient outcomes and significantly reduce short term and long term costs to the overall health care system and the City of Langley acknowledges the community will benefit from the LCFRS supporting BCEHS to provide first responder services to the patient while the ambulance is on route;

THEREFORE BE IT RESOLVED that the Province of BC work with UBCM to develop a fair and equitable cost recovery model to compensate local governments for responding to MESA calls.

2007 to 2020 Calls Summary, Langley City Fire Rescue Services

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Fire	208	215	149	154	119	123	135	120	146	145	150	146	181	209
Alarms – No Fire	254	272	234	257	274	211	227	212	211	248	258	252	270	285
MESA (MVA included)	1,625	1,557	1,673	1,749	1,739	2,018	1,875	1,983	2,069	2,492	2,514	1,913	1,808	1,086
Rescue	35	35	24	24	28	11	16	9	8	15	4	12	6	5
Public Service	112	92	133	101	87	107	113	134	160	183	166	145	149	206
Hazmat	36	43	41	38	40	26	30	33	35	29	49	33	40	30
Mutual Aid	16	13	7	15	0	1	1	5	1	0	2	0	1	0
Other					45	55	42	62	43	94	91	86	85	55
Total	2,286	2,227	2,261	2,338	2,332	2,552	2,439	2,558	2,673	3,206	3,234	2,587	2,540	1,876
Overall Percentage of MESA Calls	71%	70%	74%	75%	75%	79%	77%	78%	77%	78%	78%	74%	71%	58%