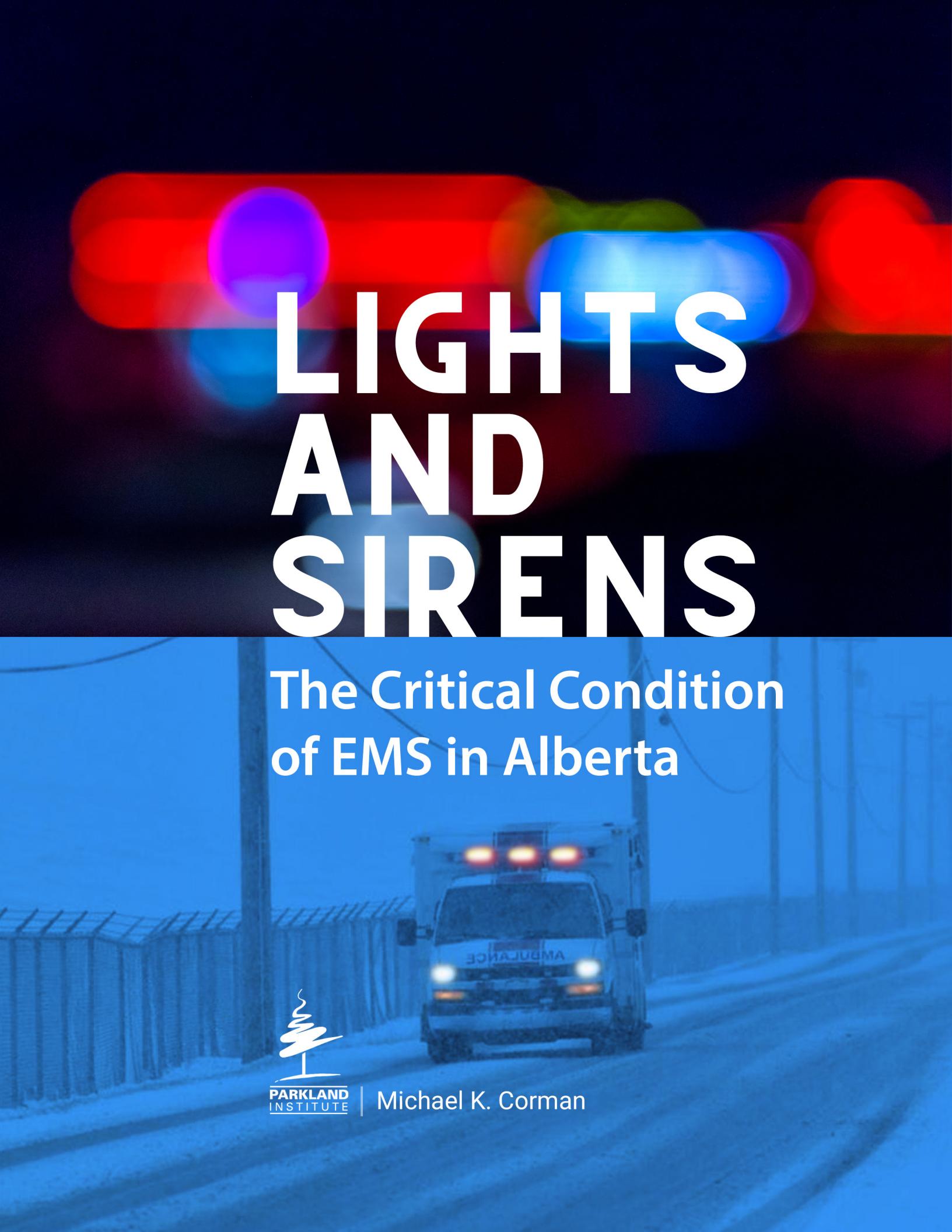

LIGHTS AND SIRENS

The Critical Condition of EMS in Alberta

PARKLAND INSTITUTE | Michael K. Corman

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Michael K. Corman

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About the Author

Michael K. Corman, PhD, is a medical sociologist and qualitative methodologist by training. He has held academic appointments in Canada, Northern Ireland, and Qatar. His teaching and research interests intersect with the sociological study of health, illness, and society. Michael's research has appeared in *Social Science & Medicine, Perspectives on Medical Education*, *Social Theory & Health, Symbolic Interaction, The Journal of Contemporary Ethnography, Qualitative Health Research, the International Journal of Educational Research*, and *Families in Society: The Journal of Contemporary Social Service*s, and in multiple edited book volumes. In 2017, Michael published a book by the University of Toronto Press entitled *Paramedics on and off the streets: Emergency medical services in the age of technological governance*, where he focused on health-care reform and restructuring practices and their consequences for frontline workers and their patients in the province of Alberta within the context of prehospital emergency medical services.

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Executive Summary

Nearly every minute in Alberta, paramedics are called to a potential emergency that may require the use of medical and pharmaceutical interventions, as well as a variety of psychosocial skills, to save lives and prevent further illness. Hence, paramedics and the work they do on the streets (in ever-changing and unpredictable environments) and off the streets (in hospitals and other facilities) are central to the provision of health care in Alberta. For many Albertans, paramedics are the first point of contact in the health and social care system in the province. Suffice it to say, paramedics are a key component of this system.

Prehospital emergency medical services and the workers central to the system — the paramedics — are in a state of crisis in Alberta. This is evidenced by increased rates of paramedic burnout/moral injury, staff retention issues, increased response times, increased number of code reds/red alerts" (which refers to instances where no ambulances are available for emergency calls for a specific community), and paramedics being "parked"/stuck in emergency departments. While SARS-COV-2 (hereafter COVID-19) and the opioid and overdose crisis (hereafter overdose crisis) have exacerbated the challenges experienced by paramedics in Alberta, the root of the current crisis dates back at least to the amalgamation of emergency medical services in the province in 2009.

Paramedics in Alberta deserve to be heard and listened to. They deserve to have policies and practices reflect their actual work practices. They deserve to work in an environment that promotes their wellness while allowing them to deploy their complex medical and non-medical skills to support patients in the community and, when necessary, transport their patients to a care facility in a timely manner.

This report explores the current state of affairs of prehospital emergency medical services in Alberta from the standpoint of those who live it, experience it, and breathe it on a daily basis. More specifically, it outlines findings from a study that explored how COVID-19, the overdose crisis, and other factors have impacted EMS in the province of Alberta.

In doing so, I aim to give voice to those who work on the front lines of emergency medical services, a voice that has been absent from how policy in Alberta is informed and developed. Hence this report, and the research that it is based on, aims to correct a major blind spot in how policy is developed in Alberta, contributing to how EMS in the province is reformed or transformed to better support the work of paramedics and those they care for both on and off the streets.

This study deployed an institutional ethnographic research methodology that focused on the lived experiences of paramedics and how their lived experiences and their work are socially organized. Semi-structured interviews were conducted with 29 individuals, including 27 Alberta paramedics, including Advanced Care Paramedics (ACP) and Primary Care Paramedics (PCP) that together represent over 400 years of EMS experience.[1]

Interviews were in-depth, lasting over one hour each on average, and focused on gaining a complex understanding of the work of paramedics, particularly in relation to how recent (e.g., COVID-19 and the overdose crisis) and historical (e.g., reform and restructuring practices) events have shaped and reshaped the work and experiences of being a paramedic in Alberta. The interviews also aimed to provide empirical evidence grounded in the everyday lives of paramedics that could support transforming EMS in the province.

Complementing this study, data from an institutional ethnographic study conducted nearly a decade ago was used to provide additional empirical depth and ethnographic nuance to the current EMS crisis. In addition to this primary ethnographic research, secondary research was conducted to explore how EMS in Alberta could be reimagined to better meet the current and future health and social care needs of Albertans.

The findings are separated into three sections. The first section explores the health care crisis from the standpoint of paramedics, highlighting the everyday lives of paramedics as they gave meaning to and experienced the current state of affairs of EMS in the province. In this section, paramedics discussed a multiplicity of intersecting elements that constitute the current crisis. For example, they spoke of a *lowering of standards* and a toxic work environment that made providing good care nearly impossible. They locate this lowering of standards within policies and practices primarily rooted in reform and restructuring practices that began in 2009 and have only gotten worse over time.

Paramedics also discussed an *erosion of key work processes* that are central to being a competent paramedic. This erosion of the ability to be competent was facilitated by a system that one-dimensionally focused on efficiency and the simplistic yet harmful ethos of doing more with less. This one-dimensional focus on efficiency increasingly resulted in limited resources being available to paramedics to respond to the demands of their work environment. The lack of resources and efficiency ethos had a cascading effecting on paramedics, as they were forced to "make out" in a system that was designed to "break" them.

1 According to the Alberta College of Paramedics (2023), there are three paramedic designations in the province: "Emergency Medical Responder (EMR), Primary Care Paramedic (PCP) and Advanced Care Paramedic (ACP). Each designation has education requirements and a standard skill level that must be demonstrated before being granted a practice permit by the College. The three levels are tiered, meaning each successive level incorporates and exceeds the competencies of the previous level."

Section 1 of the findings also draws attention to how *COVID-19 and the ongoing overdose crisis* were the metaphorical straw that broke the camel's back. For instance, paramedics drew attention to how COVID-19 made a problematic work environment even worse due to the unpredictable nature of the virus, fear of the unknown, ever-changing information, lack of appropriate personal protective equipment (PPE), and other factors. COVID-19, combined with the drug overdose crisis, increased system pressures in an already depleted system that had no capacity to respond to unplanned emergencies.

Section 1 ends with a focus on how these factors all resulted in a *decrease in morale and paramedic well-being*. Simply put, the EMS system caused considerable structural violence to paramedics, resulting in a dire state of affairs characterized by diminished joys of the job, classic descriptions of burnout and moral injury, and an overall sense of inability to cope with an EMS system that is neither patient nor provider-centred.

Section 2 of the findings dives deeper into the socially organized roots of the current crisis. More specifically, I focus on the historical context of the current crisis, with a focus on reform and restructuring practices that began in the 1990s and culminated in the 2009 reform – the "AHS Armageddon," as one paramedic described it.

The 2009 reform resulted in Alberta Health Services and the Government of Alberta assuming responsibility for most EMS in the province. Organized by neo-liberal styles of management and governance and facilitated by technologies of knowledge and governance, what resulted was a "command and control" style of organizing and governing EMS with hidden and not so hidden deleterious effects for paramedics and the EMS system as a whole.

Based on this research, it appears such consequences have only worsened over time as paramedics increasingly appear to be treated as "cogs" or "pawns" in a never-ending game of trying to garner efficiency out of an already very "lean" system. The analysis in Section 2 extends our understanding of Section 1 findings by exploring how the current crisis has been in the making for some time.

Section 3 offers an in-depth action plan where I offer 15 recommendations for change based on the lived experiences of paramedics and available evidence based on secondary research. Recommendations draw attention to the need to address both EMS-specific changes and changes more geared toward "upstream medicine" and the social determinants of health, which generally occur outside of traditional EMS.

Introduction

Prehospital Emergency Medical Services (hereafter EMS) are central and integral to the provision of health care in Alberta, both in its traditional form as emergency response paramedics providing prehospital services and transportation to a definitive health care setting (e.g., hospital) and in more community-based settings (e.g., community paramedicine). With a population of over 4 million (Statistics Canada, 2018) in Alberta, over 5,600 paramedics are called to over half a million emergency or transfer calls on an annual basis (Alberta Health Services, 2022a). This equates to over 1,300 calls a day, over 57 calls every hour, and nearly one call every minute.

Despite the vital role paramedics play in the health and social care system, it has been a decade since the most recent review of EMS in Alberta was released by the Health Quality Council of Alberta (HQCA), which included a series of recommendations to address the changing nature of paramedicine and its pivotal role in Alberta. Many of the challenges in transitioning from a municipally-managed service to a centralized, provincially-managed system were also identified in my book "Paramedics on and off the streets: Emergency medical services in the age of technological governance" (Corman, 2017), which explored the frontline work of paramedics in Calgary during this transition as their work was being reformed and restructured — often with "hidden" dangers.

Fast-forward to 2023, and such dangers are no longer "hidden"; rather, the limitations with how EMS are organized in the province have only been amplified as COVID-19, the ongoing overdose crisis, and other social forces wreak havoc on a system that is buckling under the strain.

The evidence is clear: EMS in Alberta is in crisis. Just consider this sample of recent news headlines:

- *Code red has become the new norm for Alberta EMS paramedics in some southern communities* (Wasney, 2022).
- *Calgary mayor says EMS dispatch is the reason for senior's death in dog attack.* (Franklin, 2022).
- *Airdrie paramedic suspended without pay following social media posts* (Cundy, 2022).
- *Alberta's ambulance response times have worsened from the start of the pandemic, data shows* (Easton, 2022).
- *Calgary getting new operations centre to address long ambulance wait times* (Randhawa, Grant, & Slack, 2022).
- *Opinion: EMS making changes to make sure ambulances are there when needed* (Sandbeck, 2022).
- *'It's destroying me as a person': Calgary paramedics say job is taking toll on mental health* (Anderson, 2020).

- *'Our staff is tired': Alberta's chief paramedic on how EMS is coping with spike in calls* (Smith, 2022).
- *Alberta communities ran out of ambulances 31 times last weekend, union warns* (Easton, 2021).
- *Alberta promises boost to ailing provincial EMS service* (Krause, 2022).
- *Calgary patients treated in ER hallways as paramedics needed for 911 calls* (Lee, 2022).
- *New ambulances won't fix bigger problems, says paramedics' union* (Ross, 2022).
- *'She was in a lot of pain': Woman waits six hours for ambulance after breaking hip* (Short, 2022).
- *More ambulance "red alerts" issued in central Alberta, as cold spell drives up emergency calls: AHS is working to improve the situation* (Michelin, 2022).

> *"The system is in 'ongoing crisis' mode, which is evidenced by the wait times at hospitals, increased call volume, and slower response times."*

These news reports draw attention to numerous issues currently facing paramedics in Alberta. "Code reds" have become the new norm in Alberta and exemplify a "broken" system with serious impacts on patients, paramedics, and our hospital system.

The increased number of code reds have resulted in trickle-down effects such as the thinning of EMS resources in communities throughout Alberta. Longer wait times for patients waiting to get an ambulance and delayed transfers to hospitals once ambulance crews have arrived, in turn, result in patients not getting "timely care." The system is in "ongoing crisis" mode, which is evidenced by the wait times at hospitals, increased call volume, and slower response times. The human cost to paramedics is increasingly visible as they appear to be "pushed to their limits" and "destroy[ed]as a person" by a "toxic" workplace, all resulting in "a high rate of sick time utilization," with some evidence pointing to how, "since 2015, overtime and sick time hours for Alberta paramedics have almost or more than doubled" (Le, 2022).

As Table 1 shows, the number of total sick time hours in the province have increased by nearly 50% from fiscal year ending 2018 to 2022. Sick time in 2022 represents a loss of over 22,000 12-hour paramedic shifts. When controlling for the number of full-time equivalent positions in EMS (Table 2), sick leave has climbed by 33% over the same time period. This human cost is not unique to EMS or to Alberta. Rather, the real-life costs to paramedics in Alberta can be viewed as a microcosm — as a canary in the mine — of how health care in Canada is socially organized.

Table 1: Total Sick Hours (EMS AHS)*

AHS zone	Fiscal year 2018	Fiscal year 2019	Fiscal year 2020	Fiscal year 2021	Fiscal year 2022
Calgary	72,616	73,091	77,025	92,306	115,101
Central	10,695	11,256	12,674	12,024	22,645
Edmonton	66,285	63,026	68,639	79,866	90,353
North	16,037	15,093	16,898	20,640	22,329
South	12,251	13,372	17,390	17,683	14,378
All EMS	177,884	175,838	192,626	222,519	264,806

Source: AHS FOIP 2022-G-204 made by HSAA to Alberta Health Services
*Casuals are not included in sick hours

Table 2: Sick Leave Controlled for Full-Time Equivalent (FTE) (AHS EMS)

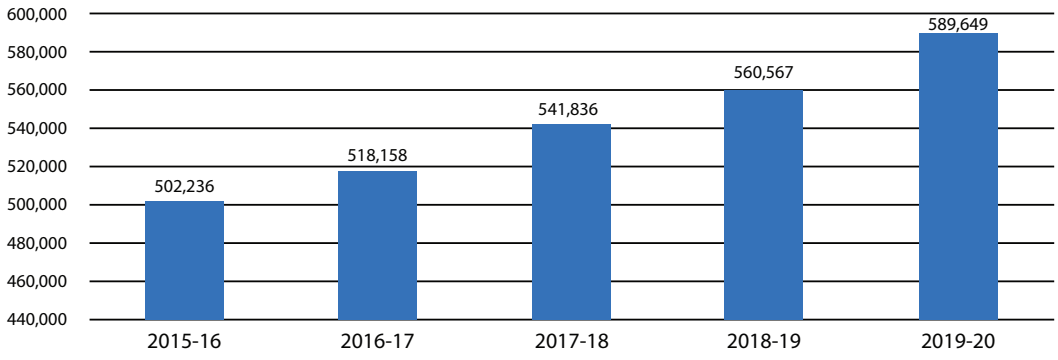
Fiscal year	# of FTE employees	Sick leave (all)	Sick hours per FTE
2017-18	1,965	177,884	90.53
2018-19	2,021	175,838	87.01
2019-20	2,061	192,626	93.46
2020-21	2,167	222,519	102.69
2021-22	2,192	264,806	120.81

Source: AHS FOIP 2022-G-204 made by HSAA to Alberta Health Services

According to the Statistics – Alberta EMS in Crisis

Figures 1 to 6 below aim to quantify the current EMS crisis in Alberta.

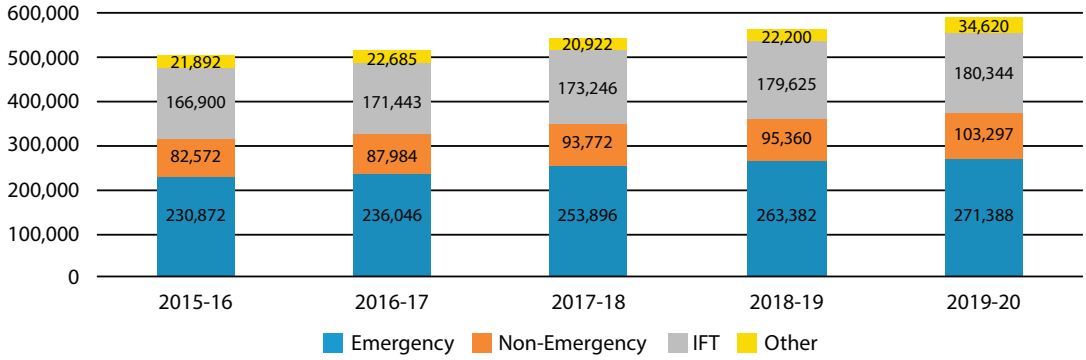
Figure 1: Provincial Event Volume (2015-2016 to 2019-2020)



Source: FOIP request # 2020-G-180 made by HSAA to Alberta Health Services (HSAA, 2021)

From 2015-2016 to 2019-2020, call volumes increased by 17%. More recently, "EMS has seen a 30% increase in call volumes in many areas, and all call types are increasing. With these high call volumes have come longer response times since last summer, and rising concerns about ambulance availability among many Albertans" (Sandbeck, 2022).

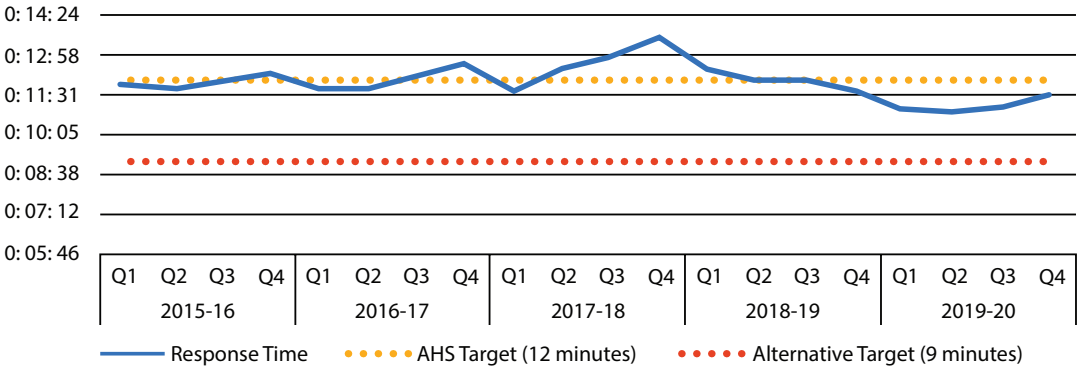
Figure 2: Call Volume by Call Type – Increase in the Severity of Calls



Source: FOIP request # 2020-G-180 made by HSAA to Alberta Health Services (HSAA, 2021)

According to Figure 2, "Emergency calls (highest priority) increased, on average, by 4.1% per year, Non-Emergency calls (second highest priority) increased, on average, by 5.8% per year, Transfer (IFT) calls (lowest priority) increased, on average, by 2% per year. In conclusion, the increase in calls is occurring in the most urgent types of calls" (Health Sciences Association of Alberta [HSAA], 2021, p. 7).

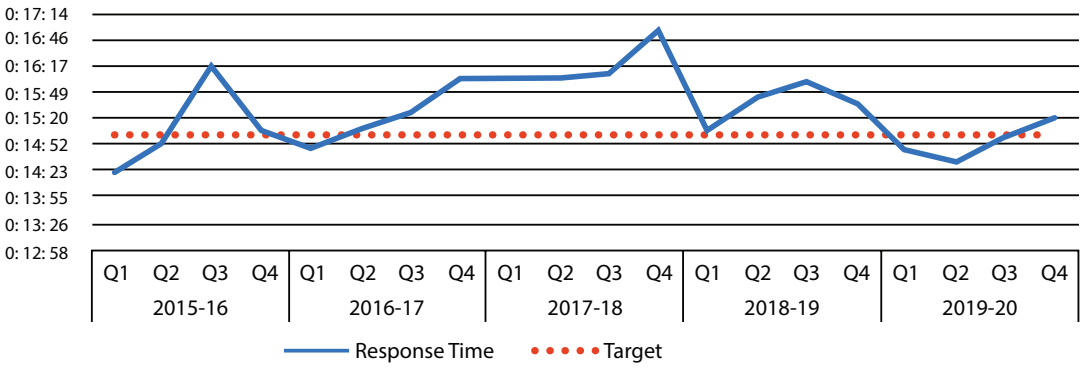
Figure 3: Response Times for Life-Threatening Events (Metro/Urban)



Source: FOIP request # 2020-G-179 made by HSAA to Alberta Health Services (HSAA, 2021)

Increased response times is an indicator aimed at measuring how long it takes paramedics to respond to a medical emergency once a call is received by dispatch. According to the Health Sciences Association of Alberta (2021), the benchmark for response times in metro/urban areas was changed from a nine-minute response time to a 12-minute response time, 90 percent of the time. Figure 3 indicates that, "had Alberta been under a nine-minute benchmark instead of a 12-minute benchmark, Alberta would not have met their benchmark in any fiscal quarter from 2015-16 to 2019-20. It is important to note that "[m]ost jurisdictions in Canada have a target of nine minutes or less at the percentile while the target in Alberta is twelve minutes" (HSAA, 2021, p. 12).

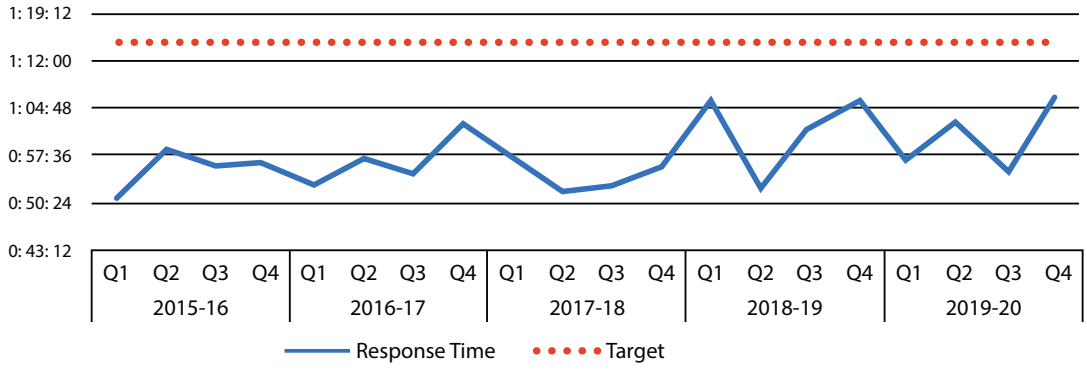
Figure 4: Response Times for Life-Threatening Events (Community 3,000+ Population)



Source: FOIP request # 2020-G-179 made by HSAA to Alberta Health Services (HSAA, 2021)

Figure 4 indicates how the benchmark of a 15-minute response time for life-threatening events in communities with a population of more than 3,000 individuals has not been met in Alberta in most quarters over the last five fiscal years, ending in 2019-20 (HSAA, 2021).

Figure 5: Response Times for Life-Threatening Events (Remote)



Source: FOIP request # 2020-G-179 made by HSAA to Alberta Health Services (HSAA, 2021)

Figure 5 indicates that while EMS in Alberta is meeting its target time of a 75-minute response time in remote settings for life-threatening events, this graph does illustrate an increase in response times over the last two quarters of 2019-2020 (HSAA, 2021).

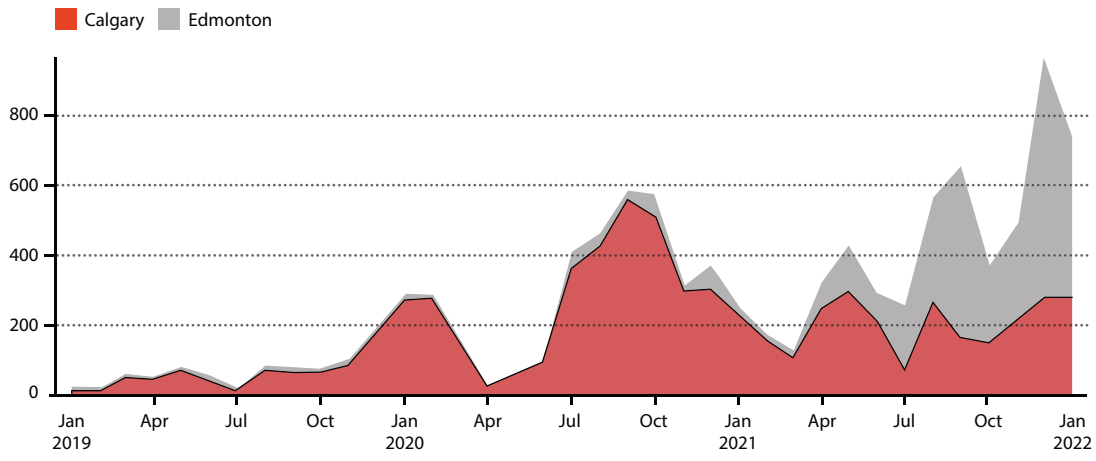
According to one news article, "Documents obtained by CBC News through a freedom of information request show Alberta's ambulance performance and response times have significantly worsened since the start of the pandemic" (Easton, 2022). More so, what is determined as suitable response times have changed since AHS has assumed responsibility for EMS. As mentioned above, when AHS took over in April 2009, there was a 9-minute response time benchmark in Calgary and Edmonton where ambulance crews were expected to get to the scene of an event from the time they were notified by dispatch operations. That benchmark is now 12 minutes in metro jurisdictions and 15 minutes in rural jurisdictions (Gerein, 2015).

In more remote sites, "the target for EMS response time for life threatening events (…) is 75 minutes at the 90th percentile" (HSAA, 2021, p. 11). According to a recent CTV News documentary on EMS in Alberta, "[l]ong response times of over 30 minutes, while rare, have grown…in the last 8 years [2014-2022], it's grown to 18% from less than 1%." Furthermore, the documentary points out that "[s]ome of the longest dispatch responses in Calgary this year [2022] ranged from 1 hour and 21 minutes to seven and a half hours for Delta and Echo calls."[2] This is not unique to 2022: "there were also long dispatch responses of more than six hours for emergencies prior to 2018" (Le, 2022).

2 According to Alberta Health Services (2022b), "AHS EMS Dispatch uses the Medical Priority Dispatch System (MPDS) to categorize calls according to the severity of the patient's condition and to dispatch the appropriate emergency medical aid. Calls are triaged into levels in order of increasing urgency," with Alpha or Omega calls classified as "non-emergency events" and Bravo, Charlie, Delta and Echo calls classified as "emergency events" (pp. 2-3).

Figure 6: Increased Red Alerts/Code Reds in the Province

Ambulance red alerts in Alberta's two largest cities



Note: January 2022 numbers are partial numbers, going only up to Jan. 12.
Source: Easton (2022)

Figure 6 depicts the increase in red alerts/code reds in the province between January 2019 and January 2022 in Calgary and Edmonton.

According to Easton (2022), "[t]he data show ambulance red alerts [otherwise known as code reds] — when no ambulances are available for new calls — increased from an average of 57 per month in 2019 to a peak of nearly 558 in September 2020. The average for 2021 was close to 200 red alerts per month." Furthermore, according to the above-mentioned CTV News documentary, "when there are no resources, red alerts happen. The numbers in Calgary have been growing over the years, even before the pandemic hit. The number of red alerts in Calgary almost tripled between 2017-2018 and this year [2022], the average number of red alerts per day is 15 compare that to 6 red alerts a day the year before" (Easton, 2022).

"By giving voice to those on the front lines of EMS and understanding how their work is organized by a multiplicity of forces, this report aims to correct a major blind spot in how policy is developed in Alberta."

A better understanding of the current state of affairs of EMS in Alberta is warranted to explore how COVID-19, the overdose crisis, and other factors have impacted services and supports in the province. Particularly needed, and apparently absent from how policy in Alberta is developed, is a detailed understanding of how the work processes of paramedics are organized, how paramedics give meaning to their workplace context, and what is and is not working well from the standpoint of Alberta paramedics.

By giving voice to those on the front lines of EMS and understanding how their work is organized by a multiplicity of forces, this report aims to correct a major blind spot in how policy is developed in Alberta and, therefore, aims to contribute to how EMS in the province can be reformed or transformed to better support the work of paramedics and those they care for, both on and off the streets.

Methodology

In order to explore the current state of affairs in EMS in Alberta from the standpoint of paramedics, a qualitative research design informed by an institutional ethnographic methodological approach was utilized. Qualitative research is particularly well suited to study the current state of affairs of EMS in Alberta from the standpoint of paramedics because such approaches to inquiry "provide the means by which to explore and explain people's experiences in ways that cannot be captured by quantitative methods or reported by statistical data" (Hills, 2000, p. 4).

Such approaches to social scientific inquiry aim to do so by systematically exploring "how things work" based on how individuals give meaning to the social phenomenon being explored (Carter, Ritchie, & Sainsbury, 2009, p. 106). Key to qualitative research is locating meaning in the actual experiences of those who live it, breathe it, and experience it. As Denzin and Lincoln

(2005) explain, "[t]his means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them" (cited in Creswell, 2007, p. 36).

Institutional ethnography (IE) was used to complement this focus on lived experience and meaning-making and to connect the complex work people do with how their work is socially organized. Developed by Dorothy Smith (1987, 2005; Smith & Griffith, 2022), IE is a methodological approach aimed at exploring what people do — their work broadly conceived — and how their work is socially structured or organized by the context in which it occurs. In other words, institutional ethnographic forms of inquiry provide both theoretical and methodological tools to explore "how things work" from the standpoint of those who are the subjects of the inquiry. As Smith and Griffith (2022) explain, "we have to *learn from* people about what they do and how they go about it" (p. 13) but always in light of "what the institutional relations are that coordinate them" (p. 15).

Semi-structured interviews were conducted with participants and focused on gaining a complex understanding of the work of paramedics, particularly in relation to how recent events (e.g., COVID-19, the overdose crisis, and other relevant events/factors as identified by participants) have shaped and reshaped their work and experiences of being a paramedic in Alberta. Questions were also geared toward identifying policy and practice implications to support reforming and transforming health care in Alberta.

> *"Overall, the sample represents nearly 450 years of experience on the front lines of EMS."*

A key focus of this research was to explore how the contemporary experiences of paramedics in Alberta are and have been shaped and reshaped by broader institutional, social, and historical forces, particularly in relation to EMS transitioning from a municipal/regional service into a provincially run service. In order to better understand how the work and experiences of paramedics are organized, interviews explored the "institutional forces" that shape the "everyday" of paramedics (Corman, 2018a).

In total, 29 individuals were interviewed for this study, including 27 paramedics[3] and two other individuals whose work interfaced with the work of paramedic (one individual with knowledge of dispatch operations and an individual who worked with paramedics in Alberta and had knowledge of union issues).

The average age of paramedic participants was 40. Interviews on average lasted 79 minutes (1.32 hours) and ranged between 47 and 116 minutes. Of paramedics interviewed, 18 were men and 9 were women, 21 were employed full-time, two were part-time, and four had left EMS. The majority of participants worked in urban settings (n=16) and were Advanced Care Paramedics (n=20). On average, those interviewed had over 16 years of experience being a paramedic. Overall, the sample represents nearly 450

3 While paramedics interviewed varied in levels of training (e.g., ACP vs. PCP), in the findings in this report I use *paramedics* to refer to both levels of training, unless otherwise specified.

years of experience on the front lines of EMS, most of which occurred in Alberta.

Participation from Alberta Health Services and Alberta Health was sought numerous times. Initial responses were promising, with one individual agreeing to participate. However, leading up to the interview, I was informed they were "advised that AHS will not be participating in this study." Other individuals in government were approached as well; however, I was informed by one individual that "Alberta Health will pass on being a formal participant in this research undertaking. However we would be very interested in any updates and results as they are prepared. The results will be of particular interest given the range of initiatives underway or planned to address the current EMS pressures." A list of questions was also emailed to individuals at Alberta Health Services and Alberta Health, with no response.

This study was approved by the University of Alberta's Research Ethics Office and all participants went through an informed consent process. In order to ensure the confidentiality and anonymity of participants, key identifying information has been hidden (e.g., sex/gender, age, location of employment, etc.) or changed. The names of participants are not used to further protect their identity. This is particularly important given the context in which this research was conducted, mainly a "culture of fear" that was expressed by many paramedics interviewed, whereby participants were worried about the consequences of speaking about their experiences.

Table 3: Demographic Profile of Participants

Number of participants	**Average length of interviews**	**Average age** (paramedic participants)	**Urban/rural** (paramedic participants)	**Employment status (full-time/ part-time)** (paramedic participants)	**ACP/PCP** (Paramedic participants)	**Years of experience (average/total)** (paramedic participants)
N=29	79 minutes	40	16/11	21/6	20/7	16/448

While the primary findings presented below are drawn from the aforementioned research, it is important to note that the data and analysis that follows is supported by an institutional ethnographic study I conducted in Calgary EMS around ten years ago (see Corman, 2016, 2017, 2018a, b, 2021, 2022). This older study consisted of two interfacing phases of research. Phase 1 included over 200 hours of participant observations of paramedics during 34 separate ride-alongs over an 11-month period. In addition, 115 interviews with paramedics were conducted during their "downtime."

For phase 2, 36 interviews were conducted, half of which occurred in the dispatch centre (e.g., call-takers, dispatchers, and managers); the other half included two managers of paramedics (one was an acting manager) and their manager, two medical directors (emergency physicians), two individuals responsible for performance management and improvement, two teaching and learning specialists and their manager, an individual who worked closely with the electronic patient care record, an individual who worked closely with dispatch technologies, two triage nurses, and three persons who worked in EMS simulation (one of whom was interviewed twice).

While the mainstay of the analysis below relies on the research that was conducted specifically for this project, in order to better understand how the contemporary experiences of paramedics in Alberta have been shaped by broader institutional, social, and historical forces over time, this older study is relied upon to complement and add depth to the current study.

In addition to conducting primary research with paramedics and those whose work interfaces with paramedics, an extensive literature review was conducted to support the evidence-based policy recommendations that are part of this report. The literature review focused on exploring the following questions: 1) How can EMS in Alberta be reimagined to better address the "upstream" health care and social needs of Albertans? 2) What national or international evidence-based strategies are available for adapting and evolving EMS to meet current and future needs of Albertans?

Data Analysis

The analysis below aims to draw attention to the complex work of paramedics within the context of COVID-19 and the overdose crisis, and how the work paramedics do is socially organized. Focusing on work is important as it draws attention to, "just how things are actually getting done" (Smith & Griffith, 2022, p. 11). This focus on what is actually happening on the front lines of EMS is often displaced and subsumed by what I call institutional ways of knowing, which tend to be simplified, one-dimensional, and quantified views of everyday work/happenings based on discursive versions of "what counts" to the institutional setting doing the governing and accounting.

The analysis in this report also aims to draw attention to how the work of paramedics is socially organized or why it "take[s] the form that it does" (McCoy, 2006, pp. 112, 116). As such, the findings below offer empirical evidence that is grounded in the everyday lives of those on the front lines of EMS in the province of Alberta. It is important to note that many of the participants used strong language during our interviews. Rather than viewing this language as unprofessional, this strong use of language should be interpreted as representative of the extreme emotion and degree of stress and frustration being expressed.

Findings

"Crisis" is one of those words that can mean anything and everything. As noted above, the discussion of an EMS crisis has been highlighted by the media in Alberta for years, with a particular emphasis on code reds, slower response times/lack of timely responses, increased call volumes, etc.

> *"It is quite clear from these interviews that paramedics agree that EMS in Alberta is in a state of crisis."*

In this study, paramedics described the system as "failed," "broken" (P2), a "dumpster fire" (P15, P25), and a return to the "dark ages" (P11) due to staff shortages and increased burnout rates[4], combined with increased call volumes — it has "never been so busy" (P27). As a result, the EMS profession in Alberta is in a "bad state" (P25), and it is quite clear from these interviews that paramedics agree that EMS in Alberta is in a state of crisis.

News articles paint one picture. Examining the everyday lives of paramedics paints another. While the former provide broad and generalized strokes of an EMS system in crisis, examining the everyday lives of paramedics as they give meaning to and experience this crisis provides a more complete and complex picture of the current state of affairs in EMS in Alberta.

The study's findings are presented in three sections. In the first section, I draw attention to four different, albeit intersecting, elements of what constitutes the current "crisis" for paramedics and how that crisis is embodied: (a) the lowering of EMS standards, (b) the erosion of key work processes, (c) COVID-19 and the overdose crisis, and (d) decreased paramedic well-being and morale. In Section 2, I examine how the current crisis is socially organized or "put together." In Section 3, I offer avenues of change based on the insights from paramedics themselves.

Section 1: Anatomy of a Crisis

Lowering of Standards

What does the "crisis" look like from the standpoint of those on the front lines? Paramedics drew attention to a multiplicity of ways they are experiencing the crisis. They spoke of *lower standards*, for example, as making it nearly impossible to provide good care. The lowering of standards was made visible in multiple ways, such as a lack of training — "training is a joke" (P7) — which is essential not only to ensure clinical skills remain sharp but also to make individuals aware of jurisdiction-specific policies and practices.

4 "Burnout is defined by the presence of one or more of three cardinal symptoms: 1) emotional exhaustion, 2) depersonalization, or 3) a sense of reduced personal accomplishment" (Lewis et al., 2020, p. 95).

Connecting to this is how paramedics spoke about a lack of mentorship — "We're not providing staff with adequate preparation or mentorship to be able to do the job in the way that we expect them to" (P23) — which, as one participant explained, "crash[ed]" when AHS took over (P4). One paramedic described it as follows:

> Not to get political in any way, but I noticed a difference in how we were treated with regarding what we had with an NDP government versus now ... The cuts that we get like our equipment is sh**. It's all falling apart. Our ambulances are sh**. I don't know if anyone's told you about the off-gassing issues that we're having now but my colleagues are literally having to go to the emergency room on shift for…poisoning. (P17)

Cutting corners in the name of savings or efficiency decreases the quality of care patients receive and increases the potential for committing errors. Many paramedics, for example, described being too busy to clean and do safety checks at the beginning of their shifts or when they get a new ambulance. Not having the ability to check their truck and prepare it for their work on the streets — what I call the work of "titrating the rig" — is essential to how paramedics "practice their medicine" and inevitably connects to patient safety and quality of care (Corman, 2018a, p. 54).

Some paramedics described how the trucks are "overdue" for safety checks and, simply put, "are a disaster" (P7). Having a safe place to work inevitably connects to the health and safety of paramedics and the quality of care patients receive. Poor working conditions are a central component to moral injury and burnout for those on the front lines of health and human services. Interviewees also described how they do not have the time to fill out paperwork properly, which can have a significant impact on the continuity of care once patients are transferred to a hospital setting.

Others described how specific policies led to a lowering of standards, which were "distressing" (P3) for many paramedics. One example provided by paramedics was the mandatory download policy, which created significant tension:

> They have introduced a mandatory download policy in the hospitals to try to clear up ambulances ... So, if we have no ambulances, our bosses will call the hospitals and say, 'Give all the ambulances beds, or accommodate them.' But I actually find that to be distressing more than helpful for us … I've seen nurses that I've known for years cry because they don't know what they're gonna do with the super sick patients that they don't have any room for. People have died in the waiting rooms. I've put an actively homicidal guy … into the waiting room, and

> he told me that he wanted to stab one of the peace officers … But the policy is the policy, and my boss told me to do it. So I did it. I don't know what ever happened but I found that to be really distressing … I put him in there. I put him in a position where he could do those things … And the really sick ones are the ones we bring in sometimes. They need somebody to be there taking care of them. A lot of them can't walk. A lot of them are having heart problems or what other problems. You can't just leave them in a chair so the hospital will either put them in a waiting room, or they'll put them in a hallway on a stretcher with a hospital staff member. It sucks. So you, you get that moral injury, right? And the moral injuries have really stacked up this year.

While policies like the one described above allow an ambulance crew to be released to the streets, a lowering of standards occurs due to crews being forced to abandon their patient without ensuring continuity of care, which undermines their own professional standards and codes of conduct while dually causing "moral injury," all to accommodate systemic limitations.

"Areas of the province are left with limited EMS coverage, and many of the paramedics who get sucked into city centres are 'not trained to work in the city.'"

Other paramedics with experience working in rural areas discussed how they would often get "sucked in" (P19) from their jurisdiction to more urban centres in order to ensure ambulance coverage in the city. Many paramedics described how this is "really hard" (P25) as they had to watch their rural area fall apart as they were unable to "clear" (P16) out of the "blackhole" or "vortex" of the city centre, and hence assist their rural areas in need. This represents a lowering of standards as areas of the province are left with limited EMS coverage, and many of the paramedics who get sucked into city centres are "not trained to work in the city" (P16); they lack familiarity with policies and receive limited to no city-specific training. P16 went further on to explain:

> Yeah, it is, for one thing we're not from the city, we're not trained to work in the city. Like…there is specific training for these metro centers. I don't know the routes. I don't know what hospitals [are] most appropriate. I don't know that, you know, this is a dangerous area of town. You know, I don't know what resources are available. I don't know what social services are available. I don't know what radio channel to be on half the time, right ... If I go to [the city], not only am I responding to a call, but I'm trying to map across a city that I'm not familiar with and ask dispatch what radio channel to be on and ask what resources might be available ... So it's a really big cognitive load to suddenly be responding to calls in a big city with that kind of complexity that you're not familiar with or trained for.

Ultimately, the crisis for paramedics was also reflected in how the system made it challenging for them to provide good care to their patients as their capacity for empathy has been eroded — a tell-tale sign of burnout — by the toxic work environment. One paramedic, for instance, mentioned with regret how they "yelled at an old lady ... But I've always been known for my empathy and compassion with patients, and I've lost that" (P17). Other participants described how they lost "sensitivity" (P18) to patients, while others described how they began to "mis[s] obvious things" and expressed concerns that patients were being mistreated at times (P3). Another paramedic described how they have "turned into the kind of a person that I don't wanna be" (P6):

> Over the last two years ... work is, it's becoming less and less sustainable as a career ... As far as its toll on your physical and mental health is concerned, especially in the last two years, it's undeniable. I have seen, I have seen it firsthand in myself, where 'I've turned into the kind of a person that I don't wanna be. I've had to take more time off for myself: stress days, personal days, holidays in some cases, sick time … It's just, it's felt like a grind … a slog, and morale in EMS has certainly taken a dip. I have a lot of friends who have quit completely … Because if you care about the job and you care about the clients, and you care about serving the community, when the service that you're a part of fails to provide that care, um, it's hard. It's, it's really hard for you, and you can become quite bitter and quite miserable.

"The violence that the system is causing paramedics results in an erosion of professional standards with consequences for patient care and staff well-being."

Ultimately, the violence that the system is causing paramedics results in an erosion of professional standards with consequences for patient care and staff well-being. P11 succinctly summarized the current state of affairs when they said, there is "no pride in the patch on my shoulder."

Erosion of Key Work Processes

Other elements of the crisis were reflected in how paramedics described doing more with less: the ways in which key work strategies were being modified and/or eroded due to increased call volume combined with fewer available resources. For example, central to the work that many paramedics do and the quality of care they provide to their patients is what can be thought of as "convincing work" — convincing patients they are in need of transport to hospital (Corman, 2017, 2016).

This work inevitably connects to how paramedics orient the "what ifs" of their patients and settings as the work paramedics do is "predictably unpredictable" (Corman, 2016, p. 620). To the contrary, it appears that in light of the current crisis and the limited resources available to respond to

the crisis, patients are increasingly being demarcated into "good" and "bad" patients – "Now we are looking at patients saying, 'Did you seriously call 911 for this'?" (P18).

This entrenching of the supposed "good" patient in light of an overstretched system normalizes rationing of health services based on simplistic notions of what counts as deserving patients. This normalization also has the potential to dehumanize those seeking care while dually individualizing what are otherwise socially organized problems in health care.

While demarcating patients into those that are deemed deserving or not is not new, what is different now is that paramedics in Alberta are being given the institutional mandate to act on these demarcations. P11, for example, described the introduction of new policies, like "assess, treat, and refer" protocols that are geared toward allowing paramedics to defer transports for certain patients. However, these protocols were not accompanied by any training — "we never got trained on that" (P11) — or training that was provided was not sufficient. Introducing this new policy without adequate training has the potential for significant consequences:

> It's like, really the only time in my career that I'm essentially allowed to just say to people, 'I'm not taking you to the hospital' ... While I support paramedic-initiated refusals, I don't support it without a f**k ton of training, because it's not only [a] legal liability nightmare ... I don't wanna make a poor judgment call because I don't have the level of training and then cause harm to somebody else accidentally.

Whereas before, paramedics were mandated to transport patients to hospital, this change of mandate for paramedics is problematic; not only does the demarcation of what counts as a "good" or "bad" patient often fall along racialized, age, gendered, and class lines, limited resources/education to support paramedics in this shift likely erodes key work processes that ensure paramedics are competent.

Other work processes being eroded include the partner work — working with someone you are familiar with. It appears that increasingly, paramedics are having to "wor[k] with randoms" (P27) in order to ensure adequate coverage in light of limited resources. Having inconsistent partners results in trust issues and is "mentally tiring" as you have to do "two jobs at once" (P27).

> It's almost like putting two strangers in a room, and then saying get to know each other. And oh, by the way, you've got a cardiac arrest you have to go to ... It's just mentally tiring ... An analogy would be: You have a child that is self-sufficient, dresses themselves in the morning. You don't have to worry about

> choking on a hot dog because they're 8 or 10 years old kind of thing and then I switch that person with like a 2-year-old, where all of a sudden, you're just like holy cr**. I can't leave you alone for a second cause you're gonna get into something.

The paramedics interviewed also discussed how increased call volume without a concomitant increase in resources has resulted in the need to make up for the limitations of the system. In order to do so, key elements of their work processes, such as their "downtime" (the time between calls) were targeted: "They think that we just are not doing anything ... You get this impression that they're always thinking that we're just slacking all the time ..." (P5). This is done to garner supposed "efficiencies" and essentially fill gaps in a poorly resourced system.

This targeting of downtime can be traced to how ambulance utilization rates and "time on task has increased substantially" (P23) in the province. For instance, the Region of Waterloo Paramedic Services defines Unit Utilization (UU) as the "[p]ercentage of staffed vehicles utilized during any unit of time" (Region of Waterloo, 2021, p. 28). They also 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" (p. 28). The evidence in Alberta points to many ambulance units being run above the 40% threshold (AHS FOIP 2020-G-173), though in Alberta, it is unclear if this important statistic is collected consistently across all EMS zones and if it is used for quality assurance, continuous quality improvement, or for planning purposes.

"There is nothing 'down' about downtime; when paramedics are in between calls, they are still doing a significant amount of work."

Key work processes are connected to the availability of downtime. In other words, there is nothing "down" about downtime; when paramedics are in between calls, they are still doing a significant amount of work, whether it is training, cleaning, prepping for the next call, and, yes, taking a break in order to eat or go to the bathroom, or just chatting with your colleagues, which is essential for a sense of community and comradery (Corman, 2017), not to mention paramedics' emotional and mental well-being. As P5 explained:

> I feel like that downtime really allowed you to kind of you know, maybe you did a call, and it was kind of stressful. But then you had a couple, you know, an hour or two to kind of decompress from it. Right, kind of come down. Bring your heart rate down. Bring your blood pressure down. Maybe chat about it a bit with people. Go over some stuff, and there isn't that anymore. You don't have that time to decompress from that call ... You don't see people anymore to kind of hash out that call and so it just, it builds up, right, and … it's cumulative … You clea[r] and you immediately [get] attached to another [call] ... I came home and the first thing ... I got home ... I just

> unloaded on [my partner].

P19 further explains how down time is connected to having a sense of community. As downtime has been eroded to garner supposed efficiencies, "... there's less of like a team atmosphere," which erodes important work practices and processes, not to mention the joys of the job. Trust is also diminished, as P27 notes above, when familiarity is sacrificed in the name of efficiency.

Essentially, in a system that does not prioritize the health of its front-line workers, paramedics are forced to "mak[e] out" (Burawoy, 1979) with work strategies that allow them to continue on in their role, despite the violence caused to them by the system they are embedded within. For example, paramedics discussed how they had to "make our downtime" (P5) in order to get breaks and decompress after challenging calls, or simply be able to eat and go to the bathroom. Making your own downtime mainly included extending time in hospital but some paramedics described having to play the "stress leave card" (P5) in order to get a break. This work of making out also reflects the fact that paramedics have little to no autonomy or job control — "you feel a little bit like a toddler" (P5) — in their work environment; worker autonomy is a key element to the health and wellness of workers and satisfaction at work (Pfeffer, 2018).

COVID-19 and the Ongoing Opioid and Overdose Crisis

It is important to note that this crisis, from the standpoint of paramedics described above, was not caused by COVID-19. Rather, COVID-19 made a problematic work environment even worse due to a multiplicity of factors, including the unpredictable nature of the virus, fear of the unknown, ever-changing information, lack of appropriate personal protective equipment (PPE), having to modify work processes and practices, and the increased tension and stress due to growing call volumes and demands placed on other elements of the health-care system. As P4 explained, and supported by many of those interviewed, "COVID [was] terrible" (P4):

> For starters, it's a disease that the world didn't know very much about. And so the constantly changing information on how it was contracted, how to keep yourself safe … And everyone was learning on the fly. What were the symptoms? ... How should you be screening patients? What was the necessary PPE? … PPE shortages … And then … the rules would be different … Like the amount of, like, hourly flux … And then patients didn't understand and people were getting sick and you would have co-workers that were taking time off work … The amount of, like, panic, paranoia, misinformation, changing information. And then, when you look at PPE shortages, right? There was a period

> of about a year where a bunch of us, due to, because each person is unique, right? Your height, your weight, your facial structure is different so you can't just have one mask that fits everybody, and in the hospital they were like, "well, the little paper mask with the ear loops that you can buy in the box of 50 at Costco, like, that should be okay for dealing with Covid." But when they looked at it's you and me in a 10-by-12 box. Well … you need to have the N-95 on so in our industry. And [this] was almost my demise … And now, when you're talking, a lot of my coworkers would describe it as like, you're talking through a blanket, you're ... We couldn't talk [to our patients]. The dispatcher couldn't hear you through the radio … Your partner couldn't hear you. Your elderly dementia patients … who would try and reach up and pull it off of my face and you're like, you're contaminated with COVID, you can't touch me, much less pull my PPE off because then I'll be contaminated, right? And so there [are] huge levels of fear and anxiety and stress on top of this … This should be a simple, lift Mike up, nothing's broken, check his vitals … But it would be complicated ….

Added time, disrupted routines/procedures, and the inability to communicate properly with patients, paramedic partners, and dispatch operations, combined with ever-changing information and a lack of appropriate PPE and increased perceptions of risk exemplify the additional layers of complexity and uncertainty that only added to the already demanding work of being a paramedic.

Another element associated with the pandemic is how the public perception of frontline health workers changed. They went from heroes to those who experienced the caustic end of conspiracy theories and right-wing discourses that purported that the "freedoms" of individuals were being encroached upon by public health policy aimed at keeping individuals, including paramedics, safe. Many paramedics also linked this villainization to feelings of injustice and demoralization. Again, P4 explained the following:

> And then you have patients that, like, still to this day, routinely, I will be driving around the town, and I will just have people just like angrily flip me off, or toss coffee cups at the ambulance, because they're pissed off at the symbolism of AHS and us sitting in the cabs wearing our masks … So the fact that you can go to the grocery store without a mask on and cough all over the lettuce. And now the government doesn't even say you have to isolate, so as someone infected with COVID, you can still go to the grocery store without a mask, COVID-positive [and] cough all over the Advil ... [And then there's] a very nice family member who's trying to do their best for their

> immunocompromised family member … The rage! Like we would show up, and we would just be starting to get yelled at for showing up in a mask, and yelled at for making them put a mask on ... When you work at a hospital, a security guard can escort you to your car through the protesting lines. When it's you and me in a 10-by-12 box getting called to someone's house, there isn't a security officer to escort me and people feel a lot more righteously angry on their home turf. I come into your house wearing my controlling, fascist mask and glasses and gloves, and demanding that you in your own home put a mask on while I'm assessing you and the injustice of that … The amount of hate that has been directed towards me through the pandemic, and still is.

"In addition to the increased risk to their physical and mental health from COVID-19, paramedics also faced increased risk to their safety from a potentially hostile public."

In addition to the increased risk to their physical and mental health from COVID-19 and increased demands placed upon them by the pandemic as noted above, paramedics also faced increased risk to their safety from a potentially hostile public. P18 described a similar experience, and the added complexity of wading through misinformation and patient fears:

> I would have patients laying on their stretchers, asking me about my thoughts on the vaccine. And I would ask them, "Have you talked to your family doctor about it?" "Well, no, I saw this thing on the Internet" or I heard … [from] their farmer neighbor. And it would be like, "Well, okay, here's the one thing I'll say is the sickest people I've seen on my stretcher during this Delta wave have been unvaccinated. Not one person has been on my stretcher has been vaccinated. So I'll let you do your own, your own calculations or your own thought process." ... Some of them regretted their decisions.

Adding further complexity to the current crisis in EMS in Alberta, it appears that COVID-19 exacerbated the overdose crisis (Centers for Disease Control and Prevention, 2020; Frieson et al., 2021; Government of Alberta, 2020). P4 explained:

> So, the amount of patients that I would see who simply [are] not being able to go to an AA meeting three times a week, four times a week, seven days a week, not being able to access a zoom support mechanism because their financial situation — they didn't own a laptop, they can't afford Internet — you couldn't go to the library because of COVID. And so the rise in addictions, but the relapses in addictions that were getting by with the supports, right ... So maybe you and your minimum wage, or your job were able to get by, but without the supports of your alcoholic anonymous, you sink back into your alcohol.

> Now you can't pay your rent because you've sunk back into your addictions. There's no support from the government, you simply fall into homelessness, and then your next best thing is some sh***y, toilet-brewed Fentanyl, right. Like, it's [a] spiral effect.

Paramedics see the effects of the overdose crisis firsthand: "[I used to give] Narcan once a month…now I'm giving it once a shift, or twice…or three times a shift" (P2). Combined, the COVID-19 pandemic and the overdose crisis led to increased system pressures, which resulted in a cascading effect. Those two factors for EMS may be thought of as a non-standard variable that, at least due to COVID-19, resulted in ever-changing expectations and rules — "hourly flux[es]" (P4) — accompanied with not enough personal protective equipment and combined with feeling left alone and abandoned by AHS due to poor communication, especially during the beginning of the pandemic:

> AHS did like a really piss poor job of messaging, in terms of, like, creating policies for COVID. It was a f***king weird mishmash [of policies] and for the first few months of the pandemic ... I couldn't get any reliable information from AHS, because everything that I'd read, like, that they'd send out would just like sort of rehash the same thing, and it was never really clear what they were quite talking about. (P11)

As such, COVID-19 was described by many as the metaphorical straw that broke the camel's back or maybe thought of as a "triggering event" (Aupers, 2012, p. 40) that led to EMS in Alberta being in a state of crisis.

"Decreased morale and wellness of participants was visible throughout all of the interviews."

Decreased Morale and Paramedic Well-Being

Decreased morale and wellness of participants was visible throughout all of the interviews. However, this became particularly visible when the interviewees discussed the joys or positives of the job — what they liked about being a paramedic — and how these joys diminished over time. This included the desire to help people by, "[m]aking people's cr***y days better" (P3), "Get[ing] to make a person's sh***y day a little less sh***y" (P15), and "caring for people" (P17). Others described how they enjoyed being a "service to my community" (P14), the "problem-solving" (P3) aspects of their work, dealing with unique and "interesting" situations (P25), and being "a fixer of problems" (P27).

In speaking with paramedics about the joys of the job, it became quite clear that such joys had either "diminished" (P13) or disappeared completely. P12, for instance, explained how they "can't do the job I love." Essentially, many

paramedics interviewed described how they "used to love my job" (P17) but due to the issues describe above, they experienced a loss of joys, which had significant consequences for their well-being.

Paramedics described, for instance, how it was very hard to cope with a system on fire, with some expressing they were not able to cope at all — "I didn't" cope (P18) — or barely coping — "you're almost dead inside" (P27).

Similarly, paramedics described "giving up" (P2), "can't be bothered to care" (P3), and fear of "never gonna make it to 65 … No one gives a cr**" (P21). In fact, many of the paramedics interviewed seemed to be thinking about "throw[ing] in the towel" (P11) because "I don't care anymore" (P22). One paramedic described how "EMS broke me … soul crushing" (P9).

Alberta Health Services (nd-a) claims to "support our people." Many of the paramedics interviewed, however, adamantly disagreed that AHS achieved this. To the contrary, participants pointed out how there are "little resources" available to paramedics to cope with challenging calls (e.g., suicides), and the resources that are available do not appear to reflect the actual needs of paramedics.

Others described the lack of a human-centred work environment, where burdens were experienced due to a lack of basic necessities, like the ability to eat, take breaks, or even go to the bathroom, the inability to "get time off" (P14) or having to "figh[t] for time off" (P21), and being mandated to work overtime — "Just let me go on time, I've done my work" (P15) — after very long 12-hour shifts. In fact, P15 explained that "50% of my shifts end in involuntary overtime." Others described feeling as though they were being "held hostage" by the system:

> It's rather stressful … It sucks knowing, like, as soon as you leave a hospital, you're not going to be able to go to a station and have food or to sit down for five minutes to catch your breath; you know that there's a call waiting for you. You're not even gonna get off [at] the end of the hospital ramp [before] … you're going to be headed off again. Like that's, um, it's quite a unique feeling knowing … you're doomed. (P3)

Joys or positives of caregiving, or the lack thereof, are especially telling when they are absent or are becoming absent. The absence of joys is not only an indicator of burnout for the individual (Corman, 2009) but also an indicator of a system in crisis. In the interviews, there was a stark contrast between, on the one hand, what paramedics enjoyed about their jobs and, on the other hand, the system that organizes their work in ways that prevents them from experiencing such joys.

A focus on practitioner well-being is important but often ill-considered

operationally. Not only is the well-being of practitioners important for the sustainability of the system, but we also must recognize the symbiotic relationship between the well-being of paramedics and those they tend to (their patients). In other words, paramedic burnout and related retention issues contribute inevitably to limited resources (e.g., not enough paramedics to staff ambulances), which in turn contributes to further paramedic burnout/retention issues. P16 stated the obvious when they said, "you don't have to hire more people if you retain the people you have."

If the work of paramedics is "not organized by or oriented to professional codes and … standards, what is its organizing principle or focus?" (Rankin & Campbell, 2006, p. 49) This was a question I found myself asking time and time again as I was listening to paramedics recount their experiences leading up to and during COVID-19. The next section explores how the experiences of participants occur within and are organized by ongoing social and historical processes (see Smith, 2005).

Section 2: Roots of the Problem

The lowering of standards, the erosion of work processes central to quality of care and patient safety, the added demands and complexities associated with COVID-19 and the overdose crisis, combined with a general deterioration in their work environment leading to a lack of joys on the job and a deterioration of paramedic well-being — all of these were key elements to the crisis experienced by paramedics. It is important to note is that this current crisis was in the making for some time and therefore is "not new" (P2). As P12 explained, "It's really funny to see us on the CBC News now. It's almost like this emergency hasn't been happening for the last decade" (P12).

> *"Disasters or crises do not occur in social vacuum but are organized, in part, by the social context in which they occur."*

What are the roots of the crisis currently being experienced by paramedics? This question assumes that disasters or crises do not occur in social vacuum but are organized, in part, by the social context in which they occur; crises are social through and through. As Aupers (2012) writes:

> Risk builds up over time as a consequence of long-term and ongoing social, political, and economic processes that characterize societies and communities around the world. These are the processes that produce physical and social vulnerability—the potential for harm and loss—that is realized when a triggering event strikes (p. 40).

This section explores the social organization underpinning the experiences of paramedics during and leading up to the current crisis. Understanding "how something works" from the standpoint of those who live it, experience it, and breathe it can facilitate change and restructuring, possibly even transformation. As Mintzberg (2017) poignantly writes, "strategies have to be learned on the ground, not deemed in offices" (p. 5). Understanding how

EMS specifically, and health care more broadly, is organized in Alberta can lead to meaningful change rooted in "the everyday" of paramedics.

History Matters!

Paramedics' discussion of their experiences, both in media reports and in the interviews conducted for this report, underscores the aptness of Aupers' depiction of "triggering events" for the Covid-19 pandemic. It also draws attention to how we must view the current crisis experienced by Alberta paramedics (and their patients) as a product of social organization and not a product of nature. In other words, the current crisis was not inevitable and was not simply the result of increased call volumes due to the pandemic. Rather, a focus on how the crisis was socially organized draws attention to the broader systematic and social forces that have structured the crisis. In order to understand the underpinnings of the current crisis, we must look at the historical roots that contributed to it.

"The current crisis was not inevitable and was not simply the result of increased call volumes due to the pandemic."

The birth of contemporary EMS occurred in the 1960s and 1970s with a focus on rapid transport, organized by the ethos "you call, we haul" (see Corman, 2017). This type of EMS was designed to treat "real" medical emergencies or traumatic injuries. EMS education programs further entrench these system logics in their biomedical training orientation and orientation toward true emergencies in the context of medical and trauma calls.

While this system orientation is not unique to Alberta, or Canada for that matter, it is problematic in that the system has not evolved to meet contemporary demands of prehospital emergency care. For example, it is estimated that between 11% and 51% of individuals who use the ambulance do so when they do not require an ambulance (Dejean et al., 2016). This draws attention not only to the disjuncture between those who use EMS and what counts as appropriate use of EMS but also calls into question how contemporary EMS and other health care services do not necessary meet the needs of those they aim to support. Professor Leo McCann, while speaking about ambulance services in the context of the United Kingdom, describes the roots of contemporary EMS and how these roots connect to the current crisis in EMS:

> … the ambulance model was based on the kind of 1960s, 1970s rapid response EMS model … the idea being that you call for an ambulance, an ambulance will arrive quickly, will stabilize the patient, and then transfer that patient to a definitive care, which is the hospital … This problem has been building for quite some time … [Paramedics] have outgrown that model to a large extent. The paramedic now is a much more versatile, clinical resource than it was 30 years ago … We have a design, the system has outgrown that design. [The design] no longer

> reflects the reality on the ground. (Public Services Committee, 2022)

A lack of evolution of EMS is not unique in health care. As Tonelli (2020) notes, health care more broadly "is fundamentally similar to the program that was implemented in 1968" (p. E61). While EMS are ripe for change (Allana & Pinto, 2021), of importance to note here is that the foundation of EMS in Alberta is faulty; while the foundation might have been suitable during the emergence of modern prehospital emergency care, this design no longer reflects the contemporary context.

More specific to Alberta, reform and restructuring practices seem to be one of the mainstays of health care in Alberta. For example, major health care reforms occurred in the early 1990s when Alberta regionalized health services, "motivated by financial and quality goals. Provincial leaders believed that regional governance could generate cost savings and improved health care services through economies of scale and coordination of services" (Baker et al., 2008: 221).

While the nine health authorities that would eventually result faced many challenges (see for example, McGinnis et al., 2007), there were noted "successes"[5] in some regions attributed to this reform. In 2008, for instance, Baker et al. (2008) used Calgary Health Region as a case study to exemplify *High Performing Healthcare Systems* (Baker et al., 2008). According to Baker and colleagues, the Calgary Health Region was chosen as one of two "better-performing Canadian healthcare systems…provid[ing] evidence that Canadian health policies, financial environments and regulatory frameworks do not prevent the emergence of high-performing systems" (p. 22).

Key to reforms leading up to contemporary EMS in Alberta was the "Provincial Optimization Review: Final Report" (Alberta Health and Wellness, 2008). This report was based on the assumption that "Alberta's health system is not sustainable" (p. 1), that the system "operates as an unregulated monopoly," and provides, "little choice or competition" to customers (p. 4, 6). According to the report, there is a need for "true health reform" (p. 4) that, among other things, has "a relentless pursuit of quality," including a focus on evidence-based medicine and health outcomes. This report suggested a need for a "new [centralized] governance model" in order to "reinvent the health services operating model and to increase the effectiveness of Alberta's health care system" (p. 3) and to facilitate the standardization of care across the province in order to improve patient care, including access. Alberta Health and Wellness (2008) explained this as follows:

> To meet [today's health care] challenges, Alberta Health and Wellness can facilitate decisions that promote access, quality,

5 "Success" appears in quotes to highlight the problematic nature of Baker and colleagues' (2008) research, which is primarily based on administrative data.

> and sustainability. This will require (1) actively managing the factors that can reduce demand for the costliest and least-efficient health care services; (2) ensuring that health care supply and demand matches the quality, timeliness, and cost-effectiveness that Albertans require; and (3) creating a delivery mechanism that facilitates equilibrium between supply and demand. (p. 5) (cited in Corman, 2017, p. 8)

As such, it was argued that a new centralized governance model would facilitate the application of "management principles to help streamline care and remove waste (e.g., by centralizing intake and standardizing care protocols) [which] can lead to dramatic improvements in care" (p. 40). Central to this reform were technologies of knowledge and governance,[6] viewed as a way to monitor and hold accountable frontline health care workers and the province for "achieving better outcomes in health" (AHW, 2001, p. 8).

It is important to note here, and inevitably connected to the current crisis in EMS, that governments in Alberta have historically favored neoliberal styles of management and governance based on "free-market ideologies that oppose public intervention" (Williams et al., 2001, p. 7; Church & Smith, 2006, Corman, 2017) to structure policy and practice. Furthermore, none of these reforms or policies really transformed EMS. Rather, they left in place the "you call, we haul" roots of EMS while further entrenching the ideas that market-based solutions, as well as corollary technologies geared toward the efficient use of resources and better management based on a "sole trust in numbers" (Porter, 1995), will provide adequate solutions for contemporary health care problems, including those of EMS.

"One of the main roots of the problems experienced today can be linked back to reform and restructuring practices that began in 2009 when the provincial government took over EMS."

Contemporary Roots

In order to understand the current crisis faced by paramedics on the front lines of EMS in Alberta, we must understand the foundation of the system at the centre of the crisis and the different layers of this foundation that have been built up over the years. A major element of this foundation was built in 2009. In fact, many participants discussed how one of the main roots of the problems experienced today can be linked back to reform and restructuring practices that began in 2009 when the provincial government took over EMS. For example, in my earlier research in Calgary that occurred at the beginning of this reform and restructuring of EMS, paramedics described concerns about a downgrade of service with becoming a provincially run service.

> Many paramedics, for example, spoke to me about how they were concerned that the level of service that made EMS in the city of Calgary, in part, a "Cadillac" service was going to be

6 "Forms of language, technologies of representation and communication, and text-based, objectified modes of knowledge through which local particularities are interpreted or rendered actionable in abstract, translocal terms" (McCoy, 2008, p. 701, cited in Corman, 2017, p. 12).

> downgraded. One of their concerns was that EMS in Calgary was going to change from an Advanced Life Support (ALS) service, where all units in the city have, at a minimum, an EMT-P and an EMT,[7] to a Basic Life Support (BLS) service, which requires a minimum of an EMT and an emergency medical responder (EMR) for an ambulance unit. (Corman, 2017, pp. 179-180)

Based on this current study, it appears that such concerns came to fruition. For example, one paramedic described the takeover as the "AHS Armageddon … everything changed" (P28) and has "gotten exceptionally worse … Everything is chaos, all the time" (P21). Another described the takeover as follows: "The moment AHS took over ... at that moment I became employee number blah blah blah, and I was no longer [name] … You became a number instead of a person" (P17). Characteristic of the takeover was a downgrade in services characterized by limited room for system flexibility and innovation concomitant with paramedics being viewed as "asses in a seat" (P3).

Key to the reform and restructuring practices that govern the work of paramedics today is a rigid focus on response time — "time is of the essence" — and other metrics (see Alberta Health Services, 2022b), with very little focus on clinical outcomes, patient care, or the well-being of frontline staff. Such a one-dimensional focus fails to capture the complexity of work processes of paramedics and their unique work context, which resulted in them being objectified and dehumanized. This led to some paramedics describing the statistics as "fake" (P3) because they are "skewed" and only tell a partial truth.

Based on the talk of participants, policies and practices seem to be orienting more to metrics — "they're all about stats" (P5) — geared toward "stopping the clock" (P15) as opposed to a focus on the actual work and work environments of workers and those they care for. As a result, many paramedics alluded to "sociopathic policies" (P3) that fail to consider their hidden dangers, ultimately contributing to the current crisis paramedics in Alberta are experiencing. The "core flex" model is an excellent example. This a shift structure used in many rural settings in the province described by P6 as follows:

> Okay, so Core Flex is how they justify doing 24-hour shifts … In a lot of the rural sites, they run what's called core flex, which is a 24-hour shift, and that crew is taskable for 14 hours at a time. Once that crew hits 14 hours of time on task, whether it be emergency calls or transfers, once they hit 14 hours, they time out and they must get eight hours of rest before they start their next working day. Theoretically if you don't do any calls,

7 EMT refers to an Emergency Medical Technician, now referred to as a Primary Care Paramedic (PCP). EMT-P refers to an Emergency Medical Technologist – Paramedic, now referred to as an Advanced Care Paramedic (ACP).

> you're just gonna be on shift essentially for 96 hours straight in a four-day tour, you're on call for 96 hours straight. And the core portion of that is typically three hours of straight time where you're getting paid your hourly wage and you're at the station for three hours a day…Once the three hours have lapsed, you are now in the flex portion of your shift for the remainder of that shift, and the way that that works is, you can take your uniform off. You can go home if you live in that community, provided your response time is less than eight minutes.

While this shift structure might work for services with a small call volume (P19), paramedics argue that it does not work for large call volumes. In light of how "we're all metro now" (P16), this way of organizing the work of paramedics is "the single greatest way to kill you" (P11). Essentially, many paramedics I spoke to "hate it" (P6), which reflects the impact of this policy on the well-being of paramedics.

In addition, and the consequences of which I documented in my earlier research and more so in this current study, the ethos of new managerialism geared toward the neoliberal imperative of efficient use of resources and realizing "value for money" (Rankin & Campbell, 2006, p. 8) is central to how EMS in the province are organized. EMS in Alberta are socially organized through the lens of "lean" management principles, facilitated by new technologies of knowledge and governance. According to Mahmoud et al., (2021):

> The basic premise of Lean Management (LM)—which has its origins in the automotive industry—is that greater efficiency can be achieved through a process of continuous improvement aimed at eliminating waste and maximising value-adding activities… LM emphasises waste elimination as a way of improving the flexibility of productive resources and addressing variability in customer demands. (p. 2).

For example, the rationale of the 2009 reform to consolidate health authorities under one provincial health authority — Alberta Health Services — was not only to put the "patient first regardless of where they live in Alberta" but to also to "'increase the effectiveness of Alberta's health care system' (AHW, 2008, p. 3) by standardizing care across the province so that 'patients receive the same quality of care' and by improving 'access to health services . . . mak[ing] the province's system more efficient and effective'" (Corman, 2017, p. 8). More recently, Alberta Health Services (2016) discussed the importance of standardization and "making improvements and

managing change based on LEAN and Six Sigma Principles" (p. 2) in order to guide "ongoing quality improvement" in the province (p. 1).

Such governing/managerial practices based on these efficiency logics target health-care workers and their work settings with the goal of making more efficient and effective the work health-care workers do while dually improving the care patients receive (Corman, 2017). According to Alberta Health and Wellness, "through 'optimal' coordination and 'close monitoring' of services, for example, it is believed that the 'flow' of patients through the system can be better managed, therefore leading to increased efficiencies (AHW, 2008, p. 38)" (Corman, 2017, p. 13).

Essentially, a technological deterministic notion of governance where one-dimensional notions of "efficiency" based on a "sole trust in numbers" appears to be entrenched in the current system. As P16 explained: "So much of the system is automated now. The automation is really, I wanna say it's far from perfect, but it's actually really bad. Like it's super inefficient ... just constant issues." This way of governing and knowing frontline work views the work of being a paramedic as simple and stepwise and is "subsumed by an 'orthodox' or rationalist view (see Allen, Braithwaite, Sandall, & Waring, 2016) of EMS work … often result[ing]in mechanistic interventions which have unintended negative consequences (Allen et al., 2016, p. 183)" (Corman, 2018, pp. 47-48). In other words, there is too much diversity in the province to have a one-size-fits-all approach, yet "We Are One – One team. One Board. One plan for the delivery of health care in Alberta" (Corman, 2017, p. 8) or "We are stronger together" (Alberta Health Services, n.d.-b) are discursive approaches that reign supreme in Alberta.

> *"A technological deterministic notion of governance where one-dimensional notions of 'efficiency' based on a 'sole trust in numbers' appears to be entrenched in the current system."*

"Efficiency really needs to take a far back seat to other priorities" (P16)

The consequences of this way of organizing EMS were evident soon after AHS took over EMS in the province as I documented extensively. For example, in exploring the work of paramedics and how their work is socially organized between 2010 and 2011 in Calgary, a multiplicity of concerns and consequences emerged that were linked to how EMS in the province were socially organized. Such consequences included the following:

- Conflict on the front lines, both between paramedics and with other frontline health-care workers (e.g., nurses) due to conflicting mandates.
- The institutional demarcation of "good" or "bad" patients due to policies and practices that target the supposed efficient use of resources and who counts as "deserving" of EMS resources.
- The erosion of trust between nurses and paramedics and between

fellow paramedics due to a variety of policies (e.g., download) and the displacement of partner work (e.g., not having consistent paramedic partners).
- A perceived deterioration of the quality of EMS due to resources being spread "thin" (e.g., education and training resources) and a potential downgrade in service from an Advanced Life Support service to a Basic Life Support service.
- Paramedics having to "do more with less," as their workload/ responsibility increased, which was a "double-edged sword."
- A hyper focus on deploying technologies to manage what was viewed as inefficient work practices (e.g., targeting the "downtime" of paramedics to ensure system coverage and efficiencies).
- Feelings by paramedics of not being heard or listened to.

While these concerns and consequences were focused on Calgary immediately following AHS taking over EMS in the province, participants in the current study included paramedics throughout Alberta, with varying years of experience in both rural and urban settings. What is quite clear from this new sample is that concerns expressed in my earlier research appear to have not only become more intensified, but such consequences also appear to have become pervasive, now normalized parts of the "everyday" work of paramedics throughout the province. In addition, it appears that new consequences have emerged, primarily the "spread" of burnout [8], moral injury[9], or what may be better thought of as structural violence[10], which refers to a system of social organization that causes violence to those embedded within it. For instance, paramedics described being treated as though they were "cogs in a machine" (P3), essentially being "grinded to a nub" (P3) and "treated as expendable" (P21). Many paramedics expressed working in a system that "work[s] people until they quit" (P3). P3 expanded on this:

> I'm a pretty reasonable guy but, you know, I screamed at my bosses before, because they pushed me to that point, and then they do the gaslighting thing where they pretend like you're crazy because you're upset but they, they brought you there, and they don't acknowledge it, right? It is like an emotionally abusive relationship at points in time. So … That's kind of a new thing, the being pressured like that from them is really quite new, because the only reason they're pressuring us is because they have calls waiting and they've never had that before, where they see stack calls with no ambulances available to respond. And instead of them, you know, telling the Government of Alberta or their higher ups in AHS or even the media that there's a problem, their reaction is instead to drive their road staff … crazy … It's sad, because I see people [other

8 "…a state of physical, emotional, and mental exhaustion caused by a depletion of ability to cope with one's everyday environment," typically linked to one's work environment (Gentry & Baranowsky, 2013, p. 3).

9 "Moral injury, on the other hand, describes the challenge of simultaneously knowing what care patients need but being unable to provide it due to constraints that are beyond our control…Moral injury locates the source of distress in a broken system, not a broken individual, and allows us to direct solutions at the causes of distress. And in the end, addressing the drivers of moral injury on a large scale may be the most effective preventive treatment for its cumulative effects among health care providers" (Dean et al., 2019, pp. 401).

10 "The term 'structural violence' is one way of describing social arrangements that put individuals and populations in harm's way ... The arrangements are structural because they are embedded in the political and economic organization of our social world; they are violent because they cause injury to people (typically, not those responsible for perpetuating such inequalities)" (Farmer, Nizeye, Stulac, & Keshavjee, 2006, p. 1686).

> paramedics] that I love, know, and respect and have for years. I see them change into different people in front of me because of this and it's sad.

Such deleterious effects were made visible by participants throughout the interviews. For example, many paramedics described how the integrated dispatch model is "consistently terrible" (P2) and used for "evil purposes … they track you" (P27), because it "doesn't care" (P27) about the workload of paramedics. Illustrating the deterministic focus of the technologies deployed at dispatch operation, and the logics embedded within them, one individual who works at dispatch operations explained, "we can't be humans because we have so many rules." As a result, "Most [paramedics] hate us".

While these ways of organizing health might work in theory, paramedics drew attention to what happens in actuality. The talk of paramedics, for instance, exemplified how the situation is only being made worse by this new managerial ethos and technological deterministic orientation in EMS in Alberta that is devoid of the actual doings of paramedics.

Many paramedics, for instance, called into question the efficiency logics of the system: "I think efficient or inefficient should almost never be employed in this field. Like we're trying to respond to emergencies when they happen. We need to be there to respond to those emergencies" (P16). This sole focus on numbers/metrics was described by many as "broken" (P17), with paramedics bearing the brunt of having to do more with less: "Watch your times and statuses…as things get tighter, it's, they [managers] kind of come down harder on us" (P16).

> *"COVID-19, while not the cause of the current crisis, exposed the weak foundation of a system that has been teetering on the edge for some time."*

The Social Organization of a Crisis

As a result of how EMS in the province are organized, the system is "rigid [in] nature … skewed heavily in the direction of you must take this person to the hospital" (P6) and lacks flexibility; COVID-19, while not the cause of the current crisis, exposed the weak foundation of a system that has been teetering on the edge for some time. Due to how "lean" the system is, there was a lack of surge capacity; COVID-19 and to a lesser extent the overdose crisis therefore "took us right off guard" (P25) and "was never really in the cards" (P23). Essentially, COVID-19 and the overdose crisis constituted a "big storm" (P7) that "kicked our a**, you know, mentally and physically" (P18) because, "our system was not prepared for it" (P2) while also making visible the illogics/irrationality of the system that was neither designed to support patients or those that tend to them — the paramedics — and was ill equipped to respond to an unplanned emergency.

Colourful metaphors emerged from the data exemplified the consequences of

work being organized by a system that does not reflect the actualities of the job. Metaphors included being on a treadmill that goes faster and faster, yet no one is going anywhere, a dam with a hole in it and paramedics are coping by plugging the hole, and playing a game of chess, but you, "don't have enough chess pieces to play the game" (P16). As such, participants described this system as "toxic"; not only is the system "designed to break people," it is also designed to "eat your young." As one paramedic poignantly mentioned, "I feel bad for people just starting out" (P19). This connects to broader issues of workplace culture. As an individual interviewed who worked with paramedics in Alberta and had knowledge of issues they faced explained:

> The system was instead designed in a very paramilitary way, where they wanted to break people, and intentionally tried to break people in order to build them back ... They did a really good job of breaking, nobody told anybody how to build anybody back up again ... I am biased here but if I had to say where I think that comes from, I will say to you that I think it came directly from management ....The culture in the workplace was toxic abusive, and in my opinion, it was designed to break people in order to allow them to prove that they were good enough to do the job … Something needs to happen …

These metaphors reflect how there is "a global lack of vision" (P8) in EMS in Alberta, which does not reflect the interests of "most" patients (P1), practitioners, or the complex actualities of working as a paramedic in non-standardized, ever-changing work environments. As Mintzberg (2017) aptly notes, "[t]hanks to all these fads and fallacies, we have way too many 'solutions' in health care whose simplicity does not match the complexity of the work in question" (p. 32). To be clear, one size does not fit all — "'the larger, more centralized the health system, the less likely it is to be responsive to local needs'" (Smecher, 2007: 7, cited in Mintzberg, 2017, p. 37). Increased standardization, while having some benefits, can have significant deleterious effects as expressed by participants.

Central to the consequences of this social organization is the structural violence against paramedics due to a "culture of … neglect" (P21); when paramedics are viewed as objects instead of subjects by system logics, it makes it easier for others who are tasked with managing the system to treat paramedics as such. Paramedics, for instance, described being "harassed" (e.g., being paged during a trauma call), "gaslit," receiving no positive feedback or empathy from those tasked with governing/managing them. It is important to note that there is a strong link between the quality of supervisors and burnout. As Maslach (2001) points out, "[l]ack of support from supervisors is especially important, even more so than support from coworkers" (p. 407).

Section 3: An Action Plan for Change

The analysis above draws attention to the need for significant change in how EMS is organized in the province of Alberta. A key part of this research was to explore ways of making change based on the lived experiences of those on the front lines of EMS, in order to deal with the current crisis and prevent future crises. In fact, this desire to include the voices of paramedics occurs against the backdrop of how paramedics in the province feel like they have not been heard for years, and as a result, much policy and practice have been developed and implemented without their input and contributing to the feeling that changes are being made behind their backs.

A key part of my interviews was to bring the voices of paramedics to the fore to inform ways of promoting change in the province. As such, the interviews were focused on exploring opportunities for change both within EMS and outside of EMS. Not surprisingly, most of the change discussed by paramedics focused on in-system changes. However, part of this research also explored changes needed outside of traditional EMS or even health care, informed by the lens of "upstream medicine" (Bresnahan et al., 2017) and the social determinants of health. Based on the data gathered in this study, I outline 15 empirically grounded recommendations listed below.

Recommendations Overview

Recommendation 1

Alberta Health Services MUST develop an evidence-based plan that determines the EMS resources needed.

Recommendation 2

Alberta Health Services should explore whether there is a need to do a public awareness campaign that aims to inform the public on appropriate use of EMS resources.

Recommendation 3

A shift in organizational ethos throughout leadership and organizational policies and practices is required that, at its foundation, incorporates the principles of a trauma-informed environment that centres on the mental and physical health of its employees.

Recommendation 4

Central to this shift in ethos is refocusing on "what counts" as knowledge in EMS; data collection strategies must be developed that incorporates the voices of frontline workers in the development of policies and system design.

Recommendation 5

Alberta Health Services must create a retention plan based on the assumption that resiliency is social through and through and develop corollary performance metrics to ensure that such retention plan is having its intended effect.

Recommendation 6

A pilot and feasibility study should be conducted that explores the cost/benefits of a 30-hour work week for paramedics.

Recommendation 7

A pilot and feasibility study should be conducted that explores the cost/benefits of reconfiguring how the shifts of paramedics are structured in order to improve the health and wellness of paramedics.

Recommendation 8

Best practices need to be developed that point to the amount of time on task for paramedics that best supports patient care and the health and wellness of practitioners. Corollary reporting procedures should also be developed to ensure time on task does not go above a certain threshold for paramedics.

Recommendation 9

The development of a mentorship program is needed to support all employees, including new recruits.

Recommendation 10

The education and training of paramedics, including those training to become a paramedic and those already in the field either upgrading their education and/or as a form of continuing education, must be enhanced to ensure structural competency, as well as mental health and wellness training (from a person-in-environment framework), are key components to the paramedic competency profile. This training should also be required for those tasked with managing and administering EMS.

Recommendation 11

Make the non-traditional role of community paramedics a mainstay in Alberta.

Recommendation 12

Alberta must enhance social care spending in ways that are geared toward producing healthier individuals and healthier populations based on the principles of equity and inclusion.

Recommendation 13

In order to create a more upstream approach to health and wellness in the province, monies currently spent on downstream endeavours (e.g., traditional health care, policing, etc.) will likely require redirection to more upstream endeavours.

Recommendation 14

While prevention and health promotion should form the mainstay of a shift toward upstream endeavours, services within a publicly funded and not-for-profit system must be available to those in need. The Government of Alberta and Alberta Health Services should confirm its commitment to universal health care and access to services and supports within a publicly funded system.

Recommendation 15

To facilitate the recommendations proposed above, a "Health in All Policies" approach should be adopted in Alberta.

Below I expand on each of these recommendations by elucidating on their respective rationale. When possible, I also situate them within the existing literature to bolster the evidence-base to support their implementation.

EMS-Specific Changes

> *"Alberta has the most paramedics per capita compared to any other province in Canada."*

More Paramedics, More Ambulances

Most paramedics suggested a need for more ambulances and more paramedics as a way to ensure that there are available resources to meet the demands of EMS in the province. This general assumption of the need for more EMS resources to solve the current crisis is supported by others, like Dave Deines, the president of the Paramedics Association of Canada, who is speaking to the EMS crisis nationwide: "The issues are generally the same. There are too many calls and not enough ambulances" (Frangou, 2022). Alberta Health Services also supports this idea, with more ambulances being a key part of their "10-point plan" to address the crisis in EMS (AHS, 2022).

However, based on the table below, Alberta has the most paramedics per capita compared to any other province in Canada, at least based on the provinces where statistics are available (Table 4). Furthermore, we see that Alberta is in the middle of the provincial pack in terms per capita health care spending (Table 5), with Canada "among the highest spenders on health care in the Organisation for Economic Co-operation and Development (OECD), at $6,666 per person in 2019" (Jackson, 2021) (see Figure 7).

Table 4: Paramedic Providers, Total Count and per 100,000 Population, by Province (2020)

	NL	PE	NS	NB	QC	ON	MB	SK	BC	**AB**
Total count	---	219	1,384	---	5,706	9,477	---	---	5,183	**8,886**
Per 100,000	---	137.2	141.3	---	66.5	64.3	---	---	100.7	**201**

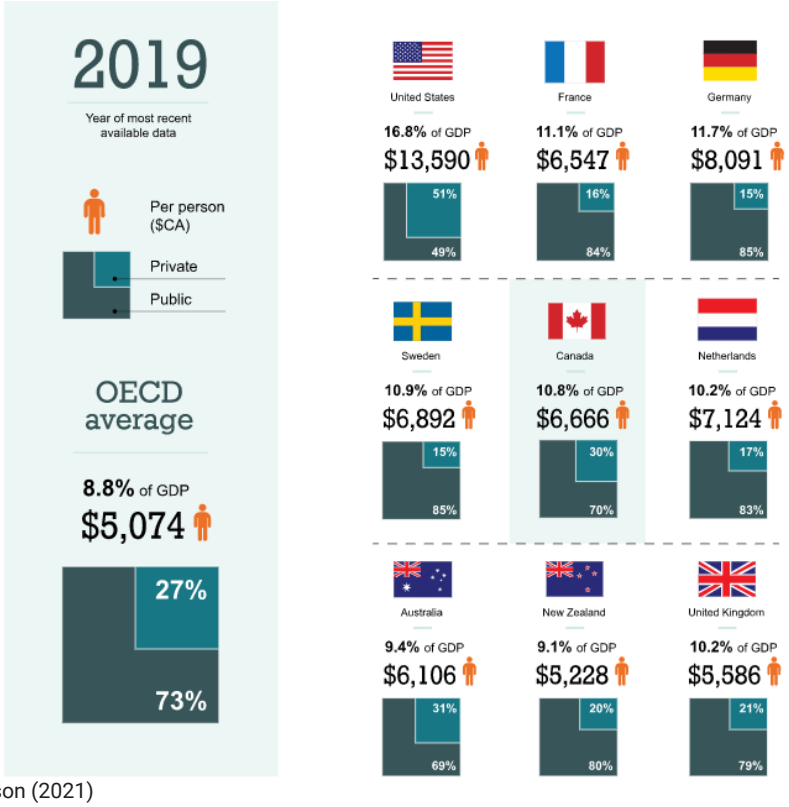
Source: Canadian Institute for Health Information (2022)

Table 5: Total Health Expenditure per Capita by Province and Territory

Health spending data category and component	Unit description	Period of latest data	Latest data	Data for previous period	Change from previous period
Total health expenditure per capita					
Newfoundland and Labrador	Dollars	2021	9,585	9,187	4.3%
Prince Edward Island	Dollars	2021	8,136	7,872	3.4%
Nova Scotia	Dollars	2021	8,831	8,506	3.8%
New Brunswick	Dollars	2021	7,969	7,807	2.1%
Quebec	Dollars	2021	7,913	7,948	-0.4%
Ontario	Dollars	2021	7,773	7,630	1.9%
Manitoba	Dollars	2021	8,313	8,217	1.2%
Saskatchewan	Dollars	2021	8,502	8,549	-0.6%
Alberta	Dollars	2021	8,230	8,454	-2.6%
British Columbia	Dollars	2021	7,946	7,641	4.0%
Yukon	Dollars	2021	14,111	14,149	-0.3%
Northwest Territories	Dollars	2021	20,365	18,709	8.9%
Nunavut	Dollars	2021	23,023	21,008	9.6%

Source: Canadian Institute for Health Information (2021a)

Figure 7: How Does Canada's Health Spending Compare?



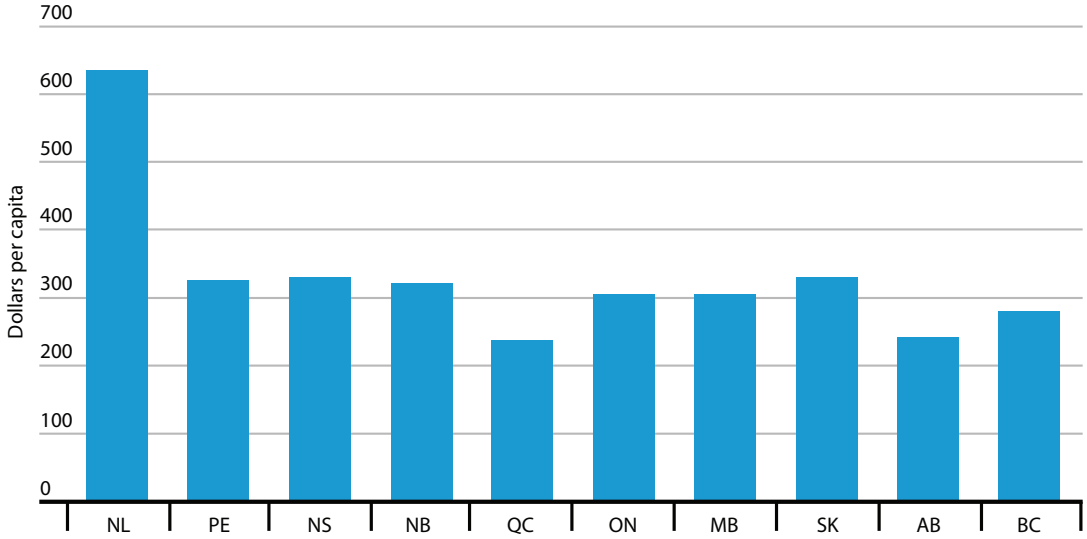
Source: Jackson (2021)

In addition to the need for more EMS resources, particularly more ambulances and paramedics, participants also drew attention to the need to educate the populace on appropriate uses of EMS, with the presumption being that many Albertans use EMS inappropriately. While there is an evidence-base to support public awareness campaigns to reduced perceived inappropriate use of EMS resources (see for example, Ohshige, 2008; Borg et al., 2020), it is important to note that behind the individuals who supposedly "abuse" EMS there are broader issues of lack of services in the community and underlying social determinants of health and broader structural forces (discussed below) that structure such "abuse." As P17 succinctly said, ambulance misuse is a "systemic issue." In other words, rather than educating Albertans on when it is or is not appropriate to phone 911, would it not be better to design a service that better reflects the needs of Albertans? Furthermore, any public awareness campaign will likely not work if other resources more upstream are not made available.

Nevertheless, the fact that paramedics are drawing attention to the need for more ambulances and a better use of ambulances begs the following questions: Are more paramedics and ambulances needed? Are more ambulances and paramedics the solution to the current EMS crisis? Is there a way to better use EMS resources? Perhaps more EMS resources are needed in the short term. Assuming they are, determining the number of EMS resources is complex and based on a multiplicity of factors, including the population growth rate, projected increase in call volumes, and the need to build in surge capacity for unplanned emergencies.

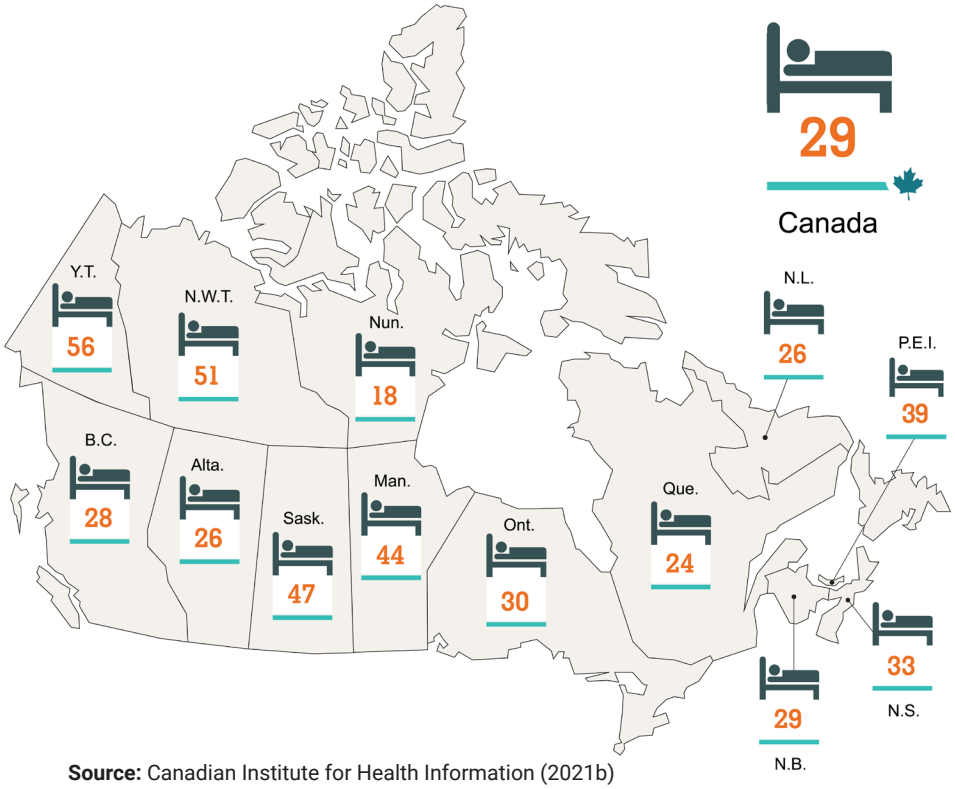
It is important to recognize that other elements of the health-care system impact the need for EMS. Hence, other factors must be taken into consideration as well, including but not limited to the levels of resources available in home and community care, long-term care, and physician services, both inside and outside of the hospital. For instance, key to allowing paramedics to transfer their patients to the hospital and avoid long hallway waits is to unclog other elements of the system. This may include age-in-place initiatives, provided they are properly resourced and support informal caregivers. Also, "significant increases in capacity at long-term care homes and a greater supply of home care" is also purported by many experts as a solution to backlogs in emergency departments (Crawley, 2022). As Figures 8 and 9 below indicate, Alberta's spending on the long-term care and home and community care sector are among the lowest in Canada.

Figure 8: Home and Community Care Spending in 2020-2021 by Province, per Capita



Source: Busby (2021)

Figure 9: Long-Term Care Beds per 1,000 Seniors Aged 65+



Source: Canadian Institute for Health Information (2021b)

Nevertheless, it is clear that Alberta does not have a short-term or long-term plan to ensure adequate EMS resources are available to Albertans. As Darren Sandbeck, former chief paramedic of Alberta, explained in an interview with the Edmonton Journal in response to the question, "How many paramedics do you need to hire?":

> There isn't a target, per se. We're just going continue to hire until we have enough – appreciate that we're hiring across the province through all five zones, so we're spreading staff out across a pretty broad base. (Smith, 2022)

More EMS specific resources alone will not solve the current or future problems in EMS. As I have hopefully illustrated in the analysis above, the current crisis is complex and complex problems require complex solutions. Nevertheless, I recommend the following:

Recommendation 1: *Alberta Health Services MUST develop an evidence-based plan that determines the EMS resources needed*. This should be based on relevant factors, some of which are noted throughout this report. The plan should use evidence-based metrics to ensure resources are available that centre on the well-being of paramedics (see below) and ensure adequate surge capabilities. In addition to relevant metrics, the lived experiences of paramedics should be incorporated into every stage of this resource allocation plan to ensure alignment with the everyday work of paramedics (see recommendation 4).

Recommendation 2: *Alberta Health Services should explore whether there is a need to do a public awareness campaign that aims to inform the public on appropriate use of EMS resources*. If a campaign is deemed warranted, this should only be done under the premise that those who use EMS mainly do so due to the limited availability of resources in more community settings. Hence, public awareness campaigns should only be undertaken if additional upstream resources become available to facilitate more appropriate use of EMS. Special care should be given to ensure users of EMS are not stigmatized.

> *"Simply throwing money at the problem will not solve it."*

A Two-Pronged Paradigm Shift

Adding more resources and ensuring the "appropriate use" of EMS resources might be part of the short-term and long-term solution but simply throwing money at the problem will not solve it, especially in light of a "toxic" system that puts numbers ahead of patient care and treats paramedics as, "meat in a seat…[We are] more than a number" (P16). Essentially, under the current system, as one paramedic expressed, we "can't keep going the way we're going" (P25).

As the analysis above points out, the current system is not designed to support patients or those tasked with providing care to them. In particular, many paramedics interviewed discussed or alluded to the need for a paradigm shift in EMS. This paradigm shift included a two-pronged approach to change: (1) Focusing on the wellness of paramedics, and (2) Refocusing EMS in Alberta to be as upstream as possible, with a focus on community paramedicine.

Paradigm Shift: A System Rooted in the "Everyday" of Paramedics

First, a shift is needed that redirects the focus away from a sole trust in numbers to one that centres on the wellness of paramedics — "Just give a sh** about your people" (P11) — by making practitioner safety and wellness "[a] kind of the kernel core" of the system (P15) and actually supporting paramedics in providing good quality of care to those they tend to. This shift first and foremost requires a change in the ethos of the organization tasked with governing the work of paramedics from one based on a "command and control" style of management to one geared toward creating a trauma-informed workplace that prioritizes the mental health of its workers (Centre for Addictions and Mental Health, n.d.).

This shift must necessarily begin from the top. This is particularly important given the sentiments expressed by the vast majority of participants. Paramedics discussed, for example, the need for change from the "old guard" (P2), which was "toxic" (P3) because they had an "old-school mentality" (P19) or "old-school" thinking (P21) characterized by a "disciplinary" form of leadership (P22) that did not communicate with frontline staff — a "lack of information" (P23) — and fostered a machismo culture (P5) that instilled a "culture of fear" (P11) that prevents workers from speaking up. This toxic form of leadership was not only "out of touch" (P19) with the actual work of paramedics, but they also "don't give a sh**" about the needs of frontline workers (P11), and hence could not be "trust[ed]" (P7).

This talk points to the need to "revamp" (P13) or transform not only leadership in the province but, more broadly, the workplace of paramedics. In terms of leadership, building community is key according to Mintzberg (2017):

> Many successful leaders are not 'transformational' or 'charismatic' so much as healthy and engaged; they connect with and respect people, whom they see as colleagues, not 'subordinates,' let alone a 'workforce' … the great organizations are robust *communities* of human *beings*, not generic collections of 'human resources'. (p. 28)

In terms of reorganizing the workplace setting, it is essential to this paradigm shift to create a trauma-informed workplace, including fostering non-judgmental work settings that recognize the unique stressors experienced by paramedics. Furthermore, as Pyles (2018) argues, "some of these changes include making changes to schedules, reorganizing work duties, improved communication mechanisms, enhanced job skills training, and greater levels of supervisory support" (Pyles, 2018, p. 202). The Centre for Addiction and Mental Health (n.d.) outlines key elements of organizations that promotion the mental health of their workers. These include the following:

- Set the tone from the top.
- Reduce the friction between work and life.
- Address job stress.
- Expose and address discrimination.
- Be sensitive to employees' attitudes and beliefs.
- Build in accountability.

Last but not least, key to the first part of this paradigm shift is viewing resiliency as social through and through. Resiliency does not reside solely in individuals. To the contrary, one's work environment plays a significant role in the mental and physical health of workers. In this regard, we can learn a great deal from Indigenous notions of resilience as described by Kirmayer et al. (2008):

> For Inuit today, resilience is not so much about adaptation to the Arctic environment as ongoing efforts to adapt to a daunting social environment created by the incongruent and often conflicting policies and institutions introduced by southern administration (p. 88).

Indigenous notions of resilience move away from rooting resilience (or lack thereof) in the individual but, rather, locate resilience in one's environment; such notions of resilience locate the roots of the problem in one's context rather than as internal properties of the individual. In doing so, we begin to move upstream to address the roots of the problem. This has consequences for promoting health and wellness on the front lines of EMS, as explained by Pyles (2018):

> And yet, rallying cries for self-care by management and other leaders can fall on deaf ears when no changes are being made to the organizational environment, working conditions, workload, pay, and other tangible benefits. It's a little victim blaming to say to someone 'you should really eat a healthier lunch,' 'be more mindful,' or 'get some exercise on your break' while otherwise maintaining a debilitating and disempowering, stressful work environment. (p. 199)

This person-in-environment lens toward mental health and resiliency is essential for creating a trauma-informed environment that supports the health and wellness of paramedics. As Maslach et al. (2001) explains, "a focus on the job environment, as well as the person in it, is essential for interventions to deal with burnout" (p. 419).

This shift in creating a healthy work environment requires a refocus on many elements. The following recommendations are made:

Recommendation 3: *A shift in organizational ethos throughout leadership and organizational policies and practices is required that, at its foundation, incorporates the principles of a trauma-informed environment*[11] *that centres on the mental and physical health of its employees*. Underpinning this ethos must be the upstream assumption that experiences of mental and physical health and illness of paramedics, and hence the source of burnout and moral injury, is rooted in one's work environment. This approach will necessarily require revisiting current policies (e.g., flexing, core flex, etc.) to ensure they align with supporting the wellness of workers and will likely involve developing new policies (e.g., sabbatical program, revisions to length of shifts, etc.). Central to this orientation is illness prevention and health promotion, which focuses on creating a healthy work environment that aims to prevent people from getting injured (mentally or physically) from their workplace. Downstream programs — available to those who do require mental health supports — are also needed that are not "lipstick on a pig" (P27). In other words, supports must ensure the intent of the service reflects the actual needs of paramedics and that those who utilize supports give meaning to those supports as being supportive, hence ensuring that the intended outcome are achieved. Furthermore, where possible, paramedics' autonomy should be supported as there are strong links between the wellness of workers and autonomy in the workplace.

> *"Paramedics must not be viewed as pawns in a game of efficiency."*

Recommendation 4: *Central to this shift in ethos is refocusing on "what counts" as knowledge in EMS; data collection strategies must be developed that incorporates the voices of frontline workers in the development of policies and system design*. Organizing health care based on a sole trust in numbers does not work and, as this research illustrates, can cause harm to both patients and practitioners and compromise the sustainability of the system as a whole. Hence, an essential element of this new ethos is viewing paramedics as subjects instead of objects; paramedics must not be viewed as pawns in a game of efficiency. Those tasked with governing/managing the work of paramedics must begin incorporating the voices of frontline workers in the development of policies and system design. Incorporating the perspectives of paramedics must be done in a serious and systematic way, not as is often done through "townhalls," "consultations," surveys, or other avenues that are often used as a discursive mechanism to report that stakeholders

11 While there are different trauma-informed approaches organizations can adopt, the sanctuary model discussed by Pyles (2018) is a promising one. This model aims to cultivate a "culture of safety," "a commitment to nonviolence," a commitment to "trusting others, open and direct communication, boundary settings" amongst other things (p. 208).

were consulted. Rather, there is a need to develop systematic processes and practices that facilitate input and feedback from those on the front line in an ongoing and authentic manner. A good place to start is to include ethnographers as part of quality improvement/assurance teams or potentially as a team of their own, whose aim is to focus on the quality of the system from the standpoint of its workers. Such teams must aim to capture the complexity of lived experiences of those on the front lines with the purpose of informing policy and practice (both at its development and evaluative stage). These ethnographers can accomplish this by providing empirical evidence rooted in a qualitative research paradigm that demonstrate how one's work environment supports or hinders the work of those on the front lines and those they seek to serve. As Pfeffer (2018) notes, "[l]ooking at what employers do daily to create healthy or harmful workplaces is a crucial missing piece of the story of human well-being, health, and health-care costs" (p. 34). The data these ethnographers collect must be seen as empirical data and given the same importance, if not more, as the numerical data collected.

Recommendation 5: *Alberta Health Services must create a retention plan based on the assumption that resiliency is social through and through and develop corollary performance metrics to ensure that such retention plan is having the intended effect*. According to Patterson and colleagues (2010), "Recruitment and retention are two of the most salient issues in Emergency Medical Services (EMS) today" (p. 1). The well-being of paramedics should become a key performance indicator in the province, not through satisfaction surveys but through more rigorous indicators that draw attention to retention rates and the costs of burnout.

> *"On an annual basis, full-time paramedics in Alberta work over 2,100 hours on average. This compares to 1,685 hours for the average Canadian."*

Recommendation 6: *A pilot and feasibility study should be conducted that explores the cost/benefits of a 30-hour work week for paramedics.* Research shows that the risk of injuries for paramedics is associated with long shifts (over 12 hours and under 16), "while shifts under eight hours in length show a decreased risk [of injuries] of 30%" (Barth et al. 2022, p. 10). Furthermore, "[s]hifts of less than 12 hours in length are shown to be less detrimental to sleepiness, fatigue levels, and general health" (p. 10). On an annual basis, full-time paramedics in Alberta work over 2,100 hours on average.[12] This compares to 1,685 hours for the average Canadian annually in 2021 (Organisation for Economic Co-operation and Development, n.d.)[13]. Shift work combined with the significant number of hours paramedics work annually are not supportive of a healthy workplace nor a sustainable EMS system. Considering the increased time on task for paramedics, a significantly reduced work week with the same pay will likely improve the health and wellness of paramedics, facilitate the hiring and retention of paramedics, and may even lead to cost savings due to decreased rates of injury and burnout.

12 FOIP Request: *2020-G-227* made by HSAA to Alberta Health Services (HSAA 2021).

13 According to OECD (n.d.): "The concept used is the total number of hours worked over the year divided by the average number of people in employment. The data are intended for comparisons of trends over time; they are unsuitable for comparisons of the level of average annual hours of work for a given year, because of differences in their sources. Part-time workers are covered as well as full-time workers."

Recommendation 7: *A pilot and feasibility study should be conducted that explores the cost/benefits of reconfiguring how the shifts of paramedics are structured in order to improve the health and wellness of paramedics*. Shift work is associated with "fatigue, stress, and poor health…both in health care workers and the general population" (Barth et al. 2022, p. 1), and thus, is very detrimental to the health of workers, as well as "hard on families" (P21). Many paramedics in the province, for example, work four days on, four days off (two 12-hour day shifts and two 12-hour night shifts). Other shift structures in the province are longer. What are the costs/benefits of an eight-hour shift? In addition, any shift structure should enable breaks and must facilitate a work/life balance by ensuring mandatory overtime is limited.

Recommendation 8: *Best practices need to be developed that point to the amount of time on task for paramedics that best supports patient care and the health and wellness of practitioners. Corollary reporting procedures should also be developed to ensure time on task does not go above a certain threshold for paramedics*. Many paramedics reported a significant increase in time on task over the years, which reflects increased demands placed upon them. Unit Utilization rates are a promising measure that may be used to ensure time on task does not go above a certain threshold. For example, according to the Region of Waterloo Paramedic Services (2021), "[m]onitoring unit utilization allows for proactive planning to ensure community needs are met in a reasonable time while using a sustainable level of deployed staff" (p. 4).

Recommendation 9: *The development of a mentorship program is needed to support all employees, including new recruits*. This program should be organized by principles of healing justice (Pyles, 2018). Mentors should be remunerated for their important work, and mentoring must be recognized as official work, therefore taken into consideration when the workload of mentors is allocated.

Recommendation 10: *The education and training of paramedics, including those training to become a paramedic and those already in the field either upgrading their education and/or as a form of continuing education, must be enhanced to ensure structural competency, as well as mental health and wellness training (from a person-in-environment framework), are key components to the paramedic competency profile. This training should also be required for those tasked with managing and administering EMS*. This is particularly important at the managerial and supervisory level. Structural competency can be defined as "the trained ability to discern how a host of issues defined clinically as symptoms, attitudes, or diseases (e.g., depression, hypertension, obesity, smoking, medication 'non-compliance,' trauma, psychosis) also represent the downstream implications of a number of upstream decisions about such matters as health care and food delivery systems, zoning laws, urban and rural infrastructures, medicalization, or

even about the very definitions of illness and health" (Metzl & Hansen, 2014, p. 128). Furthermore, a person-in-environment perspective recognizes the complex interface between the individual and their context and recognizes that individual problems are linked inevitably to social structures. Knowledge of these approaches should be a foundational element to paramedic training, not only to better support their patients (e.g., increased empathy) and their own well-being (e.g., experiences of burnout are socially organized), but also in light of the second element of the paradigm shift discussed above and the out-of-system changes discussed below.

Paradigm Shift: A Change in Professional Identity/Mandate and Reorientation of the EMS System

> Findings from the UK, Canada and US estimate 30%–50% of all transports by ambulance to be "inappropriate," with as many as 50% of individuals transported, discharged from hospital ED without significant treatment or referral (Bigham et al., 2013). These findings indicate a need to connect individuals with more appropriate services that will address the needs that drive them to seek assistance from paramedic services in the first place (Tavares et al., 2017). In such instances, a patient's needs may remain unaddressed because despite assessment they are discharged from hospital with inadequate supports in place (Dejean et al., 2016). (Ford-Jones & Daly, 2020, p. 745)

"Paramedics are well positioned to 'address a range of health problems in both community and institutional settings' outside of its traditional emergency response role."

Many individuals who call 911 are not in need of a traditional emergency response and transport to an emergency department (ED). A need to change the professional identity, combined with a reorientation of the EMS system in Alberta, was voiced by many participants. Key to this shift is moving from a one-dimensional focus of EMS geared toward treating and transporting patients to a more community and preventative orientation; while mainstream treat and transport will always be needed, paramedics are well positioned to "address a range of health problems in both community and institutional settings" outside of its traditional emergency response role, and in doing so, might address other issues in health care, including hospital overcrowding and wait times (Brydges, Denton, & Agarwal, 2016, p. 1).

Community paramedic programs vary across jurisdictions. They may range from "alternate transport/destination, home visit programs, wellness clinic programs, and remote patient monitoring" (Agarwal et al., 2019, p. 2). But the underlying orientation of all these programs is "preventing EMS and ED utilization for conditions better managed through primary care and community-based approaches (p. 2)." They do so by recognizing the link between "social determinants … [and] who becomes a frequent user of health services, including paramedic services and emergency departments"

(Allana & Pinto, 2021, p. 68). As such, community paramedics aim to support individuals in the community, and hence defer the very expensive costs of EMS treatment, transport, and emergency department utilization, not to mention, it is the right thing to do as hospitals are often not the best places for patients (e.g., iatrogenic illness) (see: Public Health Agency of Canada, 2013; Gosselin, Emond, & Marquis, 2021).

Such a reorientation in EMS is showing very promising results, with evidence pointing to how these programs "can improve quality of life, reduce ED transport and admission, and reduce hospitalization for frequent users of the ED," all while providing "substantial savings" to the health-care system (Xie et al., 2021, p. 2, 9). Overall, according to Allana and Pinto (2021), evidence points to how "community paramedicine is associated with improved health outcomes, reductions in healthcare spending and reduced ED use" (p. 69).

A shift is needed to integrate community paramedicine (also known as mobile integrated health) throughout EMS in the province. The good news in Alberta is that a shift is already underway that incorporates the important work paramedics can do in the community in what is often considered more non-traditional roles. For example, community paramedics have been at work in Alberta for quite some time and have been addressing patient needs in community settings. We see elements of this more upstream focus with "treat and refer" protocols that emergency paramedics have access to. However, the current protocols in the province are more like "treat and leave" protocols as opposed to treat and refer. As one participant described it:

> "Treat-and-leave" is bang on … There is no training or resources for emerg[ency] paramedics to refer to other care providers. Which is really a shame because calling a family practice and asking to consult with their primary care provider almost always gets the ball rolling if done appropriately.

Overall, paramedics in Alberta can play a larger role in refocusing health care upstream (McKinlay, 1997) and addressing the social determinants of health (Allana & Pinto, 2021). Rather than having a "small number of community paramedics treating a relatively small number of patients," it is possible to change the professional identity of paramedics and reorient the system on a larger scale from a solely downstream focus of EMS, so that in addition to the "treat and transport" mandate, the modern paramedic becomes also sufficiently trained and resourced to support their patients in the community based on the social determinants of health (Allana & Pinto, 2021, p. 69). Of course, this change in professional identity can only be accomplished by ensuring both EMS-specific resources (e.g. operational, education and training) and broader resources in the health and social care system in Alberta are available.

Recommendation 11: *Make the non-traditional role of community paramedics a mainstay in Alberta*. This will require appropriate training (see education recommendation in the previous section) and resources to facilitate a community-oriented focus. Doing so may include establishing true "treat and refer" protocols, among other things. But a note of caution is required: establishing treat and refer protocols has the potential to institutionalize deserving and undeserving patients, which often falls on racial, gendered, disability, age, and class lines. Changing the professional identity of paramedics and refocusing the system to be more upstream-oriented must be done with these concerns in mind. Alberta Health Service may find useful to explore British Columbia's Emergency Health Services Treat and Refer guidelines.

Changes Outside of the System

> "An ounce of prevention is worth a pound of cure"
> (Benjamin Franklin, in Masters et al., 2017, p. 827)

Let us assume that health-care systems are adequately staffed. Would this solve the current situation we are in, in Alberta and elsewhere? Professor Josh Seim makes the following observation:

> Even if hospitals were loaded with adequate labor and equipment, we would still see doctors, nurses, and others struggling … health care workers genuinely want to reduce human suffering, but they lack the tools to do so. Worse, many of their interventions help elicit a sort of Gramscian consent for the very forces that make people sick. That's partly because clinical interventions center the critique of suffering on the body and away from what Engels describes as "the root of the evil." (Seim, 2020)

The "root of the evil" here refers to the social context and, more explicitly, the forces at play that cause violence/ill-health upon people. While it is not surprising that during the interviews paramedics focused more on downstream changes needed (e.g., adding more resources, public education program, etc.), their observations also pointed to the need for immense upstream change. This was visible in their talk for a change in professional identity and a need for a reorientation of the emergency medical system.

What does the evidence say in terms of the best ways to address the current crisis in health care? A significant portion of provincial budgets direct their monies toward health-care spending, or what James Orbinski describes as, "disease care" (Bresnahan et al., 2017, p. 177). In Alberta, for instance, roughly 33% (see Table 6) of its total budget is spent on health care

> *"Increased spending on traditional health care is not an evidence-based approach to improving health care or the health of individuals and populations."*

(CMA, 2022). However, what we know is that most of the things that make individuals and populations healthy occur outside of modern health care. As Dutton and colleagues (2018) point out:

> The literature suggests that additional spending on health does not necessarily affect population health outcomes, yet in all provinces, health spending increased rapidly after a drop in the mid-1990s, while social spending remained relatively flat … Redirecting resources from health to social services, at the margin, is an efficient way to improve health outcomes. (Dutton et al., 2018, p. E69).

Evidence also points to how the "health care system accounted for only 25% of health outcomes … 'The socioeconomic environment is the most powerful of the determinants of health'" (Dutton et al., 2018, p. E66). However, as Boozary and Laupacis (2020) point out, "[w]hen compared with our international peers, Canada ranked last on the amount we spent on social programs in 2017" (p. E105). In other words, increased spending on traditional health care is not an evidence-based approach to improving health care or the health of individuals and populations.

Table 6: Provincial and Territorial Spending on Health Care

Province/Territory	Health Spending in 2022-23 (in millions)	Share of the health care spending in the PT 2022 budgets	Change from 2021-22 health care spending (in %]
Alberta	23,314	33%	4.2%
British Columbia	27,685	39%	5.4%
Manitoba	7,140	36%	1.7%
New Brunswick	3,268	29%	5.3%
Newfoundland and Labrador	2,446	42%	3.6%
Nova Scotia	5,471	42%	4.4%
Ontario	75,165	32%	5.8%
Prince Edward Island	911	34%	3.0%
Quebec	54,247	42%	5,3%
Saskatchewan	6,824	39%	4.4%
Northwest Territories	595	29%	-11%
Nunavut	472	22%	-11.4%
Yukon	510	26%	-1.5%

Source: Canadian Medical Association (2022)

The point is this: producing healthy environments is the most effective and efficient way to improve the health of individuals and populations, which would also reduce the need for more downstream health-care services and supports (e.g., doctors, nurses, and paramedics). According to a report by Bower (2014), creating a more equal and equitable Alberta could result in a "reduction of up to 33% in hospitalization rates for ambulatory care sensitive conditions, and a reduction of up to 28% in self-injury hospitalizations" (p. 3). In other words, social inequality is costly and bad for people's health:

> In England, a 2012 analysis by scholars at University College London's Institute of Health Equity estimated that continued inaction on existing health inequalities would result in productivity losses of £31–33 billion, reduced tax revenue and higher welfare payments of £20–32 billion and additional health care costs in excess of £5.5 billion per year (Tonelli, Tang, & Foster, 2020, E64).

We may view these upstream or distal forces as the social determinants of health, which refer to the broad and pervasive forces that shape the health and wellness of individuals and populations, including things like social inequality (racism, sexism, classism) and access to food, housing, education, healthy work environments, etc. Literally, our social environments get under our skin:

> Research has demonstrated that socioeconomic and related social factors [e.g. Racism] can alter whether a deleterious (or protective) gene is expressed or supressed. (Braveman & Gottlieb, 2014, p. 25).

As such, "[s]ocial and genetic causes of diseases can no longer be seen as mutually exclusive" (Braveman & Gottlieb, 2014, p. 27) because "events external to an individual human being can influence the expression of his or her genome" (Bresnahan et al., 2017, p. x). In order to improve the health of individuals and populations, we must utilize an upstream perspective that draws attention to the need to prevent illness and promote health by addressing the social roots of illness. The people paramedics meet on the streets are not random. Rather, the work of paramedics and the patients they come into contact with in their everyday work inevitably interface with broader and pervasive social determinants of health.

This section opened with the famed quote from Benjamin Franklin that directs attention to the importance of preventative policies and practices and, within the context here, "upstream medicine" (Bresnahan et al., 2017), all of which highlight the importance of addressing the social determinants of health in order to improve the health and wellness of Albertans. The empirical evidence bears out the notion that "an ounce of prevention is worth a pound of cure":

- "A minuscule increase in social spending results in substantial improvements in avoidable death and an increase in life expectancy" (Sturmberg, 2018, p. E371).
- "… social spending has a stronger positive influence on population health in Canada than does spending within health ministries" (Kershaw, 2018, p. E64).
- "… unaddressed social needs have been associated with higher use of acute care, including both emergency department visits and hospital admissions" (Hahn-Goldberg et al., 2021, p. 5).

This is not new knowledge. In his 2002 report, Roy Romanow discussed the importance of one's social environment to their health status, specifically arguing the need for refocusing our health-care system to a "greater emphasis on prevention and wellness" and "the allocation of new moneys for research into the determinants of health" (p. xx). Even before this, the Lalonde Report of 1981 offered a "new perspective" by voicing similar insights as Seim (2020):

> For these environmental and behavioural threats to health, the organized health care system can do little more than serve as a catchment net for the victims. Physicians, surgeons, nurses and hospitals together spend much of their time in treating ills caused by adverse environmental factors and behavioural risks. (pp. 5-6)

"A need to refocus upstream is not new. Now is the time to act!"

Looking even further, as far back as the 19th century and even earlier, the field of public health was borne out of the recognition that there is an intricate connection between the health of individuals and their social context (Coburn et al., 2003, Labonte et al., 2005). A need to refocus upstream is not new. Now is the time to act! The recommendations that follow are made in light of this well-established evidence:

Recommendation 12: *Alberta must enhance social care spending in ways that are geared toward producing healthier individuals and healthier populations based on the principles of equity and inclusion*. Such a shift toward upstream endeavours include, but are not limited to, ensuring education (K-12 and higher education) in the province is adequately funded and accessible, providing access to affordable and universal child care, developing policies that enhance food security, reducing poverty for children and adults (e.g., increased cash supports to families and other individuals in need, such as Assured Income for the Severely Handicapped), establishing supports to promote positive mental health (e.g., guaranteed basic income), promoting enhanced job security, and focusing on violence prevention and reduction. As one paramedic put it, "an uncaring government simply compounds the cracks in society."

Recommendation 13: *In order to create a more upstream approach to health and wellness in the province, monies currently spent on downstream endeavours (e.g., traditional health care, policing, etc.) will likely require redirection to more upstream endeavours*. In addition, progressive taxation may also facilitate this shift by placing some of the cost of burden on those who most benefit from the current system (i.e. the wealthy). While the burden to pay for such a shift should be placed on those who can afford it more, it is important to note that creating a more equitable society benefits everyone.

Recommendation 14: *While prevention and health promotion should form the mainstay of a shift toward upstream endeavours, services within a publicly funded and not-for-profit system must be available to those in need. The Government of Alberta and Alberta Health Services should confirm its commitment to universal health care and access to services and supports within a publicly funded system*. This includes access to safe consumption sites, as the evidence consistently points to how safe consumption sites have both "health and social benefits" (Kerr et al., 2017, p. 1). Furthermore, the availability of access to such sites inevitably connects to the work of paramedics. One paramedic spoke about this important connection when they mentioned how the "backward ideology" of some policies impact their workload:

> The opioid crisis, the government cut funding to safe consumption sites, cut funding to addiction services, cut funding to the AISH indexes for low-income supports, cut funding for school supports ... lowered the age for transitioning off of government support from childhood to adulthood, cut funding for supports in school for people with special needs. They are not friendly to the psychosocial community supports that are needed … Like, it's [a] spiral effect. (P4)

Recommendation 15: *To facilitate the recommendations proposed above, a Health in All Policies (HiAP) approach should be adopted in Alberta*. According to Tonelli and colleagues (2020):

> Health in All Policies is an approach that systematically considers the health and social implications of policies contemplated by all sectors of government — aiming for synergistic benefits and to minimize social and health-related harms. Health in All Policies is a critical policy lever because many of the drivers for health outcomes — including risk factors for disease, inequitable access to care, and the socioeconomic and environmental determinants of health and wellness — are beyond the reach of the health sector. (p. E61).

A HiAP approach has its roots in a social determinants of health orientation and principles of equity and social justice, which should also include a reconciliation lens, and is geared toward preventing illness before it occurs. All of these approaches are essential to the sustainability of the current health-care system and are the right thing to do both socially and economically.

Conclusion

This report is based on a study that deployed an institutional ethnographic lens to explore the current state of affairs in EMS in Alberta, with an explicit focus on the narratives and work experiences of frontline paramedics. In total, in-depth qualitative interviews were conducted with 27 Alberta paramedics who have over 400 years of accumulative work experience. A multiplicity of topics were explored, including the main factors that contributed to the current crisis in EMS from the paramedics' standpoint, the historical and contemporary roots of this crisis, and how the social organization of EMS in Alberta contributed to this crisis.

Central to how EMS in Alberta are organized is a focus on time, under the mantra, "time is of the essence" (Corman, 2017). In order to achieve this, the system is overly focused on the metrics and deploying accountability and "efficiency" technologies to organize and coordinate the work of paramedics. As this report shows, what the systems fails to capture is the costs of this one-dimensional focus. For example, what appears to count for Alberta Health Service and the Government of Alberta is quantitative ways of knowing, which leads to a metrics-centric system that is neither empathetic to the actualities of paramedics nor does it support the wellness of frontline workers or those they tend to. As made visible in this report, the cost of a "sole trust in numbers" approach to governing EMS is borne primarily on the shoulders of paramedics and their patients and is central to the current state of affairs in EMS in the Province.

In addition to understanding what is and what is not working well in the Province of Alberta in the context of EMS from the standpoint of paramedics, this report also systematically explored opportunities that root change in the lived experiences of paramedics. In this light, a total of 15 recommendations are proposed, including 11 recommendations directed at EMS-specific changes and four recommendations geared toward broader system changes aimed at improving the health of individuals at the individual and population level. While these latter recommendations aim to address the social determinants of health, these social determinants of health have a direct impact on the amount of health-care resources individuals require, including emergency medical services.

References

Alberta College of Paramedics. (nd). Designations of the profession: Wait, what?… Designations?" Available at: https://abparamedics.com/designations-of-the-profession-wait-what-designations/

Alberta Health Services. (nd-a). We support our people. Available at: https://www.albertahealthservices.ca/assets/about/ops/we-support-our-people.html

Alberta Health Services (nd-b). We are stronger together. Available at: https://www.albertahealthservices.ca/assets/about/ops/we-are-stronger-together.html

Alberta Health Services. (2022a). Emergency Medical Services. Available at: https://www.albertahealthservices.ca/ems/ems.aspx.

Alberta Health Services (2022b). Quarterly Emergency Medical Services Dashboard. Available at: https://www.albertahealthservices.ca/assets/info/ems/if-ems-dashboard.pdf.

Alberta Health Services. (2022, July 5). Additional ambulances on the streets in Calgary & Edmonton. Available at: https://www.albertahealthservices.ca/news/releases/2022/Page16676.aspx

Alberta Health Services. (2016). Accreditation, Quality and Healthcare Improvement Response to Accreditation Canada report (3rd Component 2014 – 2017 Cycle). Available at: https://www.albertahealthservices.ca/assets/about/msd/ahs-msd-ahs-summary-2016.pdf

Alberta Health and Wellness. (2001). "A Framework for Reform: Report of the Premier's Advisory Council on Health: Report of the Premier's Advisory Council on Health." https://qspace.library.queensu.ca/bitstream/handle/1974/6875/Mazankowski-Report-2001.pdf?sequence=1&isAllowed=y

Alberta Health and Wellness. (2008). Provincial service optimization review: Final review. Retrieved from https://open.alberta.ca/publications/provincial-service-optimization-review-final-report.

Allana, A., & Pinto, A. (2021). Paramedics Have Untapped Potential to Address Social Determinants of Health in Canada. *Healthc Policy*, 16(3):67-75. doi: 10.12927/hcpol.2021.26432.

Allen D., Braithwaite, J., Sandall, J. & Waring, J. (2016). Towards a sociology of healthcare safety and quality. *Sociol Health Illn.*, 38(2):181-97. doi: 10.1111/1467-9566.12390.

Anderson, D. (2020, Oct. 20). 'It's destroying me as a person': Calgary paramedics say job is taking toll on mental health. CBC. https://www.cbc.ca/news/canada/calgary/ems-mental-health-calgary-1.5768163

Agarwal, G., Angeles, R., Pirrie, M., McLeod, B., Marzanek, F., Parascandalo, J., & Thabane, L. (2019). Reducing 9-1-1 Emergency Medical Service Calls By Implementing A Community Paramedicine Program For Vulnerable Older Adults In Public Housing In Canada: A Multi-Site Cluster Randomized Controlled Trial. *Prehosp Emerg Care*, 23(5):718-729. doi: 10.1080/10903127.2019.1566421.

Aupers, S. (2012). 'Trust no one': Modernization, paranoia and conspiracy culture. *European Journal of Communication*, 27(1), 22–34. https://doi.org/10.1177/0267323111433566

Baker, R., MacIntosh-Murray, A., Porcellator, C., Dionne, L., Stelmacovich, K., & Born, K. (2008). Calgary health region. *High performing healthcare systems: Delivering quality by design*. Toronto: Longwoods Publishing, 221-244.

Barth, J., Greene, J., Goldstein, J., & Sibley, A. (2022). Adverse Health Effects Related to Shift Work Patterns and Work Schedule Tolerance in Emergency Medical Services Personnel: A Scoping Review. *Cureus*, 14(4):e23730. doi: 10.7759/cureus.23730.

Boozary, A., & Laupacis, A. (2020). The mirage of universality: Canada's failure to act on social policy and health care. *CMAJ : Canadian Medical Association*, 192(5), E105–E106. https://doi.org/10.1503/cmaj.200085

Borg, K., Dumas, D., Andrew, E., Smith, K., Walker, T., Haworth, M. & Bragge, P. (2020). Ambulances are for emergencies: shifting behaviour through a research-informed behaviour change campaign. *Health Res Policy Syst*, 23;18(1):9. doi: 10.1186/s12961-019-0517-z.

Bower, S. (2014). Sick of Inequality: The Case for Action by the Government of Alberta on the Social Determinants of Health. Parkland Institute. Available at: https://www.parklandinstitute.ca/sick_of_inequality

Braveman, P., & Gottlieb, L. (2014). The social determinants of health: it's time to consider the causes of the causes. *Public health reports* (Washington, D.C.: 1974), 129 Suppl 2(Suppl 2), 19–31. https://doi.org/10.1177/00333549141291S206

Bresnahan, A., Brindamour, M., Charles, V., & Meili, R. (Eds). (2017). Upstream medicine: Doctors for a healthy society. Vancouver: Purich.

Brydges, M., Denton, M., & Agarwal, G. (2016). The CHAP-EMS health promotion program: a qualitative study on participants' views of the role of paramedics. *BMC Health Serv Res.*, 16(1):435. doi: 10.1186/s12913-016-1687-9

Burawoy, M. (1979). *Manufacturing Consent: Changes in the Labor Process under Monopoly Capitalism*. Chicago: University of Chicago Press.

Busby, C. (2021, Nov. 5). Home care spending data are a launching point for better policies. *Policy Options*. https://policyoptions.irpp.org/magazines/november-2021/home-care-spending-data-are-a-launching-point-for-better-policies/

Canadian Institute for Health Information (2022). Health Workforce Database metadata. Available at: https://www.cihi.ca/en/health-workforce-database-metadata

Canadian Institute for Health Information. (2021a). Health Expenditure Data in Brief. Ottawa, ON. Available at: https://www.cihi.ca/sites/default/files/document/health-expenditure-data-in-brief-en.pdf

Canadian Institute for Health Information. (2021b). How many long-term care beds are there in Canada? Available at: https://www.cihi.ca/en/how-many-long-term-care-beds-are-there-in-canada

Canadian Medical Association [CMA], (2022). Measures to Address Health System Challenges Review of Canadian, Provincial and Territorial 2022 Budgets. Available at: https://www.cma.ca/sites/default/files/2022-09/CMA_System_Funding_2022_Report.pdf

Carter, S., Ritchie, J., Sainsbury, P. (2009). Doing good qualitative research in public health: Not as easy as it looks. *New South Wales Public Health Bulletin* 2009; 20: 105–111. DOI: 10.1071/NB09018

Centre for Addiction and Mental Health (n.d.). CAMH's Mental Health Playbook for Business Leaders: Research-informed Workplace Recommendations from Canada's Foremost Mental Health Hospital and Global Leader in Mental Health Research. Available at: https://give.camh.ca/site/SPageServer?pagename=%2FComponents%2FPages%2FEmailLanding_WorkplaceMentalHealth_2020#cta-sign-up-form

Centers for Disease Control and Prevention. (2020). Overdose Deaths Accelerating During COVID-19. Available at: https://www.cdc.gov/media/releases/2020/p1218-overdose-deaths-covid-19.html

Church, J., & Smith, N. (2006). Health reform and privatization in Alberta. *Canadian Public Administration*, 49 (4): 486-505.

Coburn, D., Denny, K., Mykhalovskiy, E., McDonough, P., Robertson, A., & Love, R. (2003). Population Health in Canada: A Brief Critique. *American Journal of Public Health*, 93(3), 392–396.

Creswell, J. (2007). "Five Qualitative Approaches to Inquiry." *Qualitative Inquiry & Research Design: Choosing Among Five Approaches*. (2nd edition). Los Angeles: Sage.

Corman, M. K. (2017). *Paramedics On and Off the Streets: Emergency Medical Services in the Age of Technological Governance*. Toronto: University of Toronto Press.

Corman, M. K. (2018a). Titrating the rig: How paramedics work in and on their ambulance. *Qualitative Health Research*, 28(1), 47-59. doi.org/10.1177/1049732317739266

Corman, M. K. (2018b). Driving to work: The front seat work of paramedics to and from the scene. *Symbolic Interaction*, 41(3), 291-310. Lead Article. DOI: 10.1002/symb.335

Corman, M. K. (2016). Street medicine: Assessment work strategies of paramedics on the front lines of emergency health services. *The Journal of Contemporary Ethnography*, 46(5), 600-623 DOI: 10.1177/0891241615625462

Corman, M. K. (2009). The positives of caregiving – Mothers' experiences caregiving for a child with autism. *Families in Society: The Journal of Contemporary Social Services*, 90(4), 439-445. DOI: 10.1606/1044-3894.3923

Crawley, M. (2022, June 21). Solutions to Ontario emergency room waits are found beyond hospital ERs. CBC News. https://www.cbc.ca/news/canada/toronto/ontario-emergency-room-wait-times-solutions-1.6492710

Cundy, C. (2022, Jan. 24). Airdrie paramedic suspended without pay following social media posts. *Airdrie Today*. https://www.airdrietoday.com/community/airdrie-paramedic-suspended-without-pay-following-social-media-posts-4988883

Dean, W., Talbot, S., Dean, A. (2019). Reframing clinical distress: Moral Injury not burnout. *Federal Practitioner*, 36,(10): 447). Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6752815/pdf/fp-36-09-400.pdf

Dejean, D., Giacomini, M., Welsford, M., Schwartz, L., & Decicca P. (2016). Inappropriate Ambulance Use: A Qualitative Study of Paramedics' Views. *Healthc Policy*, 11(3): 67-79. PMCID: PMC4817967.

Dutton, D., Forest, P., Kneebone, R., & Zwicker, J. (2018). Effect of provincial spending on social services and health care on health outcomes in Canada: an observational longitudinal study *CMAJ*, 190(3): E66-E71. DOI: https://doi.org/10.1503/cmaj.170132

Easton, R. (2022, Feb. 28). Alberta's ambulance response times have worsened from the start of the pandemic, data shows. CBC News. https://www.cbc.ca/news/canada/calgary/ems-dispatch-red-alert-disconnect-foip-data-1.6365457

Easton, R. (2021, Dec. 11). Alberta communities ran out of ambulances 31 times last weekend, union warns. CBC News. https://www.cbc.ca/news/canada/calgary/alberta-ambulance-code-red-shortage-1.6281900

Farmer, P., Nizeye, B., Stulac, S., Keshavjee, S. (2006). Structural violence and clinical medicine. *PLoS Med*, (10):e449. DOI: 10.1371/journal.pmed.0030449

Ford-Jones, P., & Daly, T. (2020). Filling the gap: Mental health and psychosocial paramedicine programming in Ontario, Canada. *Health & Social Care in the Community*, 30(2), p. 744-752. https://doi.org/10.1111/hsc.13189

Frangou, C. (2022, April 20). PTSD, burnout, and a pandemic. How COVID pushed the country's overworked first responders into emergency territory. *Maclean's*. Available at: https://www.macleans.ca/longforms/canadian-paramedics-are-in-crisis/

Franklin, M. (2022, June 9). Calgary mayor says EMS dispatch is the reason for senior's death in dog attack. CTV News, Calgary. https://calgary.ctvnews.ca/calgary-mayor-says-ems-dispatch-is-the-reason-for-senior-s-death-in-dog-attack-1.5940274

Friesen, E., Kurdyak, P., Gomes, T., et al. (2021). The impact of the COVID-19 pandemic on opioid-related harm in Ontario. *Science Briefs of the Ontario COVID-19 Science Advisory Table*, 2(42). Available at: https://doi.org/10.47326/ ocsat.2021.02.42.1.0

Gentry, J., & Baranowsky, A. (2013). "Compassion fatigue resiliency – A new attitude." Available at: https://psychink.com/ti2012/wp-content/uploads/2013/10/Compassion-Resiliency-A-New-Attitude.pdf

Gerein, K. (2015, Dec. 17). Alberta Health Services sets new performance targets for ambulances. *Edmonton Journal*. https://edmontonjournal.com/news/local-news/alberta-health-services-sets-new-performance-targets-for-ambulances

Gosselin, S., Émond, M., & Marquis, L. (2021). Avoiding ED transport of elders: a need for an integrated multidisciplinary approach. *CJEM*, (6):729-730. doi: 10.1007/s43678-021-00217-5

Government of Alberta. (2020). Alberta: COVID-19 Opioid Response Surveillance Report. Available at: https://open.alberta.ca/dataset/f4b74c38-88cb-41ed-aa6f-32db93c7c391/resource/e8c44bab-900a-4af4-905a-8b3ef84ebe5f/download/health-alberta-covid-19-opioid-response-surveillance-report-2020-q2.pdf

Hahn-Goldberg, S., Pariser, P., Schwenk, C., & Boozary, A. (2021). Opportunity to inform social needs within a hospital setting using data-driven patient engagement. *BMJ open quality*, 10(4), e001540. https://doi.org/10.1136/bmjoq-2021-001540

Health Quality Council of Alberta [HQCA]. (2013). Review of Operations of Ground Emergency Medical Services in Alberta: In Accordance with Section 15(1) of the Health Quality Council of Alberta Act. Retrieved from http://www.hqca.ca

Health Sciences Association of Alberta [HSAA]. (2021). Statistical Report on Paramedical Services in Alberta.

Hills, M. (2000). Human science research in public health: The contribution and assessment of a qualitative approach. *Canadian Journal of Public Health / Revue Canadienne De Sante'e Publique*, 91(6), I4-I7. Retrieved from http://www.jstor.org/stable/41994044

Jackson, H. (2021, Nov. 4). Record Spending: Canada expected to dole out more than $300B on health care in 2021. CTV News. Available at: https://www.ctvnews.ca/health/record-spending-canada-expected-to-dole-out-more-than-300b-on-health-care-in-2021-1.5651634

Kershaw, P. (2018). The need for health in all policies in Canada. *CMAJ: Canadian Medical Association Journal*, 190(3), E64-E65; DOI: https://doi.org/10.1503/cmaj.171530

Kerr, T., Mitra, S., Kennedy, M.C. et al. (2017). Supervised injection facilities in Canada: past, present, and future. *Harm Reduct J* 14, 28. https://doi.org/10.1186/s12954-017-0154-1

Kirmayer, L., Dandeneau, S., Marshal, E., Phillips, M., & Williamson, K. (2011). Rethinking resilience from indigenous perspectives. *Canadian Journal of Psychiatry*, 56(2), 84-91. Available at: https://www.nlclibrary.ca/eds/detail?db=fph&an=59287567&isbn=07067437

Krause, D. (2022, Jan. 24). Alberta promises boost to ailing provincial EMS service. LiveWire Calgary. https://livewirecalgary.com/2022/01/24/alberta-ems-support-dispatch-calgary/

Labonte, R., Polanyi, M., Muhajarine, N., McIntosh, T., & Williams, A. (2005). Beyond the divides: Towards critical population health research. *Critical Public Health*, 15(1), 5-17. doi:10.1080/09581590500048192

Lalonde, M. (1981). A new perspective on the health of Canadians. Minister of Supply and Services Canada. Available at: https://www.phac-aspc.gc.ca/ph-sp/pdf/perspect-eng.pdf

Le, K. (2022, Oct. 11). Broken System, EMS in Crisis. CTV News Calgary. https://calgary.ctvnews.ca/mobile/video?clipId=2538524

Lee, L. (2022, Jan. 20). Calgary patients treated in ER hallways as paramedics needed for 911 calls. CBC News. https://www.cbc.ca/news/canada/calgary/calgary-patients-emergency-room-hallways-paramedics-1.6321833

Lewis, L., Schwarz, E., Jotte, R., & West, C. (2020). The Need for an Integrated Approach to Well-Being in Healthcare. *Mo Med*, 117(2):95-98. PMCID: PMC7144707

Mahmoud, Z., Angelé-Halgand, N., Churruca, K. et al. (2021). The impact of lean management on frontline healthcare professionals: A scoping review of the literature. *BMC Health Serv Res*, 21, 383. https://doi.org/10.1186/s12913-021-06344-0

Maslach, C., Schaufeli, W., & Leiter, M. (2001). Job Burnout. *Annual Review of Psychology*, 52: 397-422). DOI: 10.1146/annurev.psych.52.1.397

Masters, R., Anwar, E., Collins, B., Cookson, R., & Capewell, S. (2017). Return on investment of public health interventions: a systematic review. *Journal of Epidemiology and Community Health*, 71(8), 827–834. Available at: http://www.jstor.org/stable/44647717

McCoy, L. (2006). Keeping the institutional in view: Working with interview accounts of everyday experience. In D. Smith (Ed.), *Institutional ethnography*. Lanham, MD: Rowman & Littlefield, 109-125.

McGinnis, S., Lang, M., & Bradley, K. (2007, January 28). Unhealthy Times: A 24-hour Snapshot of Calgary Hospitals Reveals: [Final Edition]. *Calgary Herald*, p. A3. Retrieved September 9, 2008, from Canadian Newsstand Core database. (Document ID: 1204984021).

McKinlay, J. B. (1997). A case for refocusing upstream: The political economy of illness. In P. Conrad. (Ed.), *The sociology of health and illness: Critical perspectives*, 5th edition (pp. 519-533). St. Martin's Press, New York.

Metzl, J., & Hansen, H. (2014). Structural competency: theorizing a new medical engagement with stigma and inequality. *Soc Sci Med.*, 03:126-133. doi: 10.1016/j.socscimed.2013.06.032.

Michelin, L. (2022, Jan. 4). More ambulance "red alerts" issued in central Alberta, as cold spell drives up emergency calls: AHS is working to improve the situation. *Red Deer Advocate*. https://www.reddeeradvocate.com/news/more-ambulance-red-alerts-are-issued-in-central-alberta-as-cold-spell-drives-up-emergency-calls/

Mintzberg, H. (2017). *Managing the myths of health care: Bridging the separations between care, cure, control, and community*. Oakland, CA: Berrett-Koehler.

Ohshige, K. (2008). Reduction in ambulance transports during a public awareness campaign for appropriate ambulance use. *Acad Emerg Med*,15(3): 289-93. doi: 10.1111/j.1553-2712.2008.00044.x.

Organisation for Economic Co-Operation and Development. (n.d.). Average Annual Hours Actually Worked Per Worker. Available at: https://stats.oecd.org/index.aspx?DataSetCode=ANHRS

Patterson, P. D., Jones, C. B., Hubble, M. W., Carr, M., Weaver, M. D., Engberg, J., & Castle, N. (2010). The longitudinal study of turnover and the cost of turnover in emergency medical services. *Prehospital emergency care*, 14(2), 209–221. https://doi.org/10.3109/10903120903564514

Pfeffer, J. (2018). *Dying for a Paycheck: How Modern Management Harms Employee Health and Company Performance—and What We Can Do About It*. New York: Harper Business/HarperCollins.

Porter, T. (1995). *Trust in numbers: The pursuit of objectivity in science and public life*. Princeton, NJ: Princeton University Press.

Public Health Agency of Canada. (2013). The chief public health officer's report on the state of public health in Canada: Infectious Disease – The never ending threat. Available at: https://www.canada.ca/content/dam/phac-aspc/migration/phac-aspc/cphorsphc-respcacsp/2013/assets/pdf/2013-eng.pdf

Public Services Committee. (2022). Access to Emergency Services. Available at: https://parliamentlive.tv/event/index/ba228c30-7f8d-4d76-bdb4-e36722425e0a

Pyles, L. (2018). *Healing justice: Holistic self-are for change makers*. New York: Oxford University Press.

Randhawa, R., Grant, L., & Slack, J. (2022, April 29). Calgary getting new operations centre to address long ambulance wait times. *Airdrie Today*. https://www.airdrietoday.com/community/airdrie-paramedic-suspended-without-pay-following-social-media-posts-4988883

Rankin, J., & Campbell, M. (2006). *Managing to nurse: Inside Canada's health*

care reform. Toronto: University of Toronto Press.

Region of Waterloo Paramedic Services. (2021). Performance measurement. Available at: https://www.regionofwaterloo.ca/en/regional-government/resources/Reports-Plans--Data/Public-Health-and-Emergency-Services/ParamedicServices_PerformanceMeasurement_Jan_to_Aug_2021.pdf

Romanow, R. (2002). Building on values: the future of health care in Canada. Government of Canada Public Services and Procurement Canada (Report). p. 392. Available at: https://publications.gc.ca/site/eng/237274/publication.html

Ross, T. (2022, July 6). New ambulances won't fix bigger problems, says paramedics' union. CBC News. https://www.cbc.ca/news/canada/calgary/alberta-paramedics-ambulance-1.6512414

Sandbeck, D. (2022, April 14). Opinion: EMS making changes to make sure ambulances are there when needed. *Edmonton Journal*. https://edmontonjournal.com/opinion/columnists/opinion-ems-making-changes-to-make-sure-ambulances-are-there-when-needed

Seim, J. (2020). COVID-19 as social murder. *Spectre*. Available at: https://spectrejournal.com/covid-19-as-social-murder/

Short, D. (2022, June 17). 'She was in a lot of pain': Woman waits six hours for ambulance after breaking hip. *Calgary Herald*. https://www.healthing.ca/news/local-news/woman-waits-six-hours-for-ambulance-after-breaking-hip/wcm/9af6f346-b648-456f-87f3-393b6a8c643a

Smith, D., & Griffith, A. (2022). *Simply Institutional Ethnography: Creating a sociology for people*. Toronto: University of Toronto Press.

Smith, D. (2005). *Institutional ethnography: A sociology for people*. Toronto: AltaMira Press.

Smith, D. (1987). *The everyday world as problematic*. Toronto: University of Toronto Press.

Smith, M. (2022, April 23). 'Our staff is tired': Alberta's chief paramedic on how EMS is coping with spike in calls. *Edmonton Journal*. https://edmontonjournal.com/news/local-news/our-staff-is-tired-albertas-chief-paramedic-on-how-ems-is-coping-with-spike-in-calls

Statistics Canada. (2018). Population and Dwelling Count Highlight Tables, 2016 Consensus. Available at: https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/hlt-fst/pd-pl/Comprehensive.cfm .

Sturmberg J. P. (2018). Creating the conditions that allow health for all to emerge. *CMAJ: Canadian Medical Association Journal*, 190(12), E371. https://doi.org/10.1503/cmaj.69129

Tonelli, M., Tang, K., & Forest, P. (2020). Canada needs a 'Health in All Policies' action plan now. CMAJ, 192(3):E61-E67. DOI: 10.1503/cmaj.190517.

Wasney, J. (2022, Jan. 20). 'It falls directly on the current government':

Concern being expressed over EMS wait times in rural Alberta. CTV News. https://calgary.ctvnews.ca/it-falls-directly-on-the-current-government-concern-being-expressed-over-ems-wait-times-in-rural-alberta-1.5741002

Williams, P., Raisa, D., Baranek, P., & Gildiner, A. (2001). "From Medicare to Home Care: Globalization, State Retrenchment, and the Profitization of Canada's Health-Care System," in Armstrong, Armstrong, and Coburn, eds. *Unhealthy Times*. Oxford: Oxford University Press, 7-30.

Xie, F., Yan, J., Agarwal, G., & Ferron, R. (2021). Economic Analysis of Mobile Integrated Health Care Delivered by Emergency Medical Services Paramedic Teams. *JAMA Netw Open*, 4(2):e210055. DOI:10.1001/jamanetworkopen.2021.0055

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