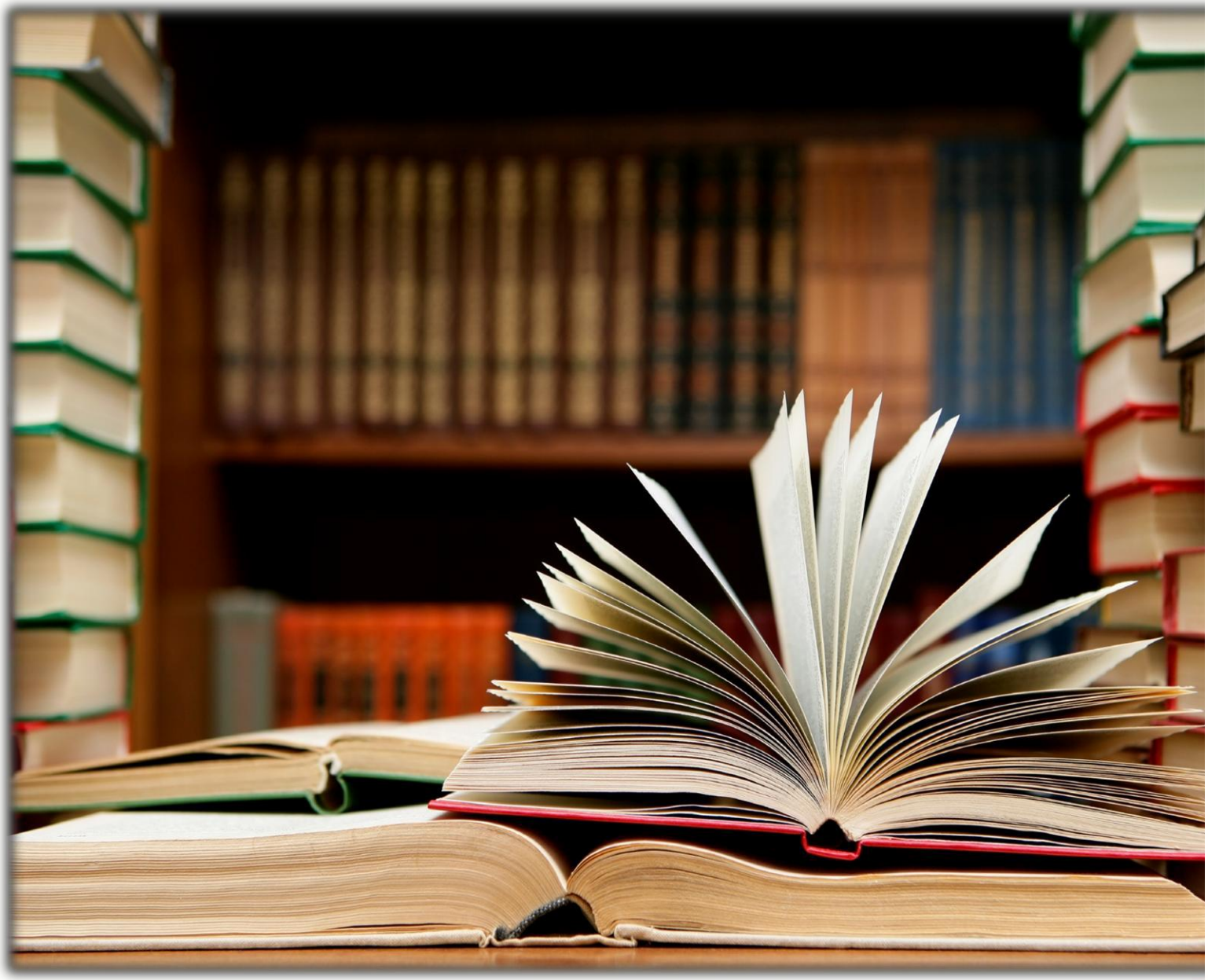
British Columbia Ambulance Service Resource Allocation Plan: An Analysis of Recent Changes to Call Codes



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OVERVIEW

On October 29, 2013, the BC Emergency Health Services (BCEHS) implemented a change to their BC Ambulance Service Resource Allocation Plan (RAP) resulting in 74 incident codes being downgraded to Code 2 (routine) calls instead of their previous designation as Code 3 (lights and sirens) calls. BCEHS has asserted that the changes were made to optimize the use of resources in a manner that prioritizes the allocation of resources based on the most emergent needs. According to BCEHS the process undertaken to make the changes involved a thorough review of over 630,000 patient calls with a focus on call outcomes to ensure that only those calls that warranted a downgrading to routine based on an outcome analysis were in fact downgraded.

In response to the changes there have been a number of concerns raised from various sectors including the fire service community. The primary concerns raised by the Surrey Fire Services are as follows:

- Inadequate consultation with the BC fire service community with respect to data collection and the framing of results;
- Inadequate analysis of claims that the downgrading of calls results in safer responses by lowering the number of calls being responded to with lights and sirens;
- Resultant increases in wait times for ambulances in cases that are upgraded based on FR initiative once on scene and those that remain Code 2 despite warranting a higher priority in the opinion of FR;
- Lack of appreciation of the role of FR in supporting positive outcomes in medical incidents; and,
- Inadequate conceptualization of patient outcomes that ends at emergency room hand-off of patient.

The purpose of this report is to provide an independent assessment of the data provided by the Surrey Fire Department with respect to response times pre and post implementation of these changes and concerns that have been raised and documented based on specific incidents.

DATA

The SFS incident data base was queried for all Medical (MESA) and Motor Vehicle Accident (MVA) incidents for a period of time 90 days prior and 90 days post October 28th, 2013 when the BCAS RAP changes were implemented. Of the total incidents in that data set (n=11675) only the cases that had clear incident start times as well as ambulance arrival times were

included in the analysis. These conditions resulted in a sample of 6,281 incidents being used for the analysis of response time changes.

One of the assertions being made to support the changes has been that by downgrading less serious calls, response times for more serious calls (Code 3) would be improved. Table 1 presents an analysis of Code 3 response times pre and post RAP changes and indicates that BCAS response times for Code 3 calls have been improved resulting in a reduction in FR wait times for BCAS to be on scene.

Table 1: Analysis of Code 3 Calls Pre- (n=2,822) and Post- (n=2,491) RAP Changes

Responder Times	Pre-RAP Changes		Post-RAP Changes	
	Average	90th Percentile	Average	90th Percentile
Surrey Fire Response Times	5:15	7:19	5:19	7:33
BCAS Response Times	10:20	16:55	9:51	16:05
Fire Wait Times for BCAS	5:05	9:36	4:32	8:31

Critics of the changes assert that serious medical events have been recoded to routine and therefore, one of the key concerns has been that wait times for serious medical events, irrespective of the official code that is applied (i.e. Code 3 or Code 2) would be increased. Table 2 presents data describing the calls that were recoded with the RAP changes and illustrates that average BCAS response times to these calls, previously Code 3, has increased by 6 minutes and 46 seconds.

Table 2: Analysis of the 74 Call Types Impacted by the BCAS Code Changes Pre- (n=839) and Post- (n=962) RAP Changes

Responder Times	Pre-RAP Changes		Post-RAP Changes	
	Average	90th Percentile	Average	90th Percentile
Surrey Fire Response Times	5:12	7:16	6:15	9:17
BCAS Response Times	11:05	18:34	17:51	32:23
Fire Wait Times for BCAS	5:53	11:18	11:36	23:06

Qualitative Complaint/Concern Data

An additional source of information that was examined for the purpose of this review were complaints/concerns documented by fire service crews in response to patient/family concerns about service and/or FR concerns based on the circumstances of the call. For the initial 90 day

period since the RAP changes 92 complaints from FR officers have been logged representing a complaint rate of 5.2% given the total number of Code 2 calls during this time has been 1774. A review of the Officer Detail Reports for these complaints indicates that the complaints fall into two main categories that by their nature are not mutually exclusive but rather classified by the most salient complaint characteristic. The complaints were categorized as follows: FR Upgrade of Call and Inadequate/Problematic Response.

FR Upgrade of Call: Once on scene FR requested upgrading to Code 3 and in the opinion of the reporting officers these were calls that should have been Code 3 from the outset. The cases outlined in the officers' reports describe the following kinds of situations: heavy bleeding; obstructed breathing; loss of consciousness; severe head pain; falls and accidents resulting in severe pain, neck pain, head injury with disorientation; and, spinal injuries.

Inadequate/Problematic Response: The primary theme in these complaints was a sense of inadequacy in the response of the BCAS. These cases included the following kinds of issues: slow response times; lack of communication with the FRs with respect to ETA information and patient information; inadequate information provided to 911 callers; diversion of ambulances without communication with FR; lack of urgency in assigning cars or upgrading based on additional information from FR; extensive wait times; delay in notifying fire of calls; and, citizens driving to hospital due to wait times. This category also included those cases that were characterized by a concern about the nature of the BCAS response and included: a non-response to an incident; disregarding FR transport information; inadequate assessment of patient upon arrival; inappropriate cancelling of fire support; and, rerouting in emergent situations.

This qualitative data is particularly important as it contextualizes some of the potential systemic problems in designating/coding of calls, communication between FR and BCAS, and the need to more closely examine the significance of FR care in medical incidents as it contributes to patient outcomes.

CONCLUSION

Based on the data made available for this analysis, since the changes implemented by the BC Ambulance Service in October 2013 there has been a doubling in wait times for ambulances responding to Code 2 calls and a slight improvement in wait times for Code 3 calls. It is important to examine the consequences of this shift in resources, particularly given what would appear to be the inappropriate downgrading of a number of more critical calls.

In the opinion of this author there needs to be a comprehensive assessment of the BCAS changes that is characterized by a transparent, comprehensive, and inclusive process. This examination would include a robust assessment of the need for the changes (i.e. evidence of public safety concerns and unnecessary Code 3 classification of incidents), the implementation of the changes (i.e. congruence of on scene assessment and initial call code, role of FRs in scene management, diversion of ambulances and resultant delays, review of inter-agency protocols), and the impact of the changes (i.e. changes in wait times, consequences of changes in wait times, relationship between FRs role and patient outcomes, measures of patient experience and outcomes on scene and post emergency room handover).

AUTHOR'S BIOGRAPHICAL INFORMATION

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