INAPPROPRIATE USE OF EMERGENCY MEDICAL SERVICES

INAPPROPRIATE USE OF EMERGENCY MEDICAL SERVICES IN ONTARIO

By

DEIRDRE DEJEAN, B.A., B.Sc., M.Sc.

A Thesis

Submitted to the School of Graduate Studies

in Partial Fulfillment of the Requirements

for the Degree

Doctor of Philosophy

in Health Research Methodology

DOCTOR OF PHILOSPHY (2013) McMaster University
(Health Research Methodology) Hamilton, Ontario

TITLE: Inappropriate Use of Emergency Medical Services in Ontario

AUTHOR: Deirdre DeJean, B.A., B.Sc., M.Sc.

SUPERVISOR: Mita Giacomini, Ph.D.

NUMBER OF PAGES: xii, 144

ABSTRACT

Inappropriate ambulance use can be defined broadly as the use of emergency medical services (EMS) transport for non-urgent medical conditions, or when the patient does not use alternate transportation available. It drains health system resources, contributes to low morale among paramedics, and can delay care for patients who may be appropriately treated in alternative settings. An increasing number of studies indicate *that* inappropriate EMS use occurs, but few studies investigate how perspectives of inappropriate use are constructed. This study explores the construct of appropriateness in the context of ambulance use, and examines the implications of varying perspectives on ambulance billing policies.

We present a grounded theory on the construct of appropriate ambulance use from interviews with paramedics in Ontario, national media reports and online reader commentary. Findings show that the role of paramedics varies across regions, and includes various types of care (e.g., emergency response, primary care and preventative care), and transportation (e.g., to the emergency department or urgent care clinics). In turn, constructs of appropriateness vary. In ambiguous cases, paramedics use their perception of the patients' ability or attempts to cope with the medical situation to evaluate the appropriateness of ambulance use. Unexpectedly, the most frustrating cases of inappropriate ambulance use tend to be initiated by organizations, such as long-term care facilities, rather than members of the general public. These findings raise questions about the potential for ambulance user fees conditional on 'appropriateness' to improve either the effectiveness or the efficiency of ambulance services.

This thesis is dedicated in memoriam to Professor Margo Wilson,
who took me outside in the rain to observe the geese
and taught me to “tell the story”.

ACKNOWLEDGEMENTS

This study would not have been possible without the paramedics who generously offered their time and stories. I am in awe of the service they provide and grateful that they shared their experiences with me.

I am incredibly thankful to the members of my supervisory committee, Drs. Philip DeCicca, Lisa Schwartz and Michelle Welsford, for their invaluable expertise, staunch optimism, prompt feedback, and helpful insights.

I would like to thank my friends, colleagues and teachers in the Centre for Health Economics and Policy Analysis. In particular, I am grateful to Terry Martens for her proficient assistance as I fumbled through administrative tasks, and her good humour over the years.

My HRM classmates and comps cohort made the solitary life of a PhD student much less lonely. Thanks to Morgan Lim, Ilia Ferrusi, Nathan Souza, Carolina Aguilar and Natalia Diaz-Granados for the commiseration and reassurance.

Thank you to the Netters for engaging in my health policy-related debates and presenting fresh perspectives when my motivation waned. Thanks especially to Tamara Campbell for offering personal insights and moral support, and Krista Rawson for being an understanding confidante and unofficial career counsellor.

I am grateful to my parents for instilling in me a deep passion and appreciation for education, and for indulging my insatiable curiosity. Jason, Colette and Isaiah ensured that my free time was filled with warmth and hilarity. I am humbled by your unwavering faith in my abilities.

Above all, I am indebted to my supervisor and mentor, Dr. Mita Giacomini, who is the rare sort of grown-up who would recognize a picture of a boa constrictor eating an elephant. She not only encouraged me to forge my own path, but often cleared the underbrush that threatened to obstruct me, and dusted me off when I stumbled. There are no adequate words of thanks, so I offer instead a commitment to strive for the same conscientiousness, thoughtfulness and enthusiasm that she demonstrates in research, teaching, and beyond.

TABLE OF CONTENTS

LIST OF TABLES AND FIGURES

LIST OF ABBREVIATIONS

ACP	Advanced Care Paramedic
CCAC	Community Care Access Centre
CCP	Critical Care Paramedic
CTAS	Canadian Triage and Acuity Scale
ED	Emergency Department
EMS	Emergency Medical Services
MOHLTC	Ministry of Health and Long-term Care
NEMS	Niagara Emergency Medical Services
OHIP	Ontario Health Insurance Plan
PCP	Primary Care Paramedic
RAM	RAND/UCLA Appropriateness Method
RAND	Research ANd Development
RN	Registered Nurse
RPN	Registered Practical Nurse
WREMS	Waterloo Regional Emergency Medical Services

LIST OF APPENDICES

DECLARATION OF ACADEMIC ACHIEVEMENT

The following is a declaration that the research in this thesis has been completed by Deirdre DeJean, who led all components of the project, including the development of the research objectives, data collection and analysis, interpretation of findings and preparation of the written document. It also recognizes the contributions of Drs. Mita Giacomini, Philip DeCicca, Lisa Schwartz and Michelle Welsford in providing guidance and feedback throughout the research process.

CHAPTER 1: INTRODUCTION AND BACKGROUND LITERATURE

The scope and role of emergency medical services (EMS) have evolved from Napoleonic war time stretchers that transported soldiers from the field to well-equipped vehicles staffed by paramedics capable of providing rapid medical interventions. (1) Today, "emergency medical services" is a general term for the examination, care and treatment carried out in connection with the transportation of patients to medical facilities. (2) It includes the interval between the receipt of a call by the dispatch centre and the hand-over of the patient to the receiving unit. (2) The goal of the Ontario Ministry of Health and Long-term Care (MOHLTC) Emergency Health Services Branch is that the public has access to rapid pre-hospital emergency medical intervention and safe, efficient transportation for emergency patients and medically essential non-emergency patients to and from health facilities. (3)

Inappropriate ambulance use can be defined broadly as the use of EMS transport for non-urgent medical conditions, or when the patient does not use alternative transportation available. (4) Patients presenting to the emergency department (ED) with non-urgent conditions are likely to be triaged to the lowest priority and be required to wait several hours for care, which can have an impact on EMS services and resources. Hospital policies often dictate that EMS personnel must wait with patients until their care can be transferred to the hospital. They wait in crowded ED hallways, foregoing sleep, training opportunities and, most distressingly, other - perhaps more urgent - emergency

calls. (5) The inappropriate use of EMS drains health system resources and can contribute to low morale among paramedics. (5-7) Moreover, ED care may be less effective and long waits delay care for patients who may be appropriately treated in a primary care or urgent care setting. (8, 9)

Despite a broad definition, the nuances of inappropriate ambulance use can be difficult to discern in practice. How does one define and identify "non-urgent medical conditions"? Who should decide? What constitutes appropriate alternative transportation? The MOHLTC policy on ambulance billing presents an interesting case for the study of the meaning of inappropriate ambulance use. Ontario is unique in Canada in its approach to billing for ambulance services. While other provincial strategies have ranged from including EMS transport in the basket of services covered by provincial funds (e.g., New Brunswick) (10) to varying user fees based on the distance traveled (11) or patient-based criteria such as age, (12) Ontario differentially bills patients according to the appropriateness of the EMS transport, assessed retrospectively. Emergency department physicians determine whether the patient's ambulance transport was 'essential'. If so, patients are charged the subsidized rate of $45 for the ambulance transport; if not, they are charged $240. (3) Theoretically, the financial penalty should deter patients with non-essential medical conditions from using EMS inappropriately but it remains unclear how EMS users, paramedics and emergency physicians interpret and apply this policy or the impact it has on appropriate or inappropriate ambulance use.

The purpose of this study was to generate insights into the perceptions and determination of inappropriate ambulance use in Ontario. The overarching research question was: *What constitutes 'inappropriate' use of emergency medical services?* This study looks specifically at the perspectives of Ontario paramedics, as well as portrayals of inappropriate use in the Canadian media and perceptions espoused by media readers and commenters.

Emergency Medical Services in Ontario

Historically, the MOHLTC managed and administered all elements of the provincial land ambulance service delivery system including policy development, service design, service delivery and dispatch. In May 1997, the Ontario government announced that full responsibility for funding land ambulance services would be transferred to individual municipalities. (13) Municipalities officially assumed responsibility for land ambulance services from the province in 2000, although the agreement was changed to a 50% funding model with provinces covering half the associated costs. This proportion is based on the budget that was in place when the municipality assumed responsibility for the ambulance service; each municipality is required to submit a business case analysis to justify its request for additional provincial funding (e.g., for acquisition of additional vehicles or equipment, upgrades to stations, staff increases, additional training, etc.).

Billing policies.

Since the introduction of ambulance services as an insured benefit in 1968, users of the system have been required to share the cost of providing the service through a user co-payment fee. Medically necessary ambulance transports are funded under the Ontario Health Insurance Plan (OHIP), with patients normally being responsible for a $45 co-payment. However, approximately 55% of ambulance users are exempt from co-insurance payment if they receive benefits under the Ontario Works Act, the Ontario Disability Support Program Act or the Family Benefits Act; if they live in a nursing home or home for special care licensed or approved by MOHLTC; or if they are being transferred from one health facility to another for insured, medically necessary treatment. If the ambulance use is deemed (by the attending ED physician) to have been a medically non-essential use, patients are billed $240 for the ambulance service. Ambulance resources are intended to be used by patients whose use is appropriate, however, when borderline situations occur, the decision is supposed to favour the patient. (14)

The MOHLTC (14) sets forth the following guidelines to determine whether the ambulance use was appropriate:

> Use of an Ambulance would be considered Essential in the following instances:
> 1. When a person has or is reasonably believed to have suffered an injury or acute illness requiring medical attention and/or medical transportation by ambulance.
> 2. When a person has been evaluated by an attending physician as requiring medical transportation by ambulance to a health facility. Use of an ambulance should be evaluated [as] essential when the condition of the patient was unknown and could reasonably have been suspected to warrant the use of an

ambulance for medical reasons. (p. 19)

The responsibility for billing for ambulance use in Ontario lies with approved public, private and specialized hospitals, and other selected institutions. (14) These institutions and the province share the ambulance co-payment fee. (13) The ambulance service receives none of the payment. The hospitals bill for and collect the fees. They remit $15 to the province for every call at the end of each fiscal quarter, keeping $30 for essential calls and $225 for non-essential ambulance calls. (14)

Since ambulance billing is the responsibility of the receiving institution (and not the ambulance service), patients in Ontario are only charged for the ambulance if they are transported to the hospital. Patients who decline transportation by signing a "Refusal of Service" form are not billed for any paramedic services rendered at the scene. (3) Despite the possibility of distinguishing between the appropriateness of ambulance response and the appropriateness of subsequent ambulance transport, the current study parallels the Ontario ambulance billing policy by focusing primarily on the latter. Table 1 outlines the journey of the patient from 911 call to emergency department care. Along the journey, various decisions are made that might reflect the appropriateness of the ambulance use, culminating with the attending physician's determination of essential or non-essential transport.

Table 1: Patient journey in ambulance system

Phase in patient journey	Potential decisions about appropriateness	Decision-maker
Call to 911	To call or not to call	Patient and/or third-party caller
Call appraisal & ambulance dispatch to scene	Dispatch priority code: Code 1: Deferrable Code 2: Scheduled Code 3: Prompt Code 4: Urgent	Ambulance dispatcher
Paramedics' arrival on scene, treatment & decision to transport	Transportation to hospital or "Refusal of Service"	Patient or substitute decision-maker
Transport to hospital	Return priority code: Code 1: Deferrable Code 2: Scheduled Code 3: Prompt Code 4: Urgent CTAS acuity level: CTAS I: Resuscitation CTAS II: Emergent CTAS III: Urgent care CTAS IV: Less urgent care CTAS V: Non-urgent care	Paramedics
Arrival at ED & handover to ED care	CTAS acuity level: CTAS I: Resuscitation CTAS II: Emergent CTAS III: Urgent care CTAS IV: Less urgent care CTAS V: Non-urgent care	Triage nurse
ED treatment	Determination of essential or non-essential transport	Attending physician

Appropriateness in Health Care

Although a familiar concept in health care, there is no standard operational definition of "appropriateness". In general, appropriateness relates to providing "the right procedure for the right person at the right time and setting". (15) One of the most commonly used operational definitions of appropriateness was introduced by researchers at the RAND Corporation in the 1980s, who proposed that a procedure should be considered appropriate when the "expected health benefit (i.e., increased life expectancy, relief of pain, reduction of anxiety, improved functional capacity) exceed[s] the expected negative consequences (i.e., mortality, morbidity, anxiety of anticipating the procedure, pain produced by the procedure, time lost from work) by a sufficiently wide margin that the procedure [is] worth doing". (16) Conversely, "inappropriate" means that the negative consequences outweigh the expected benefits. (16)

Early definitions of appropriateness focused on the expected health benefits for patients and omitted any concerns about costs. However, as the economic landscape changed from one of perceived abundance to one of perceived scarcity and health care costs continued to escalate, the consideration of costs has increasingly become associated with defining appropriateness. (15) For example, Buetow, Sibbald, Cantrill and Halliwell (17) argue that appropriateness depends on justice in resource allocation and define it as "the outcome of a process of decision-making that maximizes net individual health gains within society's available resources" (p. 264). The definition of appropriateness posited

by Buetow et al. (17) underscores the importance of considering a variety of perspectives when evaluating appropriateness. If appropriateness is determined within the context of "society's available resources", then societal values and perspectives must be taken into account.

Sharpe and Faden (18) propose a conceptual framework for the evaluation of appropriateness that takes into account three key perspectives: clinical, individual and societal. The clinical perspective on appropriateness depends on the patient's clinical profile, the physician's skill, the quality of the evidence supporting a procedure and the procedure's clinical efficacy and effectiveness. (18) Appropriate procedures are those that are supported by a high level of evidence such as a randomized controlled trial or broad meta-analysis of high quality studies and, ideally, whose expected benefits have been shown to exceed the benefits of alternative procedures. (18)

The individual (patient) perspective takes into account each patient's assessment of the clinical benefits in the context of their values, risk preferences, and financial and social circumstances. (18) If a procedure were not viewed as desirable from the perspective of the patient, then it would be considered inappropriate even if it were deemed appropriate from a clinical perspective.

Taking a societal perspective of appropriateness in health care involves asking questions about the healthcare goals we are willing to pursue and how we should prioritize limited social resources. (18) This perspective makes the additional distinction between procedures that are considered non-beneficial and

those are deemed not cost-worthy (where cost-worthiness is based on considerations of social distribution, cost containment and rationing). (18)

Despite the importance of these perspectives in defining appropriateness in health care, the most widely use method to assess appropriateness is based rather narrowly on the question of clinical benefit. The RAND/UCLA Appropriateness Method (RAM) was developed in Southern California in the 1980s. (19) The RAM was devised as a multi-step process to "combine the best available scientific evidence with the collective judgment of experts to yield a statement regarding the appropriateness of performing a procedure at the level of patient-specific symptoms, medical history and test results". (19) First, the latest available evidence on the procedure is synthesized. At the same time, a list of specific clinical scenarios (i.e., indications) is created that categorises patients who might present for the procedure in terms of their symptoms, past medical history and the results of relevant diagnostic tests. A panel of experts is convened, often through recommendations from the medical community. The literature review and the list of indications are sent to the members of the panel. The members individually rate the benefit-to-harm ratio for each indication on a level from 1 (inappropriate) to 9 (appropriate). In a second round, the panel members meet for one to two days and, under the guidance of a moderator, discuss the ratings, focus on areas of disagreement, and are given the opportunity to modify the original list of indications. The panel members then individually re-rate the indications. Finally, each indication is classified as "appropriate", "uncertain" or "inappropriate" for

the procedure in accordance with the panelists' median score and level of disagreement. (19)

The RAM has been criticized for its reliance on the opinions of experts, whose judgments are influenced by their personal interests and perspectives, and affected by differences such as their medical education and cultural background. (15) It also focuses on determining the appropriateness of a procedure for the "average" patient and disregards individual patients' preferences and expectations. (15) Despite decades of focus on the concept of "appropriateness" in health care, the field still lacks a systematic method for determining appropriateness that can synthesize the clinical, individual and societal perspectives.

The preceding discussion of appropriateness in health care has been focused on determining the appropriateness of a procedure or service. Lavis and Anderson (20) note that the appropriateness of the health care setting must also be considered. The appropriateness of the setting is determined by whether the patient's clinical characteristics and the services required match the setting in which the care is provided. (20) A service that is determined to be inappropriate for patients with a particular indication should not be provided in any setting. An inappropriate setting, however, means that a service could potentially be provided in an alternative, appropriate setting and consequently be deemed appropriate. Thus, "identifying care settings as inappropriate depends on the availability of alternative, less expensive settings". (20)

Inappropriate ambulance use.

Over the last few decades, an array of empirical studies has examined inappropriate ambulance use. (4, 6, 21-33) Concerns about the inappropriate use of ambulance services have risen against a backdrop of scarce resources and lengthening off-load delays in emergency departments. In an adult population, the percentage of patients deemed to have used the ambulance inappropriately ranges from 11.3% (21) to 51.7% (31), with most studies reporting rates of inappropriate use of approximately 30%. [See Table 2]

How do the aforementioned concepts of and concerns regarding appropriateness apply to the use of ambulance services? The examination of inappropriate ambulance use requires some distinctive considerations because of its unique role as both health care and expedient transportation. The issues of perspectives, measurement and setting identified in the more general medical appropriateness literature are also relevant.

Table 2: Empirical studies of inappropriate ambulance use

Study	Objective of paper	Who evaluated?	Inappropriate use (Rate)	Country
(21)	To characterize patients whose ambulance transports were believed medically unnecessary	Emergency physician	11.3%	USA
(22)	To better delineate the nature of ambulance misuse	Investigator, using ambulance report and ED record	44.6%	USA
(23)	To characterize pediatric emergency physicians' judgment of the medical need for ambulance transport	Emergency physician	61%	USA
(24)	To identify the patterns of ambulance use, misuse and unmet need in a developing EMS system	Investigator, using dispatch report, ambulance report & ED nurse evaluation sheet	27.6%	Taiwan
(25)	To determine the extent of possible inappropriate use of the ambulance service	Investigator, using ambulance report & Attending RN	47%	South Africa
(26)	To investigate some of the social and practical points surrounding the ambulance call and hence identify a specific group of the population who misused the system	Attending physician	38%	England
(27)	To evaluate the overall efficiency of an emergency ambulance system	Trauma nurse, using medical records, ambulance report	31%	USA

(34)	To describe the characteristics of patients transported by ambulance, in spite of being evaluated by ambulance staff as not requiring pre-hospital care	Ambulance personnel (EMT and RN)	31%	Sweden
(28)	To define the clinical and demographic characteristics of ED patients who used ambulance transport and to determine the reasons users gave for their choice to use ambulance transport	Attending physician	32%	USA
(29)	To evaluate the demographic and medical factors involved in the use of emergency medical service transportation	Investigator, using ED record	28%	
(30)	To examine inappropriate use of EMS and why it occurs	Attending physician	19.8%	Ireland
(31)	To quantify justified and unjustified calls	Investigator, using ambulance report	51.7%	England
(32)	To see if patients could be seen and treated more appropriately in other parts of the health service rather than attending the ED	Consultant, using ambulance report and ED record	30%-32%	Scotland
(6)	To assess the degree of inappropriate use and analyze the reasons for misuse	EMS personnel and attending physician, & ED consultant, using case notes	15.7%	England
(35)	To compare paramedic and non-paramedic ambulance services on the basis of inappropriate ambulance use and unmet ambulance need	Investigator, using observation and patient chart	42%	Canada
(4)	To determine and compare the perspectives of both the EMS provider and the patient regarding the appropriateness of ambulance transport	EMS personnel and patient	Paramedic: 43.5% Patient: 22.3%	USA

Perspectives.

As described above, the determination of appropriateness depends on clinical, individual and societal perspectives. In the context of ambulance use, this is reinforced by the fact that "appropriateness" often depends on the definition of an "emergency", which also varies depending on the perspective considered. (36, 37)

In existing studies of inappropriate ambulance use, when the determination of appropriateness was made prospectively (i.e., during the health care encounter from 911-call to in-hospital assessment), it was most commonly based on the judgment of the attending physician (6, 21, 23, 26, 30) or the attending nurse. (25) Only two studies considered the perspective of the EMS personnel (4, 34) and one asked patients whether their problem required EMS transport. (4) It is not surprising that clinician and patient perspectives on inappropriate ambulance use would differ, but interestingly the determination also differs when considering the opinions of physicians versus paramedics. A growing literature has explored whether paramedics are capable of determining on-scene whether EMS transport is necessary and provides insights into potential differences of opinion. Gratton, Ellison, Hunt and John (38) observe that in 11% of cases, paramedics believed that the patient did not warrant transportation when the ED physicians believed that they did, even though the paramedics and physicians were asked to use the same clinical criteria, e.g., whether the patient required out-of-hospital emergency treatment or expedient transport to an ED. Evaluating the appropriateness of ambulance use involves deliberation about whether and how different clinical

perspectives should be incorporated and what judgment conflicts between clinicians mean.

Vardy, Mansbridge and Ireland (39) empirically examine whether ED staffs' perceptions about the inappropriate use of ambulances were accurate. The study was inspired by a nurse's comment in the ED during a night shift: "ambulances, just white taxis that's all some folk think they are. What a waste". (39) The authors report that approximately 20% of patients arriving by ambulance did not have a clear indication for an ambulance. In 8% of the inappropriate cases, it was "possible to see why the caller believed an ambulance was necessary" (39) but no explanation is given of how the perspective of the patient was considered to be appropriate. In approximately 87% of cases where the decision to use an ambulance was not justified, the decision to seek care *was* appropriate. (39) Based on these statistics, Vardy et al. (39) conclude that the staffs' perceptions of inappropriate ambulance use are accurate.

Only one study of inappropriate ambulance use has measured patients' perceptions of appropriateness. Richards and Ferrall (4) asked patients and their EMS providers whether they believed the medical problem represented a "true emergency requiring an ambulance" (p. 15). Twenty-two percent of patients did not perceive their problem as a true emergency requiring ambulance services while paramedics deemed 44% of the cases inappropriate. What accounts for the discrepancy? Ahl, Nystrom and Jansson (2) argue that paramedics may not be aware of the situation leading to the decision to call an ambulance and may view

the condition less urgently than the patient, particularly since symptoms can decrease once the decision to seek help is made and anxiety subsides. Patients reflect upon different strategies, hesitate, and try to find alternative solutions before seeking EMS transport. (2) To be sure, sometimes the decision is based on misconceptions (e.g., that patients who arrive via ambulance are given faster care than those who walk in), but for the most part Ahl et al. (2) report that patients made great efforts to manage the situation themselves before calling for paramedics. When focusing on the patients' perspectives rather than clinicians', it becomes clearer that perceived appropriateness of ambulance services is not solely related to clinical condition but is influenced by other factors such as the availability or accessibility of other, more appropriate help. (2) Too often, when interpreting the findings of studies on inappropriate use of ambulance services, patients' bad judgments can be confused with good judgments in the context of poor access to more appropriate services. (40)

To date, there has been no public deliberation to gauge societal perspectives on appropriate ambulance use. Kirkby and Roberts (41) conducted a pilot study survey of inappropriate emergency calls in the United Kingdom (U.K.). They presented participants with hypothetical vignettes of common medical scenarios and asked participants whether they would call an ambulance. The majority of participants were able to correctly identify the scenarios when an ambulance would be required, but conversely failed to recognize when an ambulance was *not* required. The authors note that some of the hypothetical

inappropriate ambulance use could reflect confusion about the expanding role of paramedics in the U.K. to provide primary care and discharge patients at the scene. (41)

Measurement.

Although not to the same standards of the RAND method, (19) a symposium was held in January of 2003 that attempted to gather an expert consensus regarding medical necessity in emergency medical services. (42) Thirty-one experts in EMS systems and research participated in a day-long workshop with the goal of agreeing to a set of research criteria that could define the need for ambulance services. As with the RAND method, participants were given a review of the literature assessing EMS medical necessity criteria. During the opening session of the symposium, participants were asked to evaluate the strength of the published evidence. During the closing session, they were asked to evaluate the use of specific triage criteria and outcome measures for assessing EMS medical necessity. The presenting conditions that were considered important when defining the need for ambulance transport were: chest pain, respiratory difficulty, altered mental status, syncope, focal neurologic deficit/cerebrovascular accident and gastrointestinal bleeding. The participants also noted that the need for pre-hospital interventions such as cervical immobilization and airway interventions were important. Potential outcome measures for the determination of appropriate use were: emergent surgery, emergency department diagnosis and procedures in the emergency department. (42)

Among empirical studies of inappropriate ambulance use, there is no consistency in the criteria they use to determine appropriateness. However, most studies share a focus on clinical need as the main criterion to determine appropriateness, which resonates with the expert consensus. Some studies (e.g., (22, 33)) use criteria developed by Schuman, Wolfe and Sepulveda (43) to categorize patients' presenting complaints as "routine" or "nonroutine", where routine means: "[the] patient's life or usual activities would not be immediately threatened by referral to an alternative care facility for treatment at a later time. For example, superficial injuries, lacerations, sprains, dislocations, chronic complaints, respiratory infections, gastrointestinal conditions, genitourinary tract conditions, rashes, nervousness and depression, head-ache, or blurred vision". (43) Routine complaints are flagged as inappropriate uses of ambulance services. While some studies focus on presenting complaints on ambulance call reports, others use outcome measures such as hospital admission as a gauge of appropriateness. Others consider the care administered by paramedics: Chen, Bullard and Liaw (24) conclude that patients who did not require paramedic interventions misused the ambulance. Similarly, Hjatle, Suserud, Herlitz and Karlberg (34) specify that "if the patients were just transported by ambulance without receiving any medical or caring intervention, they were assessed as not needing the emergency service"(p. 152). Some studies note that certain conditions require special consideration when determining appropriateness. For example, Camasso-Richardson, Wilde and Petrack (23) observe that any

ambulance transportation of patients with symptoms consistent with asthma or seizures should be deemed appropriate because of the difficulty a layperson might have in determining the severity of the condition. Similarly, Morris and Cross (31) categorize all but the most trivial head injuries as appropriate. Others (21, 22, 29) suggest that being non-ambulatory is a sufficient criterion for appropriate ambulance use. Only a minority of studies considers non-clinical factors in the determination of appropriateness. Morris and Cross (31) take into account the patient's age and social condition (arguing, for example, that most minor injuries in the elderly warrant ambulance transportation). Kost and Arruda (29) suggest that ambulance transportation is appropriate for pediatric patients if their parents are not on-scene to transport them. Although the criteria used vary across studies, it is clear that the majority define inappropriate ambulance use on the basis of clinical criteria. The exclusion of non-clinical criteria could also be an artifact of the studies' methodologies: while some made prospective determinations of appropriateness (evaluated by attending clinical staff), many empirical studies on inappropriate ambulance use rely on retrospective analysis and base the decision on sources such as ambulance call reports and ED records and notes, most of which emphasize clinical criteria.

Setting.

Lavis and Anderson's (20) distinction between the appropriateness of a service and the appropriateness of a care setting is particularly relevant to the examination of appropriateness of ambulance use. By definition, ambulance services could be

considered both a service and a care setting. The determination of appropriateness can vary greatly depending on whether the ambulance is viewed as a source of medical intervention or a source of expedient transportation *to* medical intervention. Lavis and Anderson (20) argue that a consideration of the appropriateness of a service is based on the clinical benefit to the patient, whereas the appropriateness of a setting depends on the availability of alternative settings.

What are the alternatives to ambulance transportation? In a study of ambulance use in the pediatric population, 71% of the caregivers in the group deemed to have inappropriately used the ambulance acknowledged that their children could have been brought to the ED safely by private car, bus or taxi. (23) Interestingly, the authors note that among the inappropriate ambulance users, 53% report no other means of transportation as the main reason for using an ambulance, but 33% of those patients returned home by private care, which raises the possibility that alternatives may have been available if there had been reassurance that immediate transportation was not necessary. (23) Neely (44) suggests that it is unreasonable to expect the public to know when to call for an ambulance and when to transport themselves; instead, he proposes changes to the EMS system that allow EMS and ED professionals to facilitate non-traditional EMS responses. In Ontario, private patient transfer services are available to accommodate patients who require stretchers; however, these services are unregulated and can be relatively expensive alternatives. (45)

Policy Responses

There are two typical policy responses to combat inappropriate ambulance use: user fees to deter abuse and educations campaigns to raise awareness among the public of appropriate and inappropriate uses of the ambulance.

User fees.

In July 2003, ambulance user fees were abolished in Queensland, Australia, which resulted in anecdotal observations by ED and ambulance staff that more patients were being transported for "minor" indications. (5) It was implied that patients were more likely to use the ambulance inappropriately if there was no user fee charged. Ting and Chang (5) used path analysis to determine whether a free ambulance service incentivizes inappropriate use by patients (low acuity and low admission rates were used to measure inappropriate use in the study). The authors report that free ambulance transportation is associated with an increase in clinically inappropriate ambulance use. (5) In New Brunswick, Canada, ambulance fees were eliminated in April 2005. (46) The Minister of Health and Wellness announced that access to ambulance services was a key component of the provincial health plan, and that eliminating fees would ensure that emergency health services remain accessible and affordable. The government stressed that it would be monitoring usage once the fees were eliminated, and anyone who misused the ambulance service would be billed. In July 2009, the new government reinstated ambulance fees because ambulance usage across the province had jumped by 20% each year, and there were suggestions that the

increase was due to "non-emergency" use. (46) Although they did not record any statistics to determine whether the changes in utilization were the result of increased inappropriate use, the health minister argued, "It's not rocket science when all of a sudden something is free and then, within three years, it escalates by 50 per cent and there's no evidence anywhere in the province that trauma or chronic disease or heart attacks escalated by 50 per cent". (47)

Education campaigns.

Examples of inappropriate ambulance use are particularly abundant in the media. In 2008, the Minister of Health in New South Wales, Australia launched a "Don't Use an Ambulance as a Taxi" campaign in response to frustration expressed by paramedics, who believed there was an increasing number of people who were using the ambulance as a taxi service for the treatment of minor ailments. (48) The campaign included radio advertisements and posters designed to educate the public on the appropriate use of ambulance services. The Minister argued, "this type of behaviour prevents paramedics from attending life threatening emergencies and puts lives at risk". (48) Real-world examples of the misuse targeted by the campaign include "a person asking paramedics to retrieve a pillow that fell off the bed as he was too tired to retrieve it" and "a person claiming she had cut her foot. In fact, she had a piece of beetroot in her slipper". (48) Similar public education campaigns have been initiated in the United Kingdom. A paramedic in the Yorkshire Ambulance Service (YAS) noted, in the press release *Can you spot the difference between an ambulance and a taxi?*, "[W]e do get

quite a lot of unnecessary calls which puts extra pressure on the ambulance crews and can delay us getting to a patient who really does need urgent medical attention". (49) According to the YAS, individuals will call emergency medical services to request a ride home, help making a cold drink, or turning off the television. (49) London Ambulance Service ran advertisements in 50 London newspapers over two weeks and placed posters in the London Underground in 2008, asking the public to call only in the event of a true emergency because the service was similarly frustrated with trivial phone calls. (50) Clearly, there is a perception among ambulance services that inappropriate use is a concerning issue, and education campaigns are one method of combating it.

This study builds on previous research that has addressed the rate of inappropriate ambulance use by examining how it is perceived and defined by the media, online readers and paramedics. It also offers insights into the implications for ambulance billing policies and explores perceptions of policy responses such as user fees and education campaigns.

Chapter 2 describes the research methods and rationale for the methodological decisions made as the study progressed. Chapter 3 discusses the role of paramedics in the health care system, as perceived by paramedics and portrayed in the media. Chapter 4 constructs a theory that paramedics use patients' perceived coping as a mediating factor in determining the appropriateness of ambulance use. Chapter 5 outlines the misuse of ambulance services by organizations and factors that contribute to that misuse. Chapter 6

examines perspectives expressed by paramedics and online commenters, and in the media, about the use of ambulance user fees to deter inappropriate use. Chapter 7 concludes with a summary of the findings in the context of previous research and presents policy implications and directions for possible future research.

CHAPTER 2: RESEARCH METHODS

Study Design

Despite a growing number of studies that have examined the occurrence of inappropriate ambulance use over the last few decades, there is very little exploration of the meaning of "appropriateness" in the context of ambulance use. Previous studies have demonstrated that perceived "inappropriate" uses of ambulance services occur, but examination of how inappropriate use is construed (by physicians, paramedics or the general public) is relatively rare. The exploration of these tacit perceptions and meanings of inappropriate use is well-suited to a qualitative design. Creswell (51) notes, "the intent of a grounded theory study is to generate or discover a theory, an abstract analytical schema of a phenomenon, that relates to a particular situation"(pp. 55-56). I chose grounded theory methodology because I wanted to explore the construct of "appropriateness" as it relates to those involved in ambulance use and to ambulance billing policies.

Grounded Theory

Glaser and Strauss (52) devised grounded theory methodology as a response to the positivistic quantitative research that dominated sociology and nursing in the 1960s. Charmaz (53) explains that qualitative research, at that time, was perceived as "impressionistic, anecdotal, unsystematic, and biased" (p. 5). Grounded theory methodology was an attempt to legitimize qualitative research

by offering systematic strategies for its practice. Glaser and Strauss (52) provided explicit analytic guidelines that validated qualitative research as a credible and rigorous research method. Grounded theory involves developing theory inductively from the data; the theory is "grounded" by the researchers' commitment to themes and issues that emerge from the data as opposed to disciplinary theory. (54) Data collection and analysis occur simultaneously in grounded theory, and theory development occurs during each step of data collection and analysis. (52) Charmaz (53) outlines the other components of classic grounded theory: analytic categories are constructed from data, comparisons are made at each stage of the analysis using the constant comparative method, memo-writing is used to refine categories, define relationships between them and identify any gaps, representative populations are eschewed in favour of theoretical sampling. In earlier schools of grounded theory, the literature review is generally conducted after the analysis.

Since its introduction, grounded theory has evolved and been refined by various qualitative methodologists. For this study, I chose to employ Charmaz's (53) constructivist grounded theory approach, the most recent formulation of the method. Where classic grounded theory proposed that theories emerged from data considered separate from the researcher, constructivist grounded theory posits that the researcher and participants co-construct meaning and that the theories are grounded in the participants' and researcher's experiences. (55) Rather than "discovering" theories in the tradition of classic grounded theory, Charmaz (53)

argues that theories may only be constructed through the researchers' past and present interactions, perspectives and research practices. In a constructivist approach to grounded theory, the researchers acknowledge that they are constructing knowledge and meaning throughout the interaction, instead of viewing the participants' words and actions during an interview as sources of objective data. (55) Charmaz (53) explains that the interpretive nature of grounded theory means entering the research participants' worlds and making concerted efforts to understand and interpret (without being able to strictly adopt or reproduce) their perspectives.

Reflexivity and developing my researcher identity.

Constructivist grounded theory requires reflexivity from researchers: they must be conscious of the social, cultural, political, linguistic and ideological origins of their perspectives, as well as the perspective and voice of the participants. (56) Positional reflexivity, as described by Macbeth, (57) is a self-questioning, analytic exercise that leads the researcher to deconstruct "dualities of power and anti-power, hegemony and resistance, and insider and outsider to reveal and describe how our representations of the world and those who live there are indeed positionally organized" (p. 38). Hellawell (58) argues that considering one's position on the insider-outsider researcher continuum is an ideal springboard for a doctoral researcher's entry into reflexivity.

As a student of health research I was not a complete "outsider researcher", (59) however, with no clinical experience or training in emergency medicine or

paramedicine, I was conscious that I would not be perceived as an "insider" (59) by paramedics participating in the study. I attempted to minimize the disadvantages of not having any *a priori* familiarity with paramedicine or paramedics by reviewing provincial policies, practice guidelines and protocols. Prior to adopting this topic as a research project, I had as a private citizen accompanied four EMS advanced care crews on 12-hour shifts in November and December 2008 as an "EMS observer". This afforded me some familiarity with the practice of responding to patient calls. I did not discuss my possible research interests with the EMS crews at the time; I explained that I was a student who wanted to learn more about what a paramedic "does" and, where appropriate, I asked general questions about their training and experiences.

Observing paramedics in their interactions with patients, one another, and the hospital staff gave me nuanced insights than I had not captured from reading the written protocols. This personal experience with the procedure for responding to patient calls meant that later during interviews for this research project, I was able to focus on the participants' experiences and reflections rather than on procedural details. I was also nominally familiar with "insider" terminology, which helped me use colloquial language (e.g., "frequent flyers") and common abbreviations (e.g., VSA for vital signs absent) during the interviews. The insights I brought as a previous EMS observer helped me develop a better rapport with interview participants, and moved me towards the "insider researcher" end of the continuum.

Data Collection: Sources of Data

Grounded theory studies can rely on several types of data and a variety of data collection strategies. (53) This study drew information-rich data from interviews with paramedics, a media analysis of portrayals of ambulance services in Canadian media and a content analysis of reader commentary on online newspaper reports relating to ambulance billing policies and changes.

Interviews with paramedics.

Qualitative interviewing offers "an open-ended, in-depth exploration of an aspect of life about which the interviewee has substantial experience, often combined with considerable insight". (53) Grounded theory interviews are used to gather specific data for developing theoretical frameworks. Researchers guide the initial construction of data through the development of interview questions, but remain flexible to the emergence of ideas and themes and the need to fill conceptual gaps that arise throughout data collection and analysis. (53) The purpose of the interviews with paramedics was to gather providers' perspectives about inappropriate ambulance use.

Setting.

The interview portion of the study was conducted in the Regions of Waterloo, Niagara and surrounding areas. The Region of Waterloo is located in Southwestern Ontario and is comprised of three urban municipalities (Cambridge, Kitchener and Waterloo) and four rural townships (North Dumfries, Wellesley,

Wilmot and Woolich). The region is 1,382 square kilometers and has a population of approximately 500,000. The region of Waterloo has three hospitals: Grand River Hospital, St. Mary's General Hospital and Cambridge Memorial Hospital. Grand River Hospital operates that largest emergency department in the Waterloo Region. (60) More than 130 people seek emergency care at St. Mary's General Hospital every day. (61) Cambridge Memorial Hospital provides emergency services to 110 patients every day (approximately 40,000 patients each year). (62)

The Region of Niagara occupies most of the Niagara Peninsula and is bounded by Lake Ontario, Lake Erie and the United States. It is 1,852 square kilometers and has a population of approximately 450,000. Like the region of Waterloo, Niagara has three hospitals with emergency departments: Greater Niagara General, St. Catherines General and Welland. The Port Colborne and Douglas Memorial Sites are urgent care centres open 24 hours a day, 7 days a week. Ambulances do not usually take patients to urgent care centres, but ambulances in southern Niagara can take non-emergency patients to the urgent care centres at Douglas Memorial and Port Colborne. (63)

Region of Waterloo Emergency Medical Services (WREMS) employs 190 primary and advanced care paramedics and support staff and operates 19 ambulances and six emergency response units. (64) Niagara Emergency Medical Services (NEMS) is a larger service: it has a fleet of 30 emergency service vehicles and employs over 230 primary and advanced care paramedics. (65)

Participant recruitment.

A purposeful sampling technique was used to recruit paramedics. I chose to recruit participants from two different regions (and thus, ambulance services) in an attempt to account for variations in the perceived role of paramedics (and instances of appropriate and inappropriate use) based on regional policies. Paramedics were invited to participate in the interviews through email invitations in both regions and paper advertisements in Waterloo (hung in a central location accessed by all paramedics before and after each shift), with a website link included that would provide further information. The email invitation to participate was distributed by the Director of EMS in the Region of Waterloo and by the Paramedic Training Superintendent in the Region of Niagara (with prior approval from the Deputy Chief of EMS). Prospective participants were asked to contact me by email or telephone for more information about the study. The only inclusion criterion was that the individual had to have worked as a paramedic responding to patient calls in the region within the last year. Within each region, several paramedics initially responded to the email or poster advertisements, and additional participants were recruited through snowball sampling: participants would recommend other paramedics who might be interested in the study and/or could provide information-rich interviews. (56)

There was potential for self-selection bias in that those paramedics who were particularly concerned about inappropriate use might be more inclined to participate in the study. However, the interviews focused on broad concepts such

as the role of paramedics as well as appropriate and inappropriate uses of the ambulances. These sorts of questions (which focused on *what* constitutes inappropriate use and *how* to identify examples) should have been less affected by biased perceptions of *whether* inappropriate use occurs.

Potential participants who contacted me were given more detailed information about the intended interview. If they were interested in participating, they were asked to provide a convenient time and a phone number where they could be reached for the interview. Each interview started with me briefly describing my background and the rationale for the study, as well as me addressing any potential benefits or risks to participants. After my initial, informal interactions with paramedics, I sensed that they might have particular concerns about discussing their experiences and describing patient cases. I reiterated the details about patient cases that could be discussed without violating the patients' privacy, and shared my strategies for maintaining their privacy (e.g., not reporting identifiable information about patients in any of the study publications; keeping interviews transcripts in a locked cabinet and on a password protected computer). Before the start of the questions, I obtain informed consent verbally from each participant by asking: "Do I have your permission to begin asking you questions?". All participants who started the interview were mailed a $10 Tim Hortons gift card to compensate for their involvement in the study and a hard copy of the letter of information (which was also attached to the initial email invitation).

Interviews continued until analysis revealed that the categories central to the developing theory were saturated. Charmaz (53) describes this as the point when "gathering fresh data no longer sparks new theoretical insights, nor reveals new properties of these core theoretical properties". (p. 113) Participants who expressed interest in the study based on the initial email were still encouraged to participate, but the poster and website advertisements were removed and active recruitment ceased.

Interviews.

I conducted semi-structured interviews with 19 paramedics from the regions of Waterloo and Niagara between March 2011 and June 2012. Telephone interviews were offered as a convenience since paramedics work hectic and irregular hours. Each paramedic participated in one interview, which ranged from 27 to 64 minutes and averaged 38 minutes. Interviews were audio-taped and transcribed verbatim. I took notes on key points during the interview to help guide the follow-up questions and probes. After each interview, I recorded field notes that highlighted insights from the interview and made cursory comparisons to other interviews. I also reflected on potential changes to the interview guide and issues to explore in future interviews.

Interview guide.

The purpose of the interview was to elucidate paramedics' perceptions of inappropriate ambulance use. This concept was contextualized within broader,

open-ended questions about the role of a paramedic in the health care system and perceptions of appropriate ambulance use. Participants were asked their thoughts on ambulance billing policies, the MOHLTC's policy and procedure for determining "non-essential" use, and factors they believed contributed to inappropriate use. Charmaz (54) notes that because "analysis and data collection proceed simultaneously, a researcher can follow up on ideas as he or she creates them" (p. 1168). After the first interview, my initial coding revealed a need for a deeper understanding of the similarities and differences between inappropriate ambulance use and inappropriate ED use. This question was asked in subsequent interviews. Similarly, after three interviews, the theme of organizational misuses (i.e., emergency calls originating from organizations such as long-term care facilities rather than from the general public) emerged prominently. The interview guide was thus expanded to include a broad question about organizational misuses. (Appendix A)

Media analysis.

Media analyses can provide insights into public conversations about a particular issue and can complement interview data. Unlike qualitative interviews, researchers themselves do not affect the construction of extant texts such as media reports. (53) They are constructed within social, economic, historical, and cultural contexts and "reflexive of the process that has produced them". (66) Altheide (66) proposes an approach to qualitative media analysis that eschews the traditional positivistic assumptions of content analysis (e.g., the emphasis on numbers and

measurement) and focuses instead on gathering narrative data and providing an interpretive understanding of the media reports. The purpose of the media analysis was to gather constructs of appropriateness related to ambulance use in public discourse.

Sampling frame.

The search for media reports was conducted using Factiva, a multi-disciplinary database published by Dow Jones and Reuters, which provides access to current and archived news and business information worldwide. More than 2,500 newspapers are included in Factiva, with same-day and archival coverage. I searched for reports published in the 5-year period from January 1, 2007 to December 31, 2011 using the free text keyword search for "paramedic* OR ambulance* OR 911 OR EMS". The search was limited to Canada and included all English-language media sources. I chose to include all provinces and territories because I was aware of policy changes within that time period related to ambulance services and billing outside of Ontario that had garnered media attention, and anticipated that the national perspective would offer more information-rich data than a focus on Ontario media sources alone.

Theoretical sampling.

I initially read through the results of the Factiva search focusing on the title of the media report and the keyword (i.e., paramedic*, ambulance*, etc.) in context. I excluded reports that contained incidental mentions of paramedics (e.g., traffic

accidents and routine responses to emergencies) and retrieved reports that included ambulance services and/or paramedics as a primary subject. This cursory exclusion narrowed the set of media reports from 13,513 to 2,280.

To further refine the sample, I used a technique that Altheide (66) refers to as progressive theoretical sampling. The purpose of progressive theoretical sampling is to "select materials for conceptual or theoretically relevant reasons". (66) This sampling was based on a full-text review of the media reports. The first stage focused on identifying media reports that addressed issues broadly relating to the construct of "appropriateness", and narrowed the set to 1,144 media reports. With repeated reading, I was able to identify major concepts that captured a rich sample of the national discourse. I focused the final sample on three theoretically relevant themes that revealed perspectives about appropriateness: organizational structure of the ambulance service (n=186), off-load delays (n=98) and changes to ambulance fees (n=36). I also chose to include all media reports from Ontario (relevant to appropriateness, n=435). (Appendix B)

Online commentary.

Although the analysis of media reports is a well-established research method, the analysis of readers' online commentary and reactions to media reports is a relatively new research endeavour [see (67-69) for examples]. The purpose of analyzing online reader commentary was to capture public perceptions about inappropriate (and appropriate) ambulance use. I had originally planned to conduct individual interviews with patients who had used an ambulance to access

the ED but recruitment challenges and time constraints made that source of data unfeasible for the current study. The inclusion of reader commentary instead provides insight into societal perspectives on ambulance use and services.

Sampling.

I conducted an advanced Google News search to identify online news sources that allowed readers to leave online comments, using the keywords "ambulance fees". I limited the search to Canadian and English-language sources posted from January 1, 2008 to December 31, 2012. I chose to focus the search on ambulance fees because changes to ambulance fees had been a subject of election debate in several provinces during that time period. I anticipated that the topic would garner significant public and reader reaction and discussion, and could provide insight about the construct of "appropriateness" and context for the Ontario billing policy. I conducted the first search on July 26, 2011 and repeated the search on January 5, 2013 to capture any newly published or previously missed reports.

The search strategy retrieved 52 publicly available online news reports on the subject of ambulance fees. Thirty reports were excluded because they did not allow for or contain any reader commentary. The final sample news reports (n=22) had a combined total of 692 reader comments, with commentary on individual reports ranging from 2 to 298 comments.

Data Analysis

Data analysis in constructivist grounded theory is inductive and iterative. Charmaz (53) advocates for a flexible coding process that consists of at least two main phases: 1) initial coding, when all possible theoretical directions are discerned from the data and used to guide further data collection and analysis, and 2) focused coding, when the most significant or frequent initial codes are used to sort, synthesize and integrate the data. In this study, I conducted initial coding, focused coding and theoretical coding.

Initial coding sticks closely to the data. Initial coding often begins with line-by-line-coding, which literally involves naming each line of written data. This detailed analysis helps to identify implicit meanings and tacit assumptions. Charmaz (53) recommends coding data as actions to reduce the likelihood of making conceptual and theoretical leaps. Similarly, studying the data line-by-line lessens the tendency of the researcher to superimpose preconceived notions on the data. (53) I conducted initial coding of interview transcripts, media reports and the online commentary by hand. Lines of text were underlined and assigned a code, ultimately leading to a code list of significant or frequently occurring codes.

The next stage of coding is focused coding, which aims to synthesize and explain larger segments of data. (53) After manually coding the texts, I created a database of electronic copies using HyperRESEARCH qualitative analysis software. Each interview transcript, media report and report of online commentary was entered into the project database, and the code list of significant

or recurring initial codes was imported. The goal of focused coding is to determine the adequacy of the selected group of initial codes and to make decisions about whether they categorize the data intelligently and completely. (53) I recoded the electronic copies of data in HyperRESEARCH using the tentative code list and compared the segments of data to each other and to the codes. I refined the focused codes and developed categories.

The final stage, theoretical coding, involved examining the relationships between focused codes. (53) Theoretical codes can help to tell a coherent analytic story, but must fit the data and early analysis. In trying to determine the "story", I developed diagrams to illustrate the major relationships between codes and wrote analytic memos about the connections I observed. While examining the relationships between codes, I reviewed the texts again, revised existing codes and noted new codes. When data did not fit the emerging theory, I revised the theory. I shifted and refined the links between categories until a logical story emerged. The resulting theory was presented to research team members and at a conference as an opportunity to challenge the theory I had constructed.

Memo-writing.

Memo-writing is a reflective process that encourages researchers to remember, question and analyze the data that are generated during the research process. (55) Charmaz (53, 54) suggests the use of memos to help think about the data and to discover and capture ideas about them; memo-writing is one method of systematically examining, exploring and elaborating on emerging data. I wrote

memos after each interview and throughout data analysis to fine-tune data collection and to elaborate on the connections I was making between codes. Memos were uploaded to HyperRESEARCH so that I could link them to the data.

Trustworthiness.

There is a variety of criteria available for the evaluation of qualitative research. Lincoln and Guba (70) propose four criteria to evaluate the trustworthiness of qualitative research, which can be considered to parallel the positivistic criteria for "rigor": credibility, transferability, dependability and confirmability.

Credibility.

Credibility is analogous to, although not the same, as the quantitative concept of internal validity. Reflexive analysis (or "bracketing" (56)) is one strategy for ensuring the credibility of qualitative research. (71) It requires researchers to examine the influence of their backgrounds, perceptions and personal interests on the research process. A field journal can be a helpful tool for researchers to capture these experiences and reflections. (70) I kept a journal throughout the research process. I used the journal to record decisions about the logistics and methods for the study, to reflect on challenges and to record the rationale for changes as the study evolved. I also used the journal to reflect on thoughts, feelings and ideas that were evoked or generated throughout the study. Krefting (71) argues that in recording these thoughts and feelings in the field journal, researchers "may become aware of biases and preconceived assumptions". (p.

218)

Triangulation is another strategy for enhancing credibility in qualitative research. (71) Triangulation is based on the notion that the convergence of multiple perspectives helps ensure that all aspects have been investigated; it minimizes biases that might arise from relying on a single analyst, method or data source. (56) In particular, this study aimed to triangulate data sources. By comparing paramedics' interviews with media perceptions and public commentary, I was able to check the consistency of overall patterns of data from all three sources. As a check of potential bias in my data analysis, I also had another researcher analyze one of my interview transcripts independently and compared and cross-checked her initial coding with my own.

Transferability.

Transferability is sometimes compared to the criterion of generalizability in quantitative studies. "Generalizability" refers to whether sample-based findings apply to the more general study population from which the sample is drawn. However, transferability refers to whether a grounded theory (or other inductively developed insights) may be applicable in different settings, since each qualitative research setting is unique. Lincoln and Guba (70) argue that "the degree of transferability is a direct function of the similarity between the two contexts, what we shall call 'fittingness'. Fittingness is defined as "the degree of congruence between sending and receiving contexts". (70) By describing the context and setting used in this research study, I am enabling the reader to assess the

transferability of the findings and the degree of congruence with other settings.

Dependability.

Dependability can be compared to the quantitative criterion of reliability. It relates to the consistency of findings, which can be difficult to measure in qualitative research. Krefting (71) recommends a code-recode strategy to increase the dependability of a study: after coding a particular body of data, the researcher waits at least two weeks and then recodes the same data and compares the findings. I recoded the first five interviews after a period of approximately two months to ensure that I was comfortable with the focused codes that formed the preliminary code list. There were slight differences in the wording I chose for initial codes, but the substantive coding was consistent with the first round of coding.

Confirmability.

Finally, confirmability (or "objectivity" in a quantitative approach) can be established through an audit trail. (71) Auditability requires that an external reviewer could follow the progression of a study and understand how and why decisions were made, and ostensibly arrive at similar conclusions. (71) I have described my analytical decisions and progress throughout this chapter and others in this thesis. Patton (56) argues that in the context of doctoral research, the doctoral committee provides the audit that establishes the criteria of confirmability and dependability.

Ethical Considerations

This study was approved by the Hamilton Health Sciences/Faculty of Health Sciences Research Ethics Board (#10-373). Niagara Emergency Medical Services requested that their regional ethics board review the study before recruiting paramedics from their service. The study protocol and recruitment materials were thus submitted to the Niagara Health System Research Ethics Board, which also granted approval.

The names and identities of interview participants were kept confidential. Paramedics were assigned an interview number that was used to label digital files, transcripts and notes. In turn, these files were password protected and/or kept in a locked cabinet. Once participants had confirmed the receipt of compensation, all contact details were destroyed.

Paramedics are bound to maintain the confidentiality of their patients, and the interviews conducted reflected this standard. None of the interviews included identifying information about individual patients. In an attempt to further protect the privacy of EMS patients, I ensured that none of the direct quotations in this thesis described salient or potentially unique patient cases.

CHAPTER 3: THE ROLE OF PARAMEDICS

In this chapter, I discuss how paramedics and the media define and portray the roles of paramedics and of ambulance services within the health care system. I delineate the two primary functions of ambulance services: care and transportation. Care provided by paramedics can include on-scene care without transportation, primary care or preventative care. Focusing on the care provided by paramedics highlights their relationship to other health care professionals, such as nurses. The transportation offered can include the traditional ED destination or expanding options such as urgent care centres. As paramedicine explores opportunities for more responsibility (i.e., in determining appropriate care destinations for patients), the role of paramedics shifts from the early "ambulance drivers" to health care professionals.

The findings in this chapter are drawn from interviews with Ontario paramedics, Canadian media reports and online reader commentary. My analysis of media reports and commentary is primarily intended to account for public portrayals of the role of paramedics and perceptions of appropriateness, which can contrast with and correspond to paramedics' experiences.

The Role of Paramedics

The role of paramedics is traditionally defined as the care and transportation of patients to (and sometimes from) the hospital. Increasingly, these two roles have been separated in practice, with a growing emphasis on the care paramedics provide. The role has evolved from the early days of "advanced

taxi drivers with some first aid" (Paramedic#8) to focus on paramedics as health professionals.

Care.

Paramedics demonstrate the importance of the care they provide particularly when they work without their ambulances. Paramedics provide care without transportation in three ways: 1) the care they provide within the context of a 911 call, but without subsequent transportation to a hospital; 2) in the context of an expanded scope of practice in which paramedics provide primary care in the field (i.e., "house calls"); and finally and similarly 3) when paramedics expand their role to include preventative care to those in the community.

On-scene care without transportation.

There are many instances when paramedics respond to a 911 call and are able to provide sufficient care to the patient on-scene such that transportation and evaluation at the hospital may no longer be required. Several paramedics referred to the treatment of diabetic hypoglycemia (i.e., low blood sugar) as an example of primarily on-scene care. The process of treating a diabetic patient involves administering a blood sugar test and performing an assessment, interviewing the patient and reviewing their history, correcting the blood sugar imbalance with carbohydrates, then reassessing until the patient's blood sugar levels are corrected. This process results in a longer amount of time spent on-scene with the patient

but, for the most part, these ailments are resolved in the home and transportation to the hospital may be unnecessary.

Paramedics also cited lift assists (calls in which the patient has had a slip or fall that leads to an inability to resume their normal position (e.g., in a chair or bed)) as a common example of care for a patient that might not require transportation to the hospital. Falls in the home are a customary occurrence among individuals with mobility impairments, who might otherwise have personal support workers or family members to assist them, but are sometimes left alone:

> So they call us, they call 911, we get there, we pick them up, we put them where they want to be, we assess all their vitals and we do an assessment and they don't want to come with us and we sign them off. So we do a lot of those kinds of calls, too, not just the medical ones. (Paramedic#16)

Paramedics also noted that, in Ontario, these examples of care without subsequent transportation to a hospital are provided at no cost to the patient because the hospitals are responsible for billing patients for the ambulance transportation co-payment and this is only done for those patients who are transported to the hospital. In other provinces, where ambulance services are responsible for billing, patients are often charged for the paramedics' response to a call, even if transportation to the hospital does not occur.

Although paramedics disagreed about whether responding to non-medical needs (such as lift assists) should fall under their purview, they agreed that, in general, the care they provide in the absence of transportation should at least be

acknowledged in current legislation. Many paramedics felt that this part of their role was not recognized, both implicitly through Ontario's receiving hospital billing policy, and implicitly in their forms, which emphasize the transportation of the patient. One paramedic, for example, argued that the paperwork documenting patients' refusal of transportation should be changed to reflect that paramedics might have provided care despite the transportation refusal:

> Right now we get them to sign a form saying they refuse all treatment and transport to a hospital when really we could've gone, provided them treatment on scene, that they're happy with and that's appropriate, but then we're getting them to sign documentation that says we're getting them to refuse transport *and* treatment. So there's not really... it's very archaic… So there almost has to be a couple of different processes or still an informed process but there's no recognition that we are actually providing any service to them - besides driving them to the hospital. (Paramedic#8)

Clearly paramedics can respond to calls and provide some care without necessarily transporting patients to the hospital.

Primary care.

Although the above examples of providing care without transportation occur within the current model of paramedicine, there are some calls in the literature and from governments to expand the role to include more primary care. Paramedics in this study expressed interest in the inclusion of more primary care, particularly because they are already expected to respond to non-emergency medical needs:

> I don't see why there couldn't be more of, kind of a primary care focus as well, given the limited resources in the system overall. I think we could since we are already being called to respond to

> people that aren't necessarily dealing with life-threatening emergencies that we would like to deal with and that we are kind of designed for, we are already being called to everything else…I think we could probably be better utilized to deal with everything else more effectively since we are there anyway. (Paramedic#5)

This response highlights that the shift of emphasis from emergency response to primary care has emerged naturally in response to gaps within the health care system. Many paramedics cited examples where patients who called 911 did not need the specialized care available at an ED, and suggested that they might be able to meet the patients' primary care needs. Calls for expansion of their scope of practice have also arisen in response to the growing skill set of paramedics; British Columbia's Health Services Minister, in seeking to change the legislation governing ambulance services and paramedics that would allow for expansion of the role to formally include primary care and non-emergency services, noted that such a change would "allow paramedics to more fully utilize their skills". (72)

Preventative care.

As with the expansion to include primary care in the scope of practice, the role of paramedics in providing preventative health care has emerged in some regions as a response to current gaps in the health care system. When describing his vision for paramedicine in New Brunswick, the Ambulance New Brunswick president and CEO referenced prevention when he suggested that paramedics should

"evolve from being a reactive force to being a more proactive part of the health care system that can help prevent injuries and illness". (47) The preventative outreach program in Calgary EMS demonstrates how the role of a paramedic can include preventative activities. Harry Chase, a member of the Legislative Assembly of Alberta, accompanied Calgary paramedics during a night shift and described how the program operates in an article for the Calgary Herald:

> When not responding to a call, the ambulance crew, in collaboration with social agencies, searches the known and yet-to-be discovered haunts of the homeless, hoping to head off tragedy. We drove down back alleys, along the river pathways, looking for the potential signs of an individual in distress. (73)

While the aforementioned program targets people who have not yet contacted the emergency system, other preventative measures are aimed at preventing the recurrence or exacerbation of a situation that has led to a patient calling 911. In Hamilton, Ontario, a pilot project allows paramedics to refer patients to other support services using an electronic referral system linked with the Community Care Access Centre. While previously these referrals had to come from the hospital, they were sometimes missed by hospital staff, leading to a cycle of hospital discharge and subsequent re-admission if the root problem was not addressed. Giving paramedics the ability to initiate referrals is a natural shift given their role in first-response to calls:

> As the first responders on the scene, paramedics are uniquely positioned to observe the circumstances in a home that may have led to the problem. It could be anything as simple as trip hazards that caused an elderly person to fall, to rotting food and unsanitary conditions or other social problems. (74)

Even in the absence of a formalized program of referral, paramedics can address these contributing factors by communicating with the hospital staff during the course of a regular ambulance response to a patient's house. Paramedics are able to see many contributing factors that may be missed or misunderstood:

> Um, we're able to recognize things that are in homes that contribute to people's problems. You know, if the person goes into the family doctor and says I'm short of breath and if the doctor says, "Well, do you smoke?" and they say no, but because we're at the house and we see that three or four other family members smoke, the house is filled with it, then you could bring that to the attention of the emergency doctor when we bring the patient in and say, "Listen, this person says they don't smoke, but they live in a house filled with smoke. Perhaps we could educate the family and say, you know, your mom's got COPD…". Little things like that that you could see and then fill in the gaps. (Paramedic#9)

Engaging paramedics in preventative care also involves expanding beyond the typical 911-response to include scheduled interactions with the community. For example, the director of the public education for the paramedics' union in British Columbia proposed that paramedics participate in preventative services like giving seminars to seniors on how to avoid dangerous falls, teaching CPR in the community or filling in at immunization clinics. (72)

Comparisons to nursing.

With the increasing focus on the paramedics' clinical skills and the growing gamut of patient care they provide, both the media and the paramedics interviewed compared the role to other health professionals such as nurses, despite clear

differences in training and education. In some cases, the parallels between paramedicine and nursing are more formal; in others, they are made informally.

A media report from 2009 described a proposed initiative in Manitoba that would see paramedics travelling in sedans to respond to non-life-threatening 911 calls:

> The new "community paramedics" would act more like nurses who make house calls, responding to a whole host of less serious cases that don't need a $1-million ambulance, two highly-trained medics and an automatic trip to the nearest emergency room. That includes everything from worrisome flu to sprained ankles, diabetes and seizures. (75)

When the role of paramedics emphasizes the provision of care over transportation, paramedics become more "like nurses". In another instance, paramedics assumed the role of nurses quite literally, as one report from Halifax noted: "The South Shore district health authority in Nova Scotia is so short of nurses it has hired two paramedics to do the job of registered nurses in a local emergency department". (76) Using paramedics as nurses is a temporary measure to alleviate the shortage of nurses, but it highlights paramedics' ability to provide care to hospital patients.

Offload delays require paramedics to provide not just "pre"-hospital care but also "in"-hospital care while waiting with their patient. As paramedics spend less time responding to calls and more time in hospitals with patients, the parallels between paramedics and nurses have also been observed informally. The following media account described

the observations of a woman waiting at the hospital with her father, who had been brought in by ambulance after a fall and stayed in offload delay with the paramedics:

> The paramedics were performing the duties of nurses in those hallways -- fetching water, juice, sandwiches, medications, taking blood pressure, temperatures, changing dressings on lacerations, emptying catheter bags, and in one case, dealing with a very large, angry patient who had been there for eight hours, in the hall. She had soiled her diaper, wet herself, and required the assistance of several paramedics to strip her down, bathe her, and dress her in hospital attire, all behind a flimsy makeshift curtain. (77)

The remarks reinforce the overlap in responsibilities of paramedics and nurses in performing tasks that, when conducted in the field would be considered within the purview of paramedicine, but in the hospital setting are generally considered "duties of nurses" (e.g., administering medication, taking patients' blood pressure and temperature, etc.).

Transportation.

Despite an increasing shift towards the provision of care, the role of paramedics still fundamentally involves the transportation of patients. For the most part, ambulance services have moved away from the strict transportation of otherwise stable patients (e.g., hospital transfers). Although they were initially part of the role of paramedics, many regions have shifted scheduled, non-urgent patient transfers that might not otherwise require the skills of a highly trained paramedic to private transfer companies (whose employees often have more basic first aid skills). In describing the search for a contractor to transport non-urgent patients to

medical facilities, the regional director of patient transportation services in a health authority in British Columbia explained that "this model of transportation is common across Canada […] We rely on premium 911-ambulance resources to move very stable patients. It's a costly and inefficient use of those resources". (78)

Transportation is undeniably a vital component of paramedics' response to 911 calls. Paramedics in this study questioned whether this transportation must always be to the hospital ED, as most models currently dictate, or whether the role of paramedics might be expanded to include other care destinations. This would involve an increase in responsibility from the traditional "you call, we haul" focus, to one that requires paramedics to triage patients to the most appropriate destination. In Edmonton, for example, there is acknowledgement that many patients who call 911 do not necessarily need to be seen at the ED:

> About 30 per cent of patients handled by emergency teams could easily be handled elsewhere, he said. Paramedics will make that assessment. "If an ambulance is called out and someone has maybe imbibed a little bit too much and fallen, and maybe only needs to go see a doctor at a clinic, they will now have the option of taking that patient to a clinic," [Health Minister] Liepert said. (79)

In response to proposals from government and ambulance services for paramedics to have the ability and responsibility to determine appropriate care paths for patients who call 911, some physicians have expressed concern that paramedics might triage patients incorrectly to non-ED destinations and/or destinations that are not equipped to meet the needs of the patients. However, those risks must be

weighed against concerns about the repercussions when patients are unnecessarily taken to the ED, which is inevitable in the current model that only allows transportation to the ED. Alberta's health minister noted that giving paramedics these responsibilities would "likely end the clunky practice of a municipally paid paramedic being forced to essentially babysit patients in the emergency ward". (79) Governments have echoed similar sentiments in other provinces. The community paramedicine program in Winnipeg, for example, also aimed to increase the triage responsibilities of paramedics:

> The community medics would come equipped with most of the same gear an advanced-care paramedic carries, like medications and intravenous supplies. However, they would use a slightly more sophisticated triage check-list like the one nurses use in the emergency rooms. Based on that check-list, the medics could treat someone on the spot, call a taxi or a stretcher service to transport someone to a clinic, or strap the patient into the Ford's passenger seat and provide a lift to an urgent-care clinic or even the ER. (75)

From "ambulance drivers" to "paramedics".

Regardless of the mandated focus on care and transportation, it is clear that with increased training and more sophisticated technology, the paramedics' role has evolved from its initial focus on transporting the patient to the hospital as quickly as possible. As one paramedic remarked, "Our job has expanded over the years to involve a lot more things than we used to do. It used to be just blanket, oxygen, throw 'em in the back and go, right? We were just advanced taxi drivers with some first aid". (Paramedic#8) Today, technology allows paramedics to be much

more actively involved in the treatment of patients, as exemplified in the following media account of a response to a heart attack:

> Their four hands busy, paramedics kneel over a man with chest pains lying on the bathroom floor. Thinking heart attack, one grabs oxygen, another grabs the IV. First they try Aspirin, then Nitro. Since 2005, they've also been able to attach dollar-sized sensors to the patient's chest, arms, legs and back, and within seconds get a detailed electrocardiogram picture of a heart that might be blocked and failing […] If the reading suggests a heart attack, paramedics can fax the report to the on-call cardiologist at the push of a button. As long as the patient doesn't have a history of stroke or excessive bleeding, for example, a paramedic can administer a clot-busting drug right in the ambulance. (80)

Reports describing the technology available to paramedics and the interventions they might perform are common in the Canadian media as a way of reminding the public of the benefits of calling 911 when faced with a suspected health emergency, rather than trying to drive themselves to the hospital. Too often, the public considers the ambulance as simply an alternative means of getting to the hospital. In discussing the option to call an ambulance versus driving, one reader of an online media report compared the time it would take for ambulance transportation to the hospital versus driving immediately:

> Do you have kids? Would you really wait upwards of 30 minutes for an ambulance to arrive (we live out of town) then another 30 to get them to the hospital? When driving them, you could have them there in 15-20? I sure wouldn't. (81)

Another online commenter compared the cost of an ambulance to that of taking a taxi:

> If I have to pay a couple hundred $ for an ambulance and a taxi will get me to the hospital and cost $10, why in the world would I take an ambulance? Unless of course it was a dire situation and even then I may grab a cab. (82)

These reader comments highlight that the public often believes that the care of the patient begins in the hospital and that the role of ambulance services is simply to get to the hospital, while the reality is that for many calls, the paramedics initiate care as soon as they arrive and continue to treat patients while en route to the hospital. Indeed, one emergency physician, in describing care that paramedics can provide with modern technology, suggested, "This is translating what's done in the emergency departments out into the field". (83) Some of the public does recognize this, as echoed by an online commenter who argued, "provincial governments are exploiting an outdated health act to avoid paying for what should be an essential service. An ambulance should be considered an extension of a hospital's emergency room". (84)

Currently, the role of paramedics in Ontario primarily maintains the conventional function of emergency response and transportation to the hospital. We found interest among paramedics in further expanding their role to include primary care and preventative care. The media report pilot projects in Ontario and across Canada that aim to explore mechanisms for such an expanded scope of practice. However, the analysis of online commentary suggests that the public perception of the role of paramedics can vary, with some equating the ambulance to an alternative and potentially faster mode of transportation to the hospital, and

others recognizing paramedics as treatment providers who can act as an extension of the hospital care. For now, it is clear that ambiguity about the proper role for paramedics exists, which has repercussions for the perceived appropriateness of ambulance use.

CHAPTER 4: DEFINING INAPPROPRIATENESS

In this chapter, I describe my theory that paramedics use the patients' perceived coping as a mediating factor in determining the appropriateness of ambulance use. I begin by illustrating how paramedics, the media and online readers define appropriate and inappropriate ambulance uses. Inappropriate ambulance use can be divided into abuse (deliberate exploitation of the system) and misuse (improper use that is unintentional or unavoidable). I argue that paramedics use their perceptions of the patients' ability and attempt to cope with the situation that led to a 911 call to reconcile the grey area between appropriate and inappropriate ambulance use, particularly in cases of misuse.

The findings in this chapter are drawn from interviews with Ontario paramedics and Canadian media reports and online reader commentary. The theory that coping is a mediating factor in assessing appropriateness is constructed specifically from the interviews with paramedics and reflects their perceptions of how to distinguish appropriate and inappropriate ambulance use.

Appropriate and Inappropriate Uses

Perhaps not surprisingly, notions of the appropriate use of ambulances tend to be focused most prominently on the typical "lights and sirens" emergency responses. Examples of appropriate ambulance use in the media and shared by paramedics are often the most obvious life-threatening cases such as heart attacks, strokes, motor vehicle collisions, or severe allergic reactions. One paramedic outlined the litany of potentially appropriate calls:

> Appropriate calls would be things to do with the cardiovascular system, things to do with pulmonary, respiratory distress, cardiac problems, acute traumatic problems, broken bones. Boy, it's just... there's so many I've done that you could say. Yeah, for appropriateness I guess I would say acute onset of any respiratory, cardiac or traumatic problems. (Paramedic#13)

While everyone agrees that these situations justify emergency response, there is less agreement about non-emergent situations. Paramedics noted that the appropriateness of a call can be quite subjective and "varies from person to person". (Paramedic#4) The variability of appropriateness is partially due to personal definitions and experiences of an emergency:

> So basically like my skills, I wish they could be utilized every day for high priority calls but those are few and far between. So we are getting the abdomen pain that has been there for two and a half years but worse today, right? So we are picking people up and we are taking them to the hospital and hey, it's a simple call and everything like this but it's their emergency and maybe they do need to get into the hospital and check it out – but preferably, go contact your doctor or go to a clinic, right? (Paramedic#2)

Thus, many paramedics acknowledge that appropriateness is a subjective concept and that patients' might experience "personal emergencies", even if they do not fit within the more objective understandings of an "emergency". Some paramedics recognized the appropriateness of dealing with general health (and social) needs, as evidenced by one paramedic in the following remarks:

> [W]e're there to, um, assist people just with their general needs, like, a lot of the time we're just picking people up off the floor and they might not need the medical treatment that we have to offer but they do need someone to help them. So I think we're just there to help the people of the community and...just assist them in any way we can, even if it's not what we really like to do. So, I would say

> the majority of us like to focus on treating people that need medical attention, but I think we're also there to help just the general public, you know, that kind of need a helping hand. (Paramedic#7)

Similar to the cited examples appropriate use, the most prominent examples of inappropriate use were often the most extreme. These unambiguous situations of inappropriate use can be considered *abuse* rather than *misuse* of the system. Abuse refers to those patients who knowingly manipulate the system, particularly those who feign medical emergencies simply for transportation to a destination near the hospital:

> There are frequent flyers who deliberately abuse the system for a transport. Just to get into an area that they want to go to. That is a willful and clearly-, I mean, they know. They've been informed, either by the EMS system or the paramedics themselves, that this is a manipulation and it's inappropriate and they continue to do so. So I don't know how you'd exactly define it, but let's just say patients who knowingly and deliberately manipulate the system for a transport tool. (Paramedic#12)

The deliberate abuse of ambulance services is made possible partly because paramedics do not have the ability to legally refuse transportation and also because, in Ontario, if the patient is not seen at the hospital, they are not charged for ambulance use. Another paramedic described how the process enables abuse of the system:

> Right now, if somebody wants to go to the hospital and they just call... so, we've had...an example of an inappropriate response is we have somebody that calls from another part of town and because the beer store is closer to the hospital, they will call an ambulance and demand that we take them to the hospital for no reason. But as soon as they get there, they sign themselves out, walk across to the beer store because it saves... they don't pay for

> their ambulance bill because they haven't gone to the hospital, they don't get registered and they're on social assistance a lot of times anyway so they end up not paying either way you look at it. So they're misusing, you know, where he could've taken a taxi, he's misusing an emergency ambulance. And those are the calls that I wish we could, say, refuse patients access to and right now we can't. (Paramedic#8)

Another common example of ambulance abuse is when patients admit to using the ambulance simply because they believe they will be seen more quickly at the ED if they arrive via ambulance. The Calgary Herald described the issue:

> With a 12-per-cent jump in unit responses last year [in Calgary], it has been suggested that irresponsible use of the ambulance service contributes to the scarcity of available units. If called, EMS will come. This may be fuelled by the widely held perception one can beat the lineups in emergency if one arrives in an ambulance. (85)

The misconception that arriving via ambulance would result in being seen more quickly at the hospital was one of the biggest frustrations expressed by paramedics, who felt that they were being used as a "free taxi ride" (Paramedic#16). A common concept in the discourse surrounding inappropriate ambulance use is to "use an ambulance as a taxi". This can refer to two types of behaviour: to use an ambulance as a taxi literally to get to some destination other than the hospital and in the absence of any health needs (as in the beer store examples above), or to use an ambulance as a taxi when the only service needed is transportation and other appropriate transportation is available (which might be motivated by the desire to be seen more quickly).

The misuse of ambulance services is much harder to define than abuse, and often arises because of external circumstances (e.g., a non-urgent health need arises outside of regular doctor office hours) or genuine misunderstandings about how the ambulance system works.

Notably, some paramedics remarked that their perceptions of appropriate ambulance changed and evolved with years of service. One paramedic with 20 years of experience explained his shift in perspective:

> I probably used to think they were [inappropriate]. You know, going and taking an elderly lady to the hospital that has a sore foot, I would've thought uh, waste of time. But in reality, no, you know, that's where you make the most difference actually, so... (Paramedic#4)

The remainder of this chapter addresses potential areas of ambulance misuse. While the extreme examples of appropriate use (heart attacks, strokes) and abuse (deception for the purpose of transportation) engendered universal agreement about classifications, the more moderate examples of ambulance misuse elicited more nuanced definitions of appropriateness.

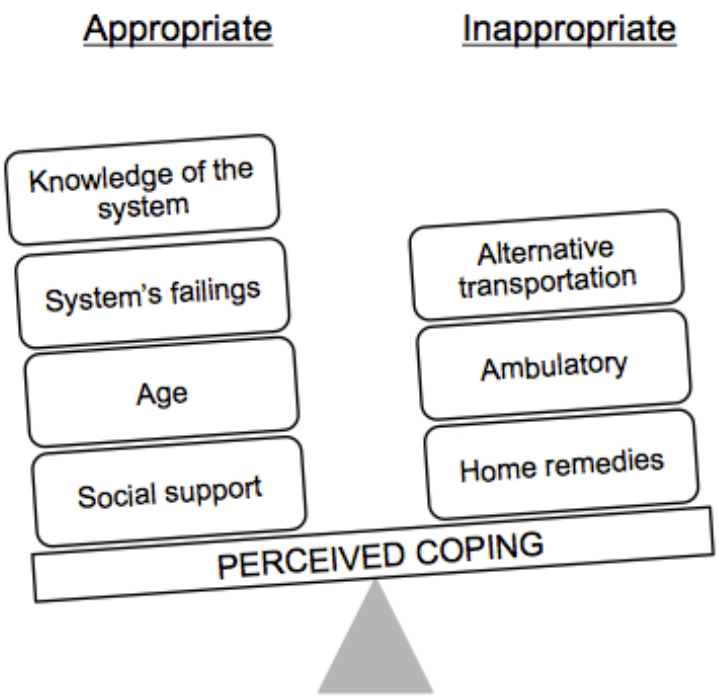
Coping

Paramedics consider their perception of the patients' ability to cope with the situation that provoked the call to 911 when trying to determine if ambulance use was appropriate. Recognition of the patient's (lack of) ability to cope is typified by the following paramedic's reaction to calls for minor (and potentially inappropriate) issues:

> So a lot of times we get really minor calls for things, and although to us it seems like oh my god, what a waste of our time, that I didn't go to school for all this time and whatever, and I don't have all this equipment on my truck to, like, pat you on the back and tell you that it's okay, and, you know, be your taxi essentially. But we do that all the time. But it's because to that person, they've reached their limits of coping. (Paramedic#3)

Paramedics cited the patient's age, social support available, knowledge of the system and the system's failings as factors that contribute to the patients' inability to cope with their situations [See Figure 1]. The presence of these factors can tip the balance towards perceived appropriateness of ambulance use.

Figure 1: Factors that contribute to paramedics' perceptions of patients' attempts and ability to cope



Age.

Some paramedics suggested that the appropriateness of an ambulance call could vary depending on the age of the patient, even for the same medical condition. An example of this is the occurrence of respiratory illness:

> [I]t really is particular to certain age groups. You've got your 90-year-olds who have pneumonia that, you know, they can't move and when they get pneumonia, they don't have enough people with them, they don't have family or they don't have - you know, they need to go to the hospital, they need to get treatment. Now you bump that down into your 30, 40, 50-year-olds that, you know, are coughing up green phlegm and they have a fever, and their family is all around when we get there, I mean, you don't need us. Yes, I understand that you're feeling ill, but you don't need to call 911. (Paramedic#13)

Paramedics noted that age often affected their perception of the appropriateness of the call because it contributes to the patient's ability to physically cope with illness. In the example above, the effects of respiratory illness left untreated might be much more dire in an elderly patient than in a healthy adult. Similarly, paramedics considered the presence of a fever to be more serious in the pediatric population than in the adult population, and more likely to warrant emergency response.

Knowledge of the system.

Patients sometimes misuse the ambulance system because they are experiencing a health (or social) need but are unsure of how to seek help. Paramedics described being called simply to offer reassurance to patients or to act as "information providers" (Paramedic#3) who could direct the patient to more appropriate

resources. Even when patients are aware that the ED might not be the appropriate course, if their 911 call stems from uncertainty about the system and a genuine need, it is more likely to be considered appropriate. The following quote describes the paramedics' role in addressing patients' uncertainty:

> A lot of times, you know, people don't necessarily need to go to the hospital, but they're not sure what to do. Or, you know, their family's not sure what to do with them. And so we end up filling that gap in the health care system, you know, maybe helping them to facilitate CCAC [Community Care Access Centre] or other homecare services. (Paramedic#3)

System failing.

Sometimes patients misuse ambulance services because they are unaware of the alternatives available to them, but other times the alternatives available have failed them. Paramedics are more likely to consider these cases of ambulance misuse, caused by gaps in the health care system, as appropriate. In particular, the paramedics interviewed consistently noted the number of individuals left waiting for placement in a long-term care facility:

> But there's kind of a huge gap right now in health care where people will... you know, they're not coping well at home anymore and they're waiting for placement into a long-term care facility or an assisted living facility. And until they have a tragic accident like they fall and break their hips, they don't really qualify. Like they're so far down on the waiting list that they're waiting for years for placement. (Paramedic#3)

The needs of patients living at home because they are unable to secure more appropriate care can be quite draining on the ambulance system, but they are seen as legitimate needs because the patients are unable to cope in the home setting.

Paramedics also expressed sympathy to patients who entered the health care system via the ambulance and ED, but whose medical needs were not appropriately addressed within the system. The most notable examples of these situations were patients with mental health issues, who often present to the ED but, from the perspective of paramedics, are not given adequate support when discharged from the system:

> And they are in crisis a lot of the time. Even if it is kind of daily and painful. So, I don't think it's so much saying it's non-essential, I think maybe the system is failing them somewhere else and that's why they're getting out and they're calling because they need to be back and back and back. They're not getting any answers to their problems, that's why they keep coming back to us. So I don't know if I would call them non-essential... (Paramedic#7)

The emergency system itself can also fail patients when wait times feel unbearable. The quintessential example of an inappropriate use of ambulance services is when the patient has already been transported to the hospital and calls 911 from the waiting room in the hopes of being seen more quickly. One paramedic described those sorts of calls:

> People who tell us right to our faces that they're using us so they can jump the line, they'll be seen faster. The only time I've ever actually had [the non-essential form] signed by a doctor was a woman who went into the ER, she was told to wait in the waiting room because she was nauseous, she then drove across the street and called me, asked for Gravol and then told me she was tired of

> waiting in the waiting room so she thought I could get her in sooner. (Paramedic#10)

While calling from the hospital can be considered clear abuse of the ambulance system, if paramedics recognize that it is caused by a failure of the system, it can be seen as an understandable misuse rather than blatant abuse. Indeed, paramedics perceive travelling to the ED as an attempt to cope with the situation, and if the wait for care lengthens, the patient's ability to cope may change. One paramedic, who expressed sympathy even for a call placed from the hospital waiting room, explained this concept:

> We can give them something, they're not sitting on a chair, they're on a bed. If it's a fracture, we'll mobilize and they're given pain relief, depending on the service they called, some services can't give pain relief. So, yeah, that I could understand. Yes this would be appropriate for you to go in the door and get treated but I can understand how that avenue hasn't worked too well for you, so you're trying something else. (Paramedic#16)

The justification of calling 911 from an ED waiting room seems surprising, but also highlights how the role of a paramedic encompasses both care and transportation. Paramedics are responsible for transporting patients to the hospital but, as outlined at the beginning of this chapter, they also initiate care upon first contact with the patient. Thus, paramedics might give patients anti-nausea or pain-relief medications that would make the wait for ED evaluation more tolerable. Ultimately, patients who are transported to hospital via ambulance are under the paramedics' "care" until they are admitted to the ED, and if it is

perceived that patients would be unable to cope with the ED wait without that care, then the use of an ambulance can be considered appropriate.

Social support.

The existence or presence of other social support might contribute to the patient's ability to cope with their situation. In some situations, the appropriateness of the ambulance care might be dependent on other resources available. For example, the appropriateness of lift assists depends on whether the patient has family who might help instead:

> I know some medics get upset about [lift assists], but the way I see it, well I mean, you can't just…like, say someone has a fall and they have no family in the area. They kind of fall through the cracks of who's going to help them get up, right? (Paramedic#10)

In the absence of formal or informal caregivers to assist the patient, lift assists are perceived as appropriate uses of the ambulance system. In other cases, patients may have support, but caregiver limitations push them to unnecessarily use the ambulance because they are unable to safely transport the patient. For example, an elderly woman might be too frail to assist her spouse to the car and drive to the doctor's office. One paramedic explained:

> In some cases, the patient and the family don't actually want to go to the ER, if they need some assistance to get somewhere but they themselves realize that they're not needing to go to the ER, but that's the only option that we're able to provide, therefore that's what we provide. Again, it's not somebody who's abusing the system or making inappropriate calls. It's somebody who legitimately needs some level of assistance but not necessarily direct medical assistance at that time, and definitely not the time and the resources of the ER room. (Paramedic#17)

Although technically the use of the ambulance (and the ED, subsequently) is inappropriate in these situations, paramedics perceived it as appropriate because they recognized that the families and patients had no other way of coping with a legitimate medical need.

While the aforementioned factors contribute to perceptions of appropriate ambulance use by paramedics, other cues highlight the patients' inadequate attempts to cope with their situation [See Figure 1]. The following quote describes the frustration experienced when paramedics perceive that patients have not attempted to cope with their situation in ways that might be reasonably expected:

> That is where we take issue, I think. For people that genuinely need the help or people have kind of utilized the resources that they have and taken appropriate steps that a reasonable adult would take and it hasn't worked out for them and now they need help, and even if it is not huge as far as acuity, I can totally understand that and I am supportive of that. But when you haven't made any effort to help yourself and haven't take those steps that a reasonable adult would, and then appear to abuse the system, that is where we get frustrated or that is where I get frustrated. (Paramedic#5)

In particular, paramedics were more likely to perceive an ambulance call as inappropriate if there was alternative transportation available, if the patient was ambulatory or if the patient did not attempt any home care remedies.

Alternative transportation available.

Many paramedics, when asked to describe inappropriate use, remarked on the presence of "cars in the driveway" as a sign that the patient might be misusing their services. In particular, they expressed frustration when the family followed them to the hospital in a private vehicle. One paramedic described a particular example where the family might have driven the patient to the hospital:

> Um, you know, let's say "I pulled a muscle in my back" say, yesterday, they call us today and they walk to the vehicle and we bypass two or three cars sitting in the driveway. I've picked up patients where they shovel the sidewalk for us to walk a patient to the vehicle with a back injury and they were warming up a car to follow us to the hospital. And this patient sat in our vehicle. I remember this call precisely, it was the middle of January, two in the morning, car was running and they were defrosting their car. But you couldn't say to them "why wouldn't you just take this person in the vehicle with you?", that was not my job, my job is to bring them in. (Paramedic#11)

Ambulatory.

The presence of alternative transportation alone is not a sufficient marker of inappropriate use; paramedics' perceptions of inappropriateness are exacerbated when the patient is also able to walk to the ambulance. Paramedics take the ability to walk as a sign that the patients might have been able to transport themselves to the hospital (or other care destination):

> Especially the ambulatory patients. Like, people that we honestly, we don't even have to get out the stretcher for them because they meet us at the end of their driveway or they meet us at the front door, right? I mean, the way I see it personally is if we're not giving you a drug and you're able to walk yourself, well, I mean

> there's really no reason for you to be taking an ambulance then. (Paramedic#10)

Other paramedics, however, despite being frustrated by patients who appear to be able to transport themselves to the hospital, acknowledged that transportation of patients is part of their role, as one explained, "Yeah, I think whether we like it or not, sometimes we are just a bus or a taxi service, I think that is reality, and transportation is part of it". (Paramedic#6)

Home care remedies.

Paramedics expressed frustration when it did not appear that patients had attempted to care for themselves at home before calling the ambulance system. They cited the flu as an example of a medical condition that could be considered an appropriate use of the ambulance if it progressed to the point where the patient could no longer cope with the symptoms. If the patient had not attempted to cope using common home care remedies, the use was more likely to be considered inappropriate. One paramedic described the tendency to gather information about attempts to cope:

> And so you know, it's like, well I threw up. Okay, how many times? Once. Okay, did you take anything for it, did you take Gravol, did you, you know? No. So you vomited one time and now... you know, like okay, so the person validly has the flu... (Paramedic#3)

In this instance, the paramedic was annoyed that the patient did not attempt any treatment before seeking help (e.g., taking an anti-nausea pill after vomiting). In

some ways, the perception of inappropriateness stems from the notion that the patient should have known how to cope with the situation, which is highlighted in the following passage that juxtaposes two potential responses to flu-like symptoms:

> Even when it comes down - as an example, somebody with the flu. I had a retired nurse who was like 57 years old, otherwise healthy who had had nausea, vomiting and diarrhea for like two hours. She hadn't done anything to help herself and now was calling an ambulance to go to the emergency department where somebody else who has been sick for two and a half days and has been trying fluids and Gravol and Tylenol and all the stuff that you are supposed to do and staying home and trying to run it out, and is now not coping and is severely dehydrated and needs some help, then no problem, even if you are twenty-five and perfectly healthy. If you have done what you are supposed to do and it hasn't worked out and now you need help, then that is what we are here for right? But when you know better and you haven't bothered to try to help yourself, it is frustrating when you now inappropriately deplete resources because you couldn't help yourself, for no good reason other than you haven't bothered. (Paramedic#5)

Although the causative medical condition described is identical, the patients' attempts and ability to cope with the situation before accessing 911 clearly swayed paramedics' perceptions of the appropriateness of ambulance use.

Perceptions of appropriate ambulance use hinge on shared understandings of the role of paramedics in the health care system and community. Traditionally, ambulance service was designed to provide rapid transport to the hospital ED for patients experiencing a medical emergency. As the role of paramedics expands (subtly in some cases,

formally in others) to fill other gaps in the health care system, conceptions of appropriateness also change in response.

Paramedics' perspectives of appriateness are based on perceptions of the patients' emergent medical needs. In rare situations, such as when the patient accepts transportation but leaves before being seen at the hospital, the judgment of inappropriate ambulance use in clear. In the majority of situations, paramedics rely on their assessment of whether the patient has attempted to cope with their condition and made use of the resources available to them (e.g., social support, alternative transportation or care) in order to assess the appropriateness of the ambulance use. In the absence of these resources, whether because the patient has been failed by their social network or the health care system more broadly, the use of an ambulance is likely to be perceived as appropriate.

CHAPTER 5: ORGANIZATIONAL MISUSES

In this chapter, I describe inappropriate use of ambulance services that occurs when organizational factors influence or initiate the decision to seek care. Ambulance use can be initiated by someone working on behalf of the organizational setting where the health emergency occurs, for example, long-term care facilities, schools or hospitals. The police department, which is closely linked to ambulance services under the purview of emergency services, is also a source of organizational ambulance use. Finally, the patient's decision to call 911 can be influenced by telephone services that offer health information and advice, such as Telehealth in Ontario.

I begin by describing the various instances in which ambulance misuse can occur across organizations. I then outline the elements that emerged from the interviews with paramedics and in media accounts as potential contributing factors to inappropriate ambulance use, including: concerns about liability, organizational policies and protocols, care provider respite, clinical competence and the lack of adequate alternatives to ambulance use.

Long-term Care Facilities

Paramedics consistently identified long-term care facilities as a major source of perceived inappropriate ambulance use. Inappropriate calls from long long-term care facilities were considered particularly disconcerting because, unlike calls from the general public, patients in long-term care facilities are, in theory, under the care of medical staff:

> My only calls today that I've done are actually nursing home calls where there's long-term care facilities that have health professionals - nursing staff, and even doctors that are on call, and yet they can't manage their patients in the nursing home. (Paramedic#8)

Since long-term care facilities have health professionals on staff and are equipped with medical devices and technologies, paramedics' perceptions of the margins of appropriate ambulance use were narrower than they would have been for patients calling from private homes. They argued that patients in long-term care facilities, who have access to a physician if necessary, should only be transported to a hospital if they required a device or service that could not be provided by the physician at the long-term care facility:

> I've never understood nursing homes that have their own doctor in-house. And they'll just, like a patient for whatever reason, you know they'll send them into a hospital to get checked by another doctor. Well, unless that patient needs an x-ray or an ultrasound or a service specific just to the hospital, I don't understand why that doctor doesn't assess them more. (Paramedic#10)

Paramedics also expressed frustration with inappropriate calls from long-term care facilities because, in addition to having access to health professionals and medical technologies, they expected the medical staff to be aware of appropriate ambulance uses. They were less tolerant of ambulance misuses by individuals working within the health system, whom they expected to be knowledgeable about health system dynamics:

> But now you're dealing with actual medical professionals who understand vital signs and realize that they're fully stable and you're still going out on a high priority and you're flying down there lights and sirens and risking yourself and everything for somebody who's you know, sitting up, eating, watching TV, and

> the doctor just doesn't want to come in or something, you know? (Paramedic#6)

Paramedics argued that patients living in long-term care facilities should avoid transportation to the hospital whenever possible. In particular, many cited the dangers of infections in elderly patients and noted, "the hospital is the best place in the world to go for an infection." (Paramedic#12) Transportation to hospital for minor ailments does not outweigh the risks of hospital-acquired infections.

Paramedics in this study also expressed concern about the appropriateness of transportation and hospital admissions for long-term care patients who might require care and comfort but not necessarily treatment in a hospital setting:

> But I mean, half of them, they don't need to go to the hospital. It's called failure to thrive. Like that's kinda why you're in a nursing home to begin with, it's 'cause you can't live on your own or whatever and you've just sort of gotten to the end of your rope sorta thing and you're not taking your medications and you're not eating and you really want nothing to do with anybody. (Paramedic#1)

Margaret Wente echoed this sentiment in a commentary in The Globe and Mail about health care issues for seniors:

> The critical-care system is designed for prevention and rescue. Its carefully developed, standardized, science-based procedures work well for the middle-aged. But no two fragile elderly people are alike. Their diseases are beyond fixing. Their real issues are comfort and function, not rescue and repair, and where they really want to be is in their home. Yet, we still try to cure them. Rather than attending to their comfort, we overmedicate them in a well-intentioned effort to improve their futures. The last thing most of them need in a crisis is a hospital. (86)

Transporting patients from long-term care facilities to the hospital unnecessarily not only taxes the ambulances system but also places undue stress on patients who

could be appropriately and safely cared for in their residence.

In some cases, paramedics perceive that the long-term care facilities deliberately use ambulance services when a private transfer service would be appropriate. They described indications of this deliberate abuse, such as when the patient's symptoms do not reflect the initial description given to the 911 dispatcher by staff at the long-term care facility, or when there were indications upon arrival at the hospital that the patient had a scheduled appointment:

> And nursing homes call us a lot of times for somebody that needs to be seen - they have basically an appointment to be seen by the doctor in the emergency room because it's somebody in a nursing home that's sick, but they call it as an emergency saying "oh, he's short of breath". Now we have to go because for whatever reason they don't want to-, probably again the expense, I don't know, of calling a transfer service. The expense and the inconvenience of having to book it while we come right away. You know, if they forget to book it in time or something, or they can't get it booked, well they just say the person is short of breath, we come there, we take them, and then we find out they have an appointment to be seen there anyway. (Paramedic#16)

Schools

Paramedics believed that school staff sometimes inappropriately called for an ambulance for injured students who could have been safely transported to the hospital by their parents or school officials. They noted that school policies about calling 911 seemed to have become more conservative over time: "Sometimes it's for things that, when I went to school, probably would've said "wait here, we're going to call your parents" type of thing." (Paramedic#16).

In contrast, the only media report that addressed the appropriateness of ambulance use in a school setting presented the opposite perspective: the family of a 15-year-old Calgary student who had been cut in the neck by metal blinds questioned why school officials (including a school nurse) did not immediately call for an ambulance, and instead applied first aid and called his parents to transport him to the hospital. (87)

Hospitals

Canadian media reports identified a dysfunction in the hospital system where staff call 911 for patients who are already inside or just outside of the hospital. Although hospital officials tended to label each of the incidents as exceptional, this type of misuse was reported seven times in five years of Canadian media: twice in Alberta (2010, 2011), once in Nova Scotia (2009), twice in Saskatchewan (2007, 2009) and twice in Ontario (2010, 2011). In these cases, ambulance use is inappropriate not because the condition of the patient does not warrant emergency response but because the process of calling 911 and having paramedics respond (potentially from off-site) can delay the initiation of care for patients who are already at or near their intended destination.

In some cases, the patient requiring emergency care was already located in the hospital. One incident occurred at a hospital in Niagara Falls, Ontario. An 82-year-old woman slipped and fell as she was leaving the hospital after visiting her husband. When her son sought care from hospital staff, he was told that it was hospital procedure for paramedics to attend to those incidents. Paramedics arrived

28 minutes after the woman had fallen and fractured her hip. Her son expressed outrage that she did not receive immediate help:

> "I was ready to run over there and rip somebody's head off," Mike Wallace said. "You've got to be kidding me! We're inside the hospital. If you were going to get hurt anywhere, wouldn't you think that's the safest place you can get immediate help? But no, that's not the case." (88)

In other instances, the patients were just outside of the hospital ED but were not physically able to walk inside. For example, an elderly woman with a cane and a heart condition was asked to bring her husband into the ED from the car in the parking lot where he was experiencing a heart attack, or to call 911. (89) Similarly, in Saskatoon, Saskatchewan, an ambulance was called to assist a man on the ground just outside of the ED doors:

> [Saskatchewan's health minister] Don McMorris says he was shocked to hear that paramedics were called Monday to bring the man into the hospital. The man collapsed just metres from the door at City Hospital and a passerby went inside to get help, but he says staff refused aid and instead called 911. (90)

Although most cases of hospitals calling 911 inspired policy reviews and were determined to be misunderstandings or miscommunications of policy, in some cases the hospital staff defended the protocol that required paramedics to attend to patients on or just outside of hospital property. In those instances, hospital officials noted that paramedics were better equipped and specifically trained to stabilize and transport patients.

Police

Police officers can also contribute to inappropriate ambulance use. If a person being taken into police custody exhibits any signs of potential medical distress, police will call for paramedics to assess the person's medical condition. Paramedics in this study expressed concern about this practice because their current role is to transport patients to the hospital, if desired, and not to diagnose patients or evaluate the patients' need to be seen by a physician:

> Police will call us a lot more. Um, because they want us to assess their patients before they go on. And they don't necessarily want us to bring them to the hospital, they just want our opinion, which... I know we're running into a lot of trouble right now, just because when we do get called, ideally we're supposed to be bringing people and dropping them off, and the police department is looking for an opinion, say, "yes, you're medically cleared" even though we can't do that. (Paramedic#7)

In addition to feeling apprehensive about being asked to assess the medical needs of individuals in police custody, paramedics noted that the police officers' precautions often led to inappropriate ambulance use. Even if the paramedics determined that the individual did not need to be transported to the hospital, they do not have the right to refuse transportation if it is requested. Paramedics also expressed frustration that police, who are required to accompany a patient in custody, do not generally transport ambulatory patients to the hospital. As a result, paramedics often end up on offload delay with patients at the hospital who are in police custody:

> [W]hy wouldn't you just take them to the hospital yourself? Like your patient's under arrest, we're... if they're in handcuffs we

> legally have to take the police with us. […] But, so like they can't leave them in the care of the hospital staff, 'cause the patient's under arrest, so there has to be an officer there all the time. So for a lot of the things it's like really minor stuff. Or you know, he got taken down by the cops and now he's, you know, he's complaining of like knee pain. There's absolutely no reason to go by ambulance but the police are terrified that something will happen. (Paramedic#3)

Telehealth

Paramedics also identified Telehealth as a source of inappropriate ambulance calls. Telehealth is telephone service through which a registered nurse is available 24 hours a day and 7 days a week to provide health advice or information. Based on an assessment of symptoms described by the caller, the registered nurse can recommend home remedies, suggest a visit to a health practitioner, or provide telephone numbers for appropriate community services. Despite the variety of options available to the registered nurses, paramedics expressed concern that the conservative protocols used by the call takers favour ambulance use and hospital visits:

> I find things like Telehealth, for whatever reason, people that call Telehealth always call an ambulance. Um, I think that... I don't know how much advice they're allowed to give but I find they really go towards "just call ambulance and go to the hospital" not "maybe you can see your GP" or... (Paramedic#7)

Similarly, in an editorial in the Toronto Star, Gord Tewnion argued that although paramedics were overworked, the solution was not to add more paramedics to the ambulance service but rather to tackle unnecessary use. He identified Telehealth in particular as a source of inappropriate use:

> [T]oo many people in Toronto call 911 when they shouldn't. And TeleHealth Ontario advises too many people to call 911, when in fact they should be seeing their family doctor, or making a trip to the nearest walk-in clinic. (91)

Paramedics acknowledged the limitations of telephone referral services like Telehealth. Conservative protocols, designed to ensure that patients who require further assessment are not missed, will invariably lead to some unnecessary ambulance referrals. One downside of the service is that callers who have been advised by the Telehealth nurse to seek emergency care might be more anxious about their condition when the paramedics arrive, perhaps needlessly:

> And we'll come in a lot of times and they're like "well they told me on the phone to call 911" and we're like... okay, who told you? And we get this quite frequently, really. Like, Telehealth. I called Telehealth. And that can be irritating just because they have it in their mind already; they were told by a nurse that [they] should go to the hospital. That sometimes happens. They get into a panic a little bit just because they're talking to somebody on the phone so there is no actual assessment going on. I see, I get where the Telehealth is coming from, they can only do so much, but at the same time, that leads to a little bit of inappropriate use sometimes. (Paramedic#14)

Overall, paramedics expressed disappointment with Telehealth as a missed opportunity to deter inappropriate ambulance use. Although paramedics are not legally able to refuse ambulance transportation or to advise patients on the need to seek ED care, Telehealth nurses can suggest a variety of treatment options. For this reason, it was perceived as particularly objectionable when a patient who had consulted Telehealth was advised to use an ambulance inappropriately.

Why Do Organizational Misuses Occur?

Concerns about liability.

Concerns about liability and lawsuits emerged as the primary reasons for ambulance misuse by organizations. In some cases, the paramedics believed the over-caution could be attributed to negative outcomes in the past:

> The police are so afraid of being sued. Like we've had a couple of episodes where they've, you know, maybe they have an aggressive patient, they don't realize that the patient is aggressive because of maybe an ongoing medical condition or perhaps like some sort of illicit drug use. And so they put them in the cell, you know they arrest them and put them in the cell and then the patient ends up dying. So now the cops call us just to check everyone over. (Paramedic#3)

Also, the prevalence of lawsuits is believed to have increased over the years:

> The legality aspects are changing. How much has in changed in the last 4 or 5 years with people being sued for little things and the legal responsibility and stuff. Whereas the schools, like a grade school, something minor, nurses would take care of it, call the parents, they'd come in. Now they legally have to call an ambulance. (Paramedic#16)

Despite frustration, paramedics seemed to acknowledge that concerns about liability could be valid because of the uncertainty involved in assessing medical symptoms:

> [L]et's say I'm complaining of pain right underneath my left rib. I can pinpoint it, it hurts when I stretch, it hurts when I take a deep breath, and today I was lifting heavy furniture or something like that. They are liable still, even though it pretty much sounds like maybe you pulled a muscle or tweaked something in there, that's chest pain. You could be having a heart attack. Or you could be having a pulmonary embolism in there and you could like drop dead because you're not going to be able to breathe in a second. And they have to say, well, you should call 911. (Paramedic#14)

Organizational policies or protocols.

Organizational policies can sometimes lead to unintended or unavoidable misuse of the ambulance system. In those cases, paramedics recognized that the inappropriate use was not deliberate. For example, long-term care facilities might have a policy to consult family members for guidance about patient care:

> What they're doing and what they're going on is if the patient feels ill, tells them that they're ill, anything, they have to call the family member and the family member from how many miles away, they can't see the patient and they don't know anything so all they say to the nursing home staff is "well, call the ambulance, bring them in. I don't know what to do". You know? So it's out of their hands. So I don't blame. […] So we have a lot of homes and you get that often, we get there and it's non-essential, nothing to do. We try to tell them but their hands are tied, they can't do anything. (Paramedic#13)

Similarly, school protocols might require that an ambulance be called regardless of the severity of the injury or condition:

> I think, I mean schools use us because, I guess - everybody's got a protocol to follow, I guess I have to say. If somebody gets injured in a school, the first thing you have to say is make sure there's no danger, then they call the ambulance. (Paramedic#11)

Despite understanding that inappropriate use is dictated by policy rather than intentional abuse, paramedics and (through media reports) government officials, patients and their carers still argued that policies that promote misuse need to be changed.

Care provider respite.

Sometimes misuse by organizations occurs because, much like patients who have reached their limits of coping, the staff are overwhelmed by their responsibilities

and are seeking respite. Paramedics described patients in long-term care facilities who were not necessarily sick or in need of medical treatment, but whose dependence exasperated the staff. Transporting these patients to the ED might provide some temporary respite, but ultimately is a poor solution because the hospital will (rightfully) discharge them in the absence of medical needs.

Paramedics expressed some sympathy for the staff in long-term care facilities who were overwhelmed with their patient load, but also believed that it was ultimately the role of the long-term care facility to care for these patients:

> I don't know what the ratio is but I've seen one RN for a couple hundred patients, right? So they're obviously overloaded but I mean why do we put them in long-term care facilities, these people? It's for care. (Paramedic#8)

Moreover, transferring patients inappropriately to the hospital setting burdens both the EMS system and the hospital, and unnecessarily compromises the health of patients:

> I find the nursing homes are more so "well, this patient is too taxing on my staff, let's send them to the hospital". Well that taxes the ambulance and that taxes the nursing staff at the ER, too. Whereas if the patient already has a bed where they're not surrounded by sick people, it's not as much of a drain on services, right? (Paramedic#10)

Clinical competence.

Paramedics speculated that some inappropriate ambulance use stemming from long-term care facilities might be caused by the staff's lack of knowledge. In these cases, the misuse does not occur intentionally: the staff are genuinely unaware that the call to 911 was not appropriate:

> Sometimes it's a matter of just getting one less person out of their long-term care facility for a short amount of time and others they just don't know, like, they are just inappropriately sending patients. (Paramedic#8)

Paramedics suggested that the staff's lack of knowledge was potentially because they were under-qualified to evaluate the patient's need to be transported to the hospital. Registered nurses' (RN) education requires a baccalaureate degree that teaches critical thinking and enables them to care for patients with more complex needs in unpredictable situations. Rather than RNs, long-term care facilities might be staffed by registered practical nurses (RPNs), whose education is less comprehensive and geared towards patients with less complex conditions. When potential emergencies arise, RPNs might be more likely to defer to 911 for further patient assessment:

> [Y]ou get a lot of nursing homes that hire - they don't hire RNs, they'll hire an RPN and um, that person doesn't have experience or the knowledge skill set to assess a person properly. (Paramedic#9)

Inadequate alternatives.

Inappropriate ambulance use can sometimes occur either because of inadequate access to an alternative and more appropriate care provider (such as primary care) or because there is no access to an alternative form of transportation to the hospital.

For example, paramedics suggested that some of the misuse stemming from Telehealth advice could be because the Telehealth nurse determines that the

patient should seek care from a physician, but the ED is the only option at that hour:

> People call in and they say whatever their problem is and Telehealth will say, “oh well go into, you need to see a doctor”. And the people will say whatever, it's 3am and Telehealth will be, like, “oh, well just call an ambulance”. So I find we get a lot of calls where we show up and the people say "oh, I just got off the line with Telehealth". (Paramedic#10)

Although the use of an ED can sometimes be justified when a primary care setting is not available, the use of an ambulance for a condition that could be safely treated in primary care is questionable.

Similarly, paramedics noted that alternative transportation might be more appropriate for stable long-term care patients.

> You know, you have an RN or an RPN on scene and the doctor that they have called just says "oh, send them to the hospital" and what's their options? Well they're calling 911 where it's like, if there was a transfer service in place that was able to do something like that, you wouldn't have to necessarily have to go out for this patient who's fully stable but the doctor just can't make it in to see them so they just say go to the ER. (Paramedic#6)

Some paramedics expressed sympathy at these sorts of misuses because they were perceived as consequences of the system: “There's a lot of abuse of the system from the nursing homes, but that's not really--there's no other way for them to get to the hospital.” (Paramedic#1) However, many regions do have non-urgent transport services available for stable patients. Patient transfer services are generally not funded by provincial health plans. Conversely, in Ontario, patients in long-term care facilities are included among the special exemptions for ambulance user fees. As a result, some paramedics argued, there is a financial

incentive for long-term care facilities and their residents to use ambulance services inappropriately.

> They know it's a scheduled one, it's been scheduled for hours, it's been scheduled the day before, but they book it as an emergency transfer just so they don't have to be billed because it keeps their budget down. (Paramedic#16)

Sometimes, an alternative might avoid the hospital altogether. Paramedics saw benefit in bringing primary care to the long-term care facilities, which would avoid transportation and off-load delay for them and potentially be a more pleasant experience for the patient. Many raised the issue of catheters, which are thin tubes inserted in the body that are used for the drainage or administration of fluids and gases. If the catheter is accidentally removed, patients in long-term care facilities are generally transported to the hospital for catheterization. Many paramedics cited catheterization as a procedure that could be more appropriately conducted in the long-term care facility, without transporting the patient to the hospital. One paramedic proposed, as an alternative, a team that could travel to the long-term care facility instead:

> But I mean, we go to calls for nursing homes for people that their catheters have been pulled out or fell out. I mean, that's - is it an emergency? Probably not. I mean, we should have some sort of an organization that goes around like a roving catheter organization that goes and does that because we see a lot of those. So you bring these people into emerg and again, they sit there for hours and hours. (Paramedic#11)

Indeed, the use of medical personnel dedicated to treating patients within long-term care facilities is increasing in some regions. In Nova Scotia, for example, a

model of expanded-scope paramedicine enlists paramedics to travel to long-term care facilities and treat patients on-site:

> In Nova Scotia, this model has reduced the number of ambulance transports from nursing homes by 72 per cent. "Those patients would have typically had to be taken to a facility, seen by a physician and transported back," Crossman said. "I don't think people really realized we would be able to treat and release… There's always been a sort of traditional model where (patients) have always seen the physician." (92)

Alternative programs, such as Toronto Western's Emergency Mobile Health Network (EMHN), which has long-term care residents receiving emergency care from nurses, employ other health professionals. The EMHN has been able to divert a majority of patients who would have been 911 calls away from the ED and treat them in the long-term care facility instead. (93)

In addition to inappropriate use by individuals in the general public, organizations can misuse the ambulance system. Organizations that misuse or contribute to the misuse of ambulances include long-term care facilities, schools, the police, telephone nursing lines and hospitals themselves. Paramedics expected the professionals staffing those organizations to have a better understanding of appropriate criteria for ambulance calls, and thus reported feeling more frustrated by this type of misuse. Organizational misuses can also compromise patient care, in the case of long-term care patients who might be more appropriately treated in their facility, or for patients who experience medical emergencies in or near the hospital and whose care is delayed because of the use of the unnecessary use of ambulance services. Whether because of liability, conservative protocols or simple unawareness, organizations appear to be a major contributor to

ambulance misuse.

CHAPTER 6: USER FEES AS A DETERRENT

In this chapter, I examine the perspectives expressed by paramedics and online readers and in the media about the use of user fees to deter inappropriate ambulance use. I begin by addressing the competing values that emerged in response to matters surrounding the appropriateness and usefulness of user fees in ambulance services. Arguments emerged that highlighted the advantages and disadvantages of user fees, and no definitive conclusions prevailed. First, I outline the arguments in support of eliminating ambulance user fees. Ambulances are a means of access to hospitals and eliminating the ambulance user fee promotes the accessibility of the public health care system. Ambulance user fees can also result in unnecessary burdens, both financial and emotional, during a health crisis. Although exemptions are often in place to protect the most vulnerable groups from these hardships, participants questioned the fairness of these exemptions across user groups. Next, I present the arguments in favour of charging user fees: revenue generation and the deterrence of inappropriate use. I also address barriers to charging specifically for inappropriate ambulance use. The lack of public awareness about ambulance user fees calls into question their usefulness as a deterrent. Moreover, many patients are required to assess the severity of their symptoms and appropriateness of ambulance use based on incomplete health information. Paramedics note that inappropriate use often stems from mental health issues that make user fees an ineffective deterrent. Logistical difficulties also impede the implementation and enforcement of user

fees specifically for inappropriate use. Finally, I discuss public education as an alternative to user fees for the deterrence of inappropriate ambulance use.

Competing Values

At its core, the debate about ambulance user fees elicits competing values. Paramedics, the media and online readers reported conflicting perspectives within and across groups of stakeholders, as well as individual conflicts. The incongruence of beliefs was summarized most succinctly by a paramedic in the study who, when asked if he thought patients should be charged for the use of an ambulance, replied, "Absolutely not. I feel that, I believe it's situational". (Paramedic#6) The majority of paramedics interviewed initially argued that patients should not be charged for ambulance use, but also struggled to accept that there would be no repercussions for abuse of the system.

While the paramedics tended to base their arguments on their experiences with patients and often drew on specific cases to illustrate their beliefs, the media's reporting of issues surrounding ambulance fees focused on the system-level concerns based primarily on political agendas and less commonly on the reporting of personal tragedies. Still, even at a broader level, the conflict between the desire for an ethical EMS system (i.e., that removes financial barriers to the access of health care) and the need for an efficient system (i.e., that properly manages the use of scare resources) was apparent. For example, when the government of PEI announced that it would eliminate ambulance fees for seniors

to help reduce the costs of emergency care in 2009, the Paramedics Association of PEI strongly supported the change but worried that the ensuing increase in usage would "put more strain on limited resources". (94)

People Should Not be Charged to Use an Ambulance

Accessibility.

Paramedics, the media and online readers all cited accessibility as the main reason that patients should not be charged for ambulance services. In the current model of paramedicine, ambulances are primarily a form of transportation to the hospital. In life-threatening emergencies such as suspected strokes and heart attacks, they are considered the most appropriate method of accessing the hospital because transportation is rapid and life-saving care can be initiated en route. The leader of the Ontario New Democratic Party (NDP), Andrea Horwath, promised to eliminate ambulance fees if her party was elected in 2011 and noted that it undermined the accessibility of the system: "The $45 fee often charged to be transported to hospital is one of the many charges Ontario residents must pay in what is supposed to be an accessible health care system". (95) Similarly, paramedics and online commenters reasoned that it is incongruous to impose a financial barrier for transportation and care en route to a hospital in a health care system that provides publicly funded hospital care:

> I mean, the way our health system is set up, I think if anything that should be the one thing that's not-, that they don't have to pay for. I believe everybody should have access to health care, it's a public health care system so, no, I don't think there should be a charge. (Paramedic#8)

One commenter noted, "The ride to the hospital is equally important as the treatment you get so it should all be paid by the government". (96)

Accessibility to a public health care system emerged as an aspect of a "Canadian" health care system, and user fees for ambulance use do not fit within that system:

> Not in Canada. I think that's something that should be covered under OHIP. Just because… I don't know, I think we're needed. I think we're an essential service and people need access to the hospital and medical treatment and… I think we're just a way of getting more treatment. So that's why I think we shouldn't charge people. (Paramedic#7)

While publicly funded health care is fundamental to the Canadian system, charging a user fee for ambulance services evokes an "American-style medical system" (84) and many paramedics and online commenters opposed the acceptance of perceived privatization and "profiteering" (84) within the Canadian health care system.

Unnecessary burden.

The need of ambulance services often arises during a stressful medical emergency and several participants suggested that charging a user fee for those services adds an unnecessary burden to an already traumatic experience. The user fee can complicate the decision-making process to call 911. Ontario NDP leader Andrea Horwath expressed concern that her mother hesitated to call 911 during a health crisis because she was worried about the fee associated with ambulance transportation and argued that patients and families should not have to "think

twice" about calling 911 when in medical distress. (97) In Ontario, where the fee is only applied if the patient chooses to be transported to the hospital, paramedics noted some hesitation and concern about the fee from patients:

> I have so many patients that are worried about the charge. Elderly people are constantly asking, "How am I going to pay?" and things like that because it gets out that their elderly friends are using our service and…they're worried about the $45 they have to pay. (Paramedic#7)

Even when concerns about the fee do not stop patients from accessing the ambulance service, issuing a bill after transportation and medical treatment have been provided is sometimes perceived by paramedics and portrayed by the media as burdensome and insensitive. When ambulance user fees are reported in the media, it is generally because they have been put forth as a campaign issue during a provincial election or because there is public outcry about the fee in the face of a personal tragedy. When a 17-year-old boy was electrocuted and killed at work in New Brunswick, his family expressed dismay upon receiving a $130 ambulance bill soon after. The New Brunswick government agreed that the bill represented an unnecessary stress:

> Health Minister Madelaine Dube says the billing incident is further proof that it's time to get rid of the fees. Dube says the boy's death is a tragedy for the family and to get an ambulance bill on top of that must have come as a shock. (98)

Paramedics recited other tragedies where they perceived the user fee to be a needless blow to grieving families, such as parents who witness paramedics trying to resuscitate their child (Paramedic#2) or individuals who find their spouses unresponsive in bed. (Paramedic#3) Receiving a bill for emergency services

might force the family and patients to "relive" the traumatic experience (Paramedic#2) and impose an emotional stress, or be a financial burden on the family. In 2007, The Calgary Herald reported that the family of a homeless man who froze to death outside of a shelter was relieved not to have to pay the $330 bill they had received for his ambulance transportation. (99) His sister, who lived on fixed income, was shocked and "didn't know where [she] was going to get the money from". An EMS spokesperson clarified that the bill was sent in error and should have been sent to Health Canada because the patient was a status native. Although some Canadians have insurance to cover ambulance fees or are exempt from them, many have no coverage and they or their families can be faced with financial stress in response to a traumatic medical event.

Several paramedics noted personal attempts to prevent grieving families from receiving an ambulance bill:

> [Y]our child dies and three weeks later you get a bill in the mail. That to me is just a kick in the-, like kick you when you're down. We used to have, when we did paper, like when we did our paperwork on paper, there was a blue billing copy, it was like in triplicate. And you could just take that blue copy off the back, and to be honest, you just throw them out for those calls. […] I mean, it was the only logical thing to do. (Paramedic#3)

Ambulance calls involving death garnered the most compassion and elicited the most calls from paramedics, the media and online commenters for the abolishment of ambulance fees. An online commenter argued that "a dead person should not be billed, period" (96) while another countered that the death of the patient is not a reasonable criterion for exemption:

> Ambulance NB provided a service, and billed accordingly; nothing new there. EVERY time an ambulance is used, there is grief and suffering, so eliminating invoices on that basis would not be viable. (96)

Indeed, the majority of paramedics and online commenters agreed that ambulance use should be covered at, at a minimum, for appropriate uses, and a medical emergency that results in death is undeniably appropriate.

Equity.

A final argument that emerged against the imposition of user fees for ambulance use involves the question of equity: which user groups will the user fees affect? Which user groups should be exempt?

Exemptions from user fees, which vary across Canadian provinces, are often an attempt to protect vulnerable groups, such as the elderly and those on social assistance, from financial hardships. The topic of ambulance services for seniors arose frequently both in the interviews and in the media reports. In Ontario, individuals (often seniors) living in long-term care facilities are exempt from the $45 ambulance fee while seniors living at home receive no exemption. Paramedics in the study expressed concern about seniors faced with the ambulance user fee, characterizing them as a group more likely to hesitate to call 911 when necessary:

> The ones that it will affect are the geriatric community that need an ambulance that are already very reluctant to call because they're from very old country views that you don't call unless you're dying. (Paramedic#16)

Government officials have echoed this particular concern for seniors. When the New Brunswick Liberals reinstated the ambulance fees in 2009, the Conservative critic for seniors' issues was "especially concerned about seniors on fixed incomes who need to watch every penny, and a fee of $130 is putting the most vulnerable New Brunswickers at higher risk". (100) PEI Premier Robert Ghiz promised to eliminate ambulance fees on the island during an election campaign. When there were not enough resources available to meet the anticipated increase in demand, the province proposed that the change begin with the elimination of fees for residents 65 years and older. (101) Reaction from online commenters to the elimination of fees for seniors in PEI was mixed. Some agreed with the decision to offer seniors exemption: "Glad it is the seniors. The idea that a senior citizen would refrain from calling an ambulance because of the fee…makes me sick to my stomach". (102) Others called into question the seemingly arbitrary entitlement:

> Ambulance services for emergencies or if forced (e.g., hospital to hospital, or a call by the police) should be free for all (gee Ethel, I might be having a heart attack but if we can wait til midnight I'll be a senior and it'll be free). (102)

In addition to seniors, governments that hope to alleviate the burden of ambulance user fees on vulnerable groups often exempt low-income residents from the charge. In Ontario, residents who are on social assistance are exempt from the $45 user fee for an ambulance transportation that is deemed essential, but, in theory, are not exempt if their use is deemed non-essential. The Ontario paramedics perceived that the "frequent flyers" (Paramedic#13) most likely to

abuse the ambulance system were often the patients on social assistance. Moreover, there was a perception among paramedics that patients on social assistance would not be held responsible for the fee regardless of whether it was deemed non-essential. Thus, one argument the emerged for the elimination of the user fee is that it does not deter inappropriate use by the group that paramedics perceive to be abusing the service:

> The chronic abusers of the system, and things like that, they're not paying the bill anyways so they really don't care. You could make it a million dollars and they would still call five times a day. Because that's who they are, right? (Paramedic#3)

Indeed, while the user fee is not perceived to affect the inappropriate use it presumably targets, paramedics feared that it might target the wrong group of users:

> [T]he population that will be affected by that is not the population that we want to be affected by it. […] Who are the ones that get affected? The ones that don't have money, that aren't on public assistance, they can't afford the help because they're in that in-between. If they're very well off, it's not going to affect them. They'll still-, they're often the ones that sometimes treat us like taxi drivers. You know, "I pay my tax dollars so you owe me this". And they can afford it. So it's not going to affect them. The ones on public assistance, it's going to be paid for them anyways, it's not going to affect them. It's going to affect that in-between group that already-, they're not the problem. (Paramedic#16)

The potential effect on the "in-between" group was echoed in an article in the Vancouver Sun in 2007 that warned of possible health expenses for individuals without extended health insurance through a private work plan. (103) Ambulance services are commonly covered by extended health insurance plans, which means that the user fee generally targets those patients who do not have extended health

insurance but are not in the vulnerable populations that are typically exempted by the provincial government. When Saskatchewan announced a $25 increase in its ambulance user fees in 2010, the health minister noted that it would not have a significant impact on most users:

> [M]ost individuals have private insurance to help cover the costs and the province will maintain its $250 cap for seniors and the subsidy for individuals on social assistance. "It tends to come back more to government and insurance companies than individuals, even though there's 10 to 20 percent that will see a, I think, quite modest increase of $25," he said. (104)

People Should be Charged to Use an Ambulance

Revenue generation.

Most media reports of ambulance user fees tend to portray them as a method to generate revenue to support the health care system. Some media reports make references to the resources required to maintain the ambulance service and the expense of those resources. For example, the Saskatoon Star Phoenix reported that a local ambulance service was upgrading its staff qualifications from basic life-support (emergency medical technicians) to advanced life-support (paramedics) and noted that "with more qualified staff comes a higher cost to the service" (105), thus an increase in the user fee from $225 to $325 per call, plus mileage. When the New Brunswick government announced plans to remove the ambulance user fee, the Fredericton Gleaner outlined the (minimal) role those fees played in offsetting the cost of the ambulance service:

> In 2009-2010, Ambulance NB issued $5,008,349 in bills but decided after reviewing many of those cases that $2,620,139 would

> be forgiven. Many were residents who couldn't afford to pay. That means the service collected $2,388,210 to help fund the $85-million ambulance service. (106)

The Ontario NDP government proposed the elimination of ambulance user fees if elected in 2011 and the Liberal government countered that it would involve taking $30 million out of the health care system, which would inevitably have an impact somewhere. Health Minister Deb Matthews remarked, "Of course it'd be lovely to do, but I wouldn't say that would be the best use of the $30 million." (107) In contrast to the Liberal government's emphasis on the $30 million generated by ambulance user fees, Ontario paramedics in the study rarely acknowledged the potential revenue. In fact, most paramedics noted that the $45 fee for essential use in Ontario is quite minimal and is "not even touching the cost of this service" (Paramedic#3).

One reason for the paramedics' disregard for the user fee as a source of revenue might be that the system in Ontario is designed so that the hospital bills the patient and the payment is then split between the hospital and the Ministry of Health and Long-term Care (MOHLTC). Although the MOHLTC, in turn, provides funds to the regional ambulance services, but there is no direct link between the payment of the user fee and the ambulance services' revenue:

> I don't know too much about billing besides that there's a user fee that the hospital charges, like, I don't think that our service actually sees any of that money at all? It goes to the ministry. So that's another thing that just boggles my mind, the fact that we're providing the service as a region, a regional service, but we don't see any of that user fee. It's for hospital administration. (Paramedic#8)

Deterrent of inappropriate use.

In the argument in favour of ambulance user fees, the fee is more likely to be framed as a potential deterrent of inappropriate use than as a source of revenue. The use of ambulance fees as a deterrent of inappropriate use was epitomized in the media in 2009 when the New Brunswick government reinstated the $130 user fee that had been eliminated by the previous government:

> In bringing back the fee, the Liberals say ambulance usage across the province had jumped by 20 per cent each year, and that the service was being abused by some people. Former health minister Mike Murphy says ambulances were many times being used as a taxi service, and not actually responding to true emergency situations. (108)

Although the Liberal government declared that the user fee was intended to tackle ambulance abuse, it provided no evidence to support the argument that the increase in ambulance use was inappropriate. Indeed, ambulance usage dropped dramatically in the year following the reinstatement of user fees, but the Conservative government argued that the fee affected both appropriate and inappropriate users:

> Tory health critic Margaret-Ann Blaney believes [the drop in ambulance calls] is because some people are afraid to call one because they can't afford it. "The whole point of this (fee) was to reduce the abuse, but they didn't even know where the ambulance was coming from in the first place," she said Friday. Blaney believes there are many people who still need to go to the hospital by ambulance but now find other ways to get there. (109)

Online commenters echoed similar concerns about the lack of data to examine usage patterns and the potentially negative, unmeasured impacts of introducing a financial disincentive:

> It's great to know that the numbers of calls have decreased and it may be because of the fees. However, how many lives have been lost because the call was not made when it should have been? The government may be saving money, but are we saving lives? (82)

Only a minority of paramedics interviewed supported user fees for both essential and non-essential ambulance use:

> I just think that without some type of fee associated there is not really any thought as far as the repercussions or the resources that are just, people just kind of feel entitled to it. (Paramedic#5)

Of those paramedics who believed that people should be charged for ambulance use, most thought that the fee should only be applied to transportations that were deemed to be non-essential, to target inappropriate use specifically.

User Fees for Inappropriate Ambulance Use

Most paramedics and many online commenters supported an ambulance billing policy that would charge patients for inappropriate ambulance use but cover the service in cases of appropriate use. In response to the media report about the New Brunswick family that was distressed upon receipt of an ambulance bill after their son was electrocuted, online commenters proposed a solution:

> It should be that each ambulance trip is charged the $130 unless the doctor at the hospital signs off that the ambulance trip was indeed an emergency trip, in which case there would be more charge. So in this case the doctor would have signed off that this was indeed an emergency run. This would make user[s] who abuse trips pay and those in need of an ambulance ride not have to worry about paying for additional fees. (96)

While many commenters agreed with the policy of charging of inappropriate use, some cautioned, "it would leave too much open for interpretation of what is and is not an emergency". (110)

Despite agreeing that a policy that specifically targets inappropriate use would be ideal, most paramedics in the study lamented that such a policy does not work in practice. They presented many factors that hinder the effectiveness of the Ontario-style billing policy of charging more for inappropriate use: the public is unaware of the policy, patients have incomplete health information, inappropriate use often stems from conditions (particularly mental health issues) that limit decision-making capacity, the policy is logistically difficult to implement and there is no reinforcement of the policy.

Lack of public awareness.

For any policy to be effective, the intended targets must be aware of it. Paramedics suggested that residents might not even be aware of ambulance user fees in general:

> I know that a lot of people don't know that you would be billed. Because to most people, I think it's kind of ridiculous that you're billed. So I think most people are, you know, they think that it's free or they'd be surprised if they haven't used one before, if they got the bill after the fact. (Paramedic#3)

Comments from online readers support the notion that ambulance user fees can come as a surprise to patients, with many responses to media reports about ambulance fees expressing bewilderment that there was a fee associated with the service. Paramedics in the study reported that they were discouraged from

discussing fees with patients because it might dissuade appropriate use. However, awareness about the fee could also encourage patients to seek other appropriate means of transportation:

> David Hodgson was surprised to receive a bill for $175 five months after he broke his ankle playing soccer. A friend had called the ambulance to take him to the hospital, a gesture he appreciated at the time. But when he got the bill, he wasn't so sure. He could have easily gone by car, he said. […] He figures there are a lot of people like him who don't realize there's no such thing as a free ambulance ride. (103)

The lack of public knowledge about ambulance user fees in general and Ontario's policy to charge more if transportation is deemed non-essential calls into question the effectiveness of the policy. One paramedic noted:

> I think it will discourage some people from calling but most people don't even know about the fee or the user fee or the fact that they could get charged the full amount if it's deemed non-essential. (Paramedic#8)

Incomplete health information.

Although someone with a simple fracture or sprain might be able to gauge the importance of the ambulance transportation in comparison to other alternatives, many people who call 911 are experiencing unfamiliar medical distress. Without any medical knowledge, training or tools, patients are frequently uncertain about whether their condition requires further assessment and treatment at the hospital:

> "People are neglecting themselves by not going to the hospital", says Cecile Cassista, executive director of the Coalition for Nursing Home Residents' Rights. "They do not call an ambulance because they are afraid they won't be able to pay the bill. They feel sick but can't diagnose themselves, so they hesitate to go and sometimes it is too late". (100)

Similarly, paramedics worried that a fee for inappropriate use might deter patients who are not certain they require an ambulance, and noted that many patients are not in a position to make that decision:

> If they now have the fear that they might be charged if they're wrong, because they're already hesitant because they're not sure if they're right in calling, they could be having a massive heart attack and they're not sure so they don't know if they should call the ambulance, right? Now, if they know that if they make a mistake they're going to get charged, they won't call. (Paramedic#16)

The patients that paramedics described are often uncertain about their medical options, distressed about the symptoms they are experiencing, and hoping for reassurance from a health professional. While many paramedics expressed regret that they were not legally able to advise patients in the decision to seek care at the emergency department, the overwhelming sentiment expressed in the interviews was that in cases of uncertainty, they would rather have patients call than hesitate because of fears of inappropriate use.

The root of inappropriate use.

Some paramedics suggested that inappropriate use could not be deterred by a financial penalty because it stems from mental health or drug abuse issues that hinder the patients' abilities to make appropriate decisions.

> Very rarely do you get someone who is kind of the average citizen without particular mental health issues going so far as to call an ambulance for an obviously non-essential situation, just to go through the process. So, that situation probably doesn't really happen much, if it does at all. But when it's non-essential—determined non-essential—from my experience, there's gotta be

> some other link involved, whether it's drug issues, or mental health issues. (Paramedic#17)

The patients who abuse the ambulance system because they struggle with mental health disorders are "not of right mind" (Paramedic#7) and do need help, albeit not from the emergency health care system. Paramedics questioned the effectiveness and fairness of charging them for their use:

> I don't know if I would call them non-essential and to charge those people, I don't think would be a great idea. I don't think it would help. (Paramedic#7)

Policy implementation and enforcement.

Identifying cases of inappropriate ambulance use seems like a simple solution. One online commenter succinctly outlined his proposal for New Brunswick:

> Here's an idea:
> Non-emergency ambulance calls: $130.60
> An emergency call (any life-threatening scenario): $0
> Problem solved (110)

Despite the seemingly clear-cut appeal of a user fee specifically for inappropriate use, paramedics in Ontario report frustrations and logistical difficulties implementing the policy. Most paramedics remarked that the use of the non-essential policy had been exceedingly rare in their experience and tended to be applied "out of frustration and even anger" (Paramedic#17), and only in cases of extreme abuse:

> There are very few cases I've seen anyway where I've actually had the doctor sign my form saying that it's non-essential. And generally it's those patients that they've been seen in the ER four times that day or they've called us four times in a row and aren't happy with the outcome or diagnosis. (Paramedic#8)

Many times when the form is signed as non-essential, the abuse has been brought to the attention of the physician by the paramedics or the nurses. The "non-essential" checkbox is on the ambulance call report that is completed by the paramedics who respond to the call. In theory, the report travels with the patient and ultimately is seen by the physician who makes the determination. In practice, paramedics sometimes do not have the opportunity to complete the report before being called for another patient, and therefore leave the hospital with the report. Instead, information about the patient is generally passed via word-of-mouth from the paramedics to the nurses and ultimately to the physician. Although the paramedics typically stay with patients until they are admitted to ED care, from that point there might still be a wait before the physician sees the patient, particularly in non-urgent cases. As a result, the opportunity for a paramedic to discuss non-essential use with a physician who has also had a chance to assess the patient is rare. One paramedic confided that some physicians are more willing than others to overcome those logistical barriers:

> I have gone up to doctors, like, we have a few doctors there and I explain to them and they say, "Okay". He says, "I want to just check on the patient quickly and then I will sign it". You get to know the doctors and the doctors who sign it. But that is few and far between; if you have ten non-essential calls, that will happen once. (Paramedic#2)

Even when transportation is deemed non-essential, paramedics expressed frustration that there is no real enforcement because "there's nobody to chase after that payment". (Paramedic#6)

Due to the logistical barriers and lack of enforcement or noticeable changes, most paramedics were unenthusiastic about the prospect of user fees deterring inappropriate use:

> If you could actually get that policy to be effective, then yes, I think that is totally appropriate. Since it is not, I don't utilize it is all I am saying, because I haven't-, in my experience, it doesn't accomplish anything and so frankly I don't waste my breath anymore or don't waste my energy. It was probably-, if I go through the effort to fill out those forms and continue to pick up those same people day after day and not see any repercussions, then it would just make me more frustrated. (Paramedic#5)

One paramedic summarized the fundamental question with respect to the Ontario policy of billing more for inappropriate ambulance use: "It's not a tool that's effective, so why is it even there?" (Paramedic#17)

Alternative to User Fees

Paramedics and online commenters noted the lack of public education about the appropriate use of ambulance services. Interestingly, although the subject of user fees and inappropriate use was raised in the media, particularly with reference to New Brunswick, where the elimination of user fees led to an increase in ambulance usage and their reinstatement led to a decline, there was never an attempt in media reports to outline the appropriate and inappropriate uses of ambulances. One paramedic noted, "some people honestly don't know, right? I mean the education is not out there". (Paramedic#10) Another remarked that the criteria for essential and non-essential use were obscure, even for a paramedic:

> If it's non-essential, I think there should be criteria and really that's what we, um, I don't know if there's guidelines that the doctors

> have to look at to deem whether it's essential or non-essential, but I think that should be public because if there are guidelines, I've never seen them as a paramedic. (Paramedic#8)

Paramedics voiced concern about using fees to deter inappropriate use because "money is…there's too much risk associated with a lack of seeking care". (Paramedic#12) Education about the appropriate uses of an ambulance either before the need arises or after the transportation has been deemed non-essential is a much safer alternative than imposing a financial barrier that might also prevent appropriate use. Paramedics also highlighted social interventions targeted specifically at chronic abusers. These interventions include teams of EMS personnel and social workers that try to address the source of the inappropriate ambulance use (usually mental health concerns). (Paramedic#3)

The subject of user fees for health care is contentious, particularly in Canada, a country often recognized for its publicly funded health care system. Conflicting perspectives about ambulance user fees were apparent among paramedics, media reports and online readers. Although most participants value an accessible, sympathetic and equitable ambulance system, the reality of scarce resources requires serious consideration of mechanisms to deter inappropriate and inefficient use. Ideally, the mechanism would target inappropriate use specifically, but the experience of paramedics in Ontario suggests that logistical and other barriers impede the effective use of a financial disincentive. Formal

education appropriate and inappropriate uses about emerged as an underused tool in Ontario for the deterrence of inappropriate use.

CHAPTER 7: CONCLUSION

This study explored the construct of appropriateness in the context of emergency medical services, examining media, online readers and paramedics' perceptions of inappropriate ambulance use. Our primary objective was to develop grounded theory on the construct of appropriate ambulance use from interviews with paramedics in Ontario, an analysis of national media reports and online reader commentary. Findings showed that the role of paramedics varies across regions and, in turn, constructs of appropriateness vary. In ambiguous cases, paramedics use their judgment of the patients' ability to cope to evaluate the appropriateness of ambulance use. Unexpectedly, the most frustrating cases of inappropriate ambulance use tend to be initiated by organizations rather than members of the general public.

A secondary objective of our study was to assess the implications of these appropriateness constructs for the Ontario Ministry of Health and Long-term Care's (MOHLTC) ambulance billing policy, which bills patients according to the appropriateness of their EMS transport.

Four key findings raise questions about the potential for ambulance user fees conditional on 'appropriateness' to improve either the effectiveness or efficiency of ambulance services. Some also point to the possibility of unintended and potentially harmful effects on patients and health care providers.

First, role ambiguity exists in paramedicine. The EMS profession remains in its infancy relative to many health professions, and continuously evolves and

expands to find its place within the health care system. Understandings of appropriate ambulance use hinge on shared understandings of the role of paramedics.

Second, paramedics use cues about the patients' attempts to cope with their medical situation to assess the appropriateness of the 911 calls. If patients are unsure of how to negotiate the health care system, their attempts to access the system have failed them, or they lack a social support network, paramedics tend to believe that the ambulance use is justified. Conversely, if alternative transportation is available, patients are ambulatory and there is no indication of attempted home remedy, paramedics conclude that the patients have not attempted to cope with their symptoms and are inappropriately using the ambulance.

Third, organizations (rather than individuals) often influence or initiate the misuse of ambulance services. Long-term care facilities, schools, hospitals, police and telephone nurse lines all have policies and protocols that can contribute to inappropriate ambulance use. At times, paramedics perceive the misuse of ambulance services by these organizations to be more frustrating than misuse by individuals or the general public because many organizations have medical or emergency staff whom paramedics expect to be knowledgeable about, and considerate of, appropriate use.

Fourth and finally, some individuals see user fees as a barrier to access to health care and an unnecessary burden during a stressful health emergency. User fees might deter appropriate use in addition to inappropriate use. While some

paramedics and online readers favour user fees targeted at inappropriate use, such a policy presumes the patient's ability to distinguish appropriate use. It can also introduce logistical difficulties depending on when and by whom the determination of appropriateness is to be made.

In this chapter, I will review these four aspects of the "appropriateness" construct in the practice of emergency medical services, and situate the findings of our study within current research knowledge on ambulance utilization. I will then address policy implications for ambulance user fees, and close with a discussion of the limitations of our study and directions for future research

How is the construct of "inappropriateness" defined and used in the context of emergency medical services?

The evolving role of paramedics.

Differing understandings of the intended role of paramedics affect what constitutes appropriate (and inappropriate) use of emergency medical services. The traditional role of EMS in the health care system involves the "out-of-hospital, acute health care provided by paramedics responding in ambulances and transporting to emergency departments". (111) This study revealed that the role of paramedics has evolved formally and informally from that traditional role, in terms of the care paramedics can provide, others expect them to provide, and the legitimate transport destinations. Aspects of the role that focus on the care provided include: on-scene care without transportation, primary care and preventative care.

We found that paramedics are routinely involved in the care of patients without necessarily transporting them to the hospital. Paramedics noted the provision of carbohydrates and assessment of blood sugar levels in diabetics as a common example of on-scene care provided without transportation. They described the treatment of diabetics as one of the most typically prolonged on-scene calls. Although the treatment of diabetic patients at home can be lengthy, this type of on-scene call is generally of shorter duration than calls involving transportation to the emergency department. (112) Lerner et al., (113) in a study of the treatment of hypoglycemic patients by paramedics in the field, found that the majority of these patients preferred not to be transported and were satisfied with the EMS-only care they received.

In addition to the current on-scene calls that fall within paramedics' purview, they expressed interest in expanding the Ontario paramedic role to include primary health care services (e.g., suturing for minor wounds). Provincial governments have considered legislation that would expand the role of paramedics and potentially fill gaps in primary care. We found wide support among our interviewees for the expansion of the scope of practice of paramedics into the realm of primary care, which has been promoted for over a decade in the United States and the United Kingdom. (114, 115) However, at least two barriers currently prevent widespread adoption of a change in roles: 1) paramedics are not currently taught to diagnose and manage complex conditions and even with further training, diagnosis often requires equipment and services not available in

the field, (114) and 2) having paramedics preoccupied with primary care functions could potentially delay response times for urgent calls (e.g. cardiac arrest), where they are clearly capable of providing health benefits. (114, 116)

We found evidence that some governments, ambulance services (as reported in the media), and paramedics further recommend increasing the role of paramedics in *preventative* care. This parallels findings from a survey of 27,233 EMS professionals in the United States, in which 83% of respondents indicated that they believed they should participate in injury and disease prevention programs. (117) In some cases, opportunities for preventative care can present themselves during the standard 911 response. For example, paramedics identified lift assists for patients with reduced mobility as a source of recurrent calls. Studies in the United States and the United Kingdom have similarly reported that in approximately 50% of cases where patients call 911 for a lift assist without transportation, paramedics are called again within a month. (118, 119) Initiatives such as the pilot project described in our study that would allow paramedics to refer patients to community care (rather than relying on hospital staff) can potentially prevent recurrent injuries in patients and recurrent ambulance use.

Despite the growing focus on the provision of care, the transportation of patients remains fundamental to the role of paramedics. Paramedics in our study questioned whether the hospital emergency department must always be the ambulance's destination, or whether some patients might better be transported to an urgent care centre or walk-in clinic instead. However, in some media reports,

physicians expressed concerns about the ability of paramedics to correctly triage patients to appropriate care destinations. The academic literature reflects a similar debate. Many studies have evaluated the potential for paramedics to transport patients to appropriate alternative destinations (120-125) but results are mixed. Schaefer et al. (123) determined that paramedics could safely triage patients to alternative destinations while other researchers (120, 124, 125) demonstrated that paramedics cannot safely triage patients. Kamper, Mahoney, Nelson and Peterson (121) noted that the protocols to safely triage patients away from the emergency department would have to be very conservative and extra training would be required, which would limit the potential for cost-savings compared to the current model of transportation.

The role of ambulance services has undeniably evolved since its inception, with the introduction of new medical technologies and increased training. (126) Our study revealed interest among Ontario paramedics and from stakeholders across the country in exploring changes to the EMS system that might better fit the needs of the population. Changing the role of paramedics in the health care system also means reshaping our understandings of appropriate and inappropriate ambulance use. For example, paramedics currently treat hypoglycemic patients, often without subsequent transportation to the hospital, and community paramedicine programs are being piloted that would enable paramedics to transport patients to urgent care clinics. These two aspects of the role of paramedics highlight that the need for treatment in a hospital emergency

department is not a necessary criterion for appropriate ambulance use. Moreover, as the role changes in various regions and provinces, it becomes harder to make definitive conclusions about appropriateness. For example, media reports about paramedics in Winnipeg, Manitoba transporting patients to urgent care centres in sedans contribute to public opinions about paramedicine, even though these initiatives are not consistent across the country.

Patients' perceived coping: making sense of the misuses.

Paramedics' characterizations of "appropriate" ambulance use often focused on appropriate cases for typical "lights and sirens" responses to life-threatening emergencies, such as heart attacks, strokes and motor vehicle collisions. Media reports used similar stereotypical portrayals. At the other extreme, paramedics characterized "inappropriate" uses in terms of the most blatant abuses, for example, patients who fabricated symptoms or exited the ambulance upon arrival without entering the hospital. Unambiguous examples of deliberate, inappropriate use can be defined as *abuse* of the system.

More frequently, however, inappropriate use takes the form of ambulance *misuse*, which is improper use that is generally unintentional or unavoidable. Misuse is harder to define and identify, and a more malleable social construct. The majority of ambulance calls do not fall at the extremes: Hu (127) reported that in a two-year period from 2006-2008, 52% of calls were prioritized by dispatchers as CTAS level 3, which indicates conditions that could potentially progress to a serious problem requiring emergency intervention, and 25% of calls

were considered CTAS level 4, which captures conditions that would benefit from intervention or reassurance within 1-2 hours due to the patient's age, distress, or potential for deterioration or complications. Our study showed that in these unclear situations, paramedics rely on cues about the patient's ability or attempts to cope with the situation to help distinguish appropriate and inappropriate uses. Factors such as the patient's age, social support available, knowledge of the system, and the system's failings can contribute to the patient's inability to cope with the medical situation and justify their use of the ambulance.

Our findings about paramedics' perceptions of coping complement Booker, Simmonds and Purdy's (128) study of patients and carers who had called an ambulance for a primary care-appropriate condition. Some of the factors that influenced those patients' decisions to call an ambulance unnecessarily, such as a misunderstanding of options in the health care system or previous negative experiences, were consistent with the cues we found that paramedics use to identify a patient's inability to cope.

Paramedics in our study also identified cues that might indicate inadequate attempts to cope, such as whether there is alternative transportation available, if the patient is ambulatory, or if the patient did not attempt any home care remedies. Previous studies have noted access to alternative transportation such as a private vehicle or taxi as a criterion for inappropriate ambulance use in, (4, 129) as well as the ability to walk. (29)

A major finding from our study is that paramedics recognize the patients' inability to cope and use it as a mediating factor when trying to determine the appropriateness of the ambulance call. Booker, Simmonds and Purdy (128) found that the dominant factor influencing patient decision-making was the anxiety they experienced about their medical symptoms. Patients described feeling extremely anxious and out of control. Ahl, Nystrom and Jansson (2) noted similar emotions in their study of patients' experiences of calling an ambulance. Their analysis revealed that the decision to call for an ambulance is made when "it is no longer possible to handle the situation by oneself – strength fails and it is necessary to get help from someone else". (2)

Organizational misuses: knowing better.

Organizations emerged as a surprising contributor to inappropriate ambulance use. Although our study initially focused on 911 calls initiated by members of the general public, the emerging analysis revealed that misuse by organizations is a major concern and we turned to investigating this phenomenon as well.

Long-term care facilities were consistently identified as originating inappropriate ambulance calls. This adds to a growing body of evidence about inappropriate ambulance use from long-term care facilities (e.g., (130-132)). Although they did not specifically label ambulance use as "inappropriate", some media reports in our study portrayed initiatives to minimize the number of emergency department visits by patients in long-term care facilities and remarked that those visits can leave the patients anxious and susceptible to infections.

Paramedics perceived that some of the inappropriate ambulance use by long-term care facilities occurred because on-call physicians were unwilling or unable to assess the patient and the nursing staff was incapable of appropriately treating the patient. Ackermann et al.'s (131) finding that many emergency department visits could have been avoided if evaluation had occurred in the long-term care facility supports this perception.

Paramedics also sympathized that sometimes the decision to call 911 was out of the control of the long-term care facilities staff, for example, if protocols required that they contact a family member in the event of a change in the patient's status. In a study of nursing home staff perceptions of avoidability of hospital transfers, Lamb et al. (132) found that in 14% of cases that staff rated as avoidable, the reason for the patient's transfer to hospital was that the family or patient insisted. Concerns about liability emerged as a major contributing factor to inappropriate use by long-term care facilities (and organizations more broadly). Wofford (130) similarly noted that the threat of being sued might influence the decision to transport patients to the emergency department.

Both paramedics and media reports identified Telehealth Ontario, a nurse-staffed telephone health advice service, as another source of inappropriate ambulance use. Paramedics perceived that the protocols used by the nurses as too conservative and too frequently lead to a recommendation to call 911. Data from the MOHLTC, however, contradict this perception: of the calls made to Telehealth Ontario over an approximately seven-month period, 46% of callers

were told that self-care was suitable, 31% were advised to see their family physicians and only 2% were told to call 911. (133) The discrepancy between actual advice given and paramedics' perceptions might reflect the fact that paramedics only see the patients who are advised to call 911, and are therefore biased to believe that they are the majority. It should be noted that although the aim of Telehealth is to divert patients from emergency care, where possible, (133) no studies to date confirm that it decreases emergency department utilization for non-urgent care. (134)

Paramedics reported often feeling more frustrated by the inappropriate use initiated by organizations than by the general public because they expected the professionals staffing those organizations to have a better understanding of appropriate criteria for ambulance calls. In the case of long-term care facilities, nursing staff who have medical training and equipment available to them generally initiated the calls. Patients who call Telehealth are influenced and advised by a trained nurse. Whether because of liability, conservative protocols or simple unawareness, paramedics consider these instances as missed opportunities to avoid inappropriate ambulance use.

How does the construct of inappropriateness influence the MOHTLC ambulance billing policy?

The Ontario MOHLTC ambulance billing policy is designed to discourage inappropriate use of ambulance services. Ambulance transports that are deemed "essential" are charged at a relatively nominal fee of $45 while "non-essential"

transportations are charged $240. This study showed that there is debate in Ontario and across the country about the usefulness and appropriateness of charging for ambulance use in general, as well as the ability to distinguish non-essential use.

The two main arguments in favour of ambulance user fees are revenue generation and the deterrence of inappropriate use. In media reports, provincial governments cited the revenue from ambulance services as a reason to increase ambulance fees. Few studies have examined the effect of user fees on inappropriate ambulance use. Ting and Chang (5) demonstrated that free ambulance transportation was associated with increased clinically inappropriate transportation. However, like most studies of ambulance use, their study focused only on clinical criteria to determine appropriateness. As our study has shown, the definition of appropriateness consists of several criteria outside of illness acuity. Conversely, Tippett et al. (135) demonstrated that universal access to ambulance services to did increase inappropriate use (also defined by clinical criteria).

The paramedics, the media and online readers we studied proposed several arguments against charging for ambulance use. Charging for ambulance use imposes a financial barrier to access to care. In a health care system that prides itself on providing publicly funded hospital and physician care, it is perceived as incongruous to charge patients for the transportation and care provided en route to a hospital. In addition to a financial toll, ambulance user fees can also add an

unnecessary emotional burden to an already traumatic experience. Particularly in cases involving death, paramedics, government officials (as reported through the media) and online readers perceived the ambulance bill as insensitive and unnecessary. Although vulnerable user groups are often exempt from ambulance fees to help lessen the financial burden, some online readers argued that these exemptions were unjust, while paramedics argued that they were ineffective because the exempted groups were also the most likely to inappropriately use the ambulance.

Many paramedics and online readers expressed support for user fees solely for inappropriate ambulance use, but some factors emerged that could limit the effectiveness of such a policy: lack of public awareness, incomplete health information, lack of decision-making capacity and the logistical difficulties.

The patients who call 911 are seldom health care professionals and have neither the education nor the tools necessary to determine the severity of their symptoms. They must rely on their own perceptions of need to determine whether an ambulance is appropriate.

In the case of the MOHLTC billing policy, the attending physician must make the determination about the appropriateness of the ambulance use. This non-essential checkbox is on the call report that the paramedics who responded to the call complete. Often, the physician never sees this form and information about the patient is instead passed via word-of-mouth from the paramedics to the nurses and then the physicians.

Policy Implications

Inappropriate calls to 911 come with significant opportunity costs and can waste the scarce resources of the ambulance system. Two Canadian studies (136, 137) have shown that non-urgent patients consume only a fraction of emergency department resources, so attempts to divert them from the emergency department are unlikely to improve access for more urgent patients. Directly measuring the impact of non-urgent ambulance patients on emergency patients was beyond the scope of our study, but the issue of inappropriate ambulance use is subtly different from inappropriate emergency department use. Schull, Kiss and Szalai (137) surmised that decreasing the number of low-complexity patients would do little to reduce crowding because 1) they are not placed in the same treatment spaces required by urgent patients, 2) the resources they require are generally simple, and 3) staff are either dedicated to the treatment of low-complexity patients (through fast-tracking) or allocate time to them in lower priority than they do for urgent patients. These factors do not apply to the management of non-urgent patients in the ambulance system because the treatment space used (an ambulance) is the same across conditions, the major resource required is the paramedics' time, and perhaps most importantly, aside from slight variations in standard response times (depending on the priority code assigned by the dispatcher), paramedics themselves do not have the ability to delay their response to a patient once they have arrived on-scene. As a result, the costs of inappropriate ambulance use merit consideration and policy response.

Ultimately, addressing the problem of ambulance misuse requires asking fundamental questions about what the role of paramedics and ambulances should be in the health care system. Currently, EMS is a user-initiated service: the many roles for paramedics are often defined by the individual or organization who decides to call 911. Our study shows that the patients' expectations of appropriate ambulance can conflict with the traditional role. Policy responses could either reframe the role of ambulance services to meet the needs of those patients, or target those inconsistencies with mechanisms for deterrence such as user fees and education campaigns.

We found broad interest and initiatives across the country to expand the role of paramedics to include care for non-emergency conditions or transportation to non-hospital destinations. Avoiding the transportation of non-urgent patients to the hospital could decrease the duration of a 911 response since it eliminates lengthy offload delays at the hospital and allows paramedics to return to the road in a more timely manner. However, increasing the array of services that paramedics are able to provide might also further increase the demand for their services, which would ultimately still burden the system without a corresponding increase in resources.

Paramedics pointed to lack of user knowledge as a primary cause of inappropriate ambulance use and suggested education campaigns as an alternative or additional deterrent. Interestingly, despite several media reports that addressed ambulance abuse, none of the media reports in our study explicitly outlined

criteria for appropriate or inappropriate ambulance use. The safety and effectiveness of such education campaigns has not been established, however, and some evidence points to a potential for harm. Ohshige (138) studied ambulance utilization before and during a campaign to educate the public on appropriate ambulance use and found that the number of patients transported in the year after the campaign decreased in every category of illness severity except life-threatening illness. Unfortunately, utilization decreased in patients with serious conditions, which suggests that both inappropriate and appropriate use was affected. An education campaign would have to be approached cautiously to avoid the same concerns that arise in response to ambulance user fees.

Limitations of the Study

This study provides new insight into how paramedics understand and define appropriate ambulance use, as well as portrayals of appropriate ambulance use in the media and reader reactions. However, several methodological limitations should be considered when applying the findings from this project.

The study relied on interview data from paramedics working in two regions in Southwestern Ontario. Role expectations, protocols and patient demographics can vary widely across regions and ambulance services, which could limit transferability of our findings to differently-structured services. For example, in Ontario, there are three occupational levels of paramedics: Primary Care Paramedic (PCP), Advanced Care Paramedic (ACP) and Critical Care Paramedic (CCP). Each level is associated with a specific scope of practice, and

the distribution of occupational levels differs by region. A region that employs primarily ACPs would have different protocols than one that dispatches crews of PCPs. Similarly, role expectations might vary in a remote or rural region versus an urban centre with multiple specialized hospitals in close proximity.

While paramedic and media perspectives play important roles in the social construction of the concept of "appropriateness" in ambulance use, our study does not investigate directly how other stakeholders, particularly patients or physicians, construct this idea. At the onset of our study, I had hoped to incorporate patient and physician perspectives of inappropriate use to compare and contrast with the perceptions of paramedics. Unfortunately, despite multiple recruitment strategies, the sample of potential patient participants was insufficient for a comprehensive examination of the research question. Studies designed to target patients from emergency department settings can pose particular challenges for recruitment because the potential participants are often experiencing (perceived) health emergencies and the appropriateness of approaching participants can vary. I chose to hang recruitment posters in emergency department waiting rooms and hospital entrances. Posters were also hung in walk-in clinics and community centres. These passive strategies did not result in adequate participants within the project time constraints. A more direct approach (e.g., having a research assistant directly distribute information to patients) might have yielded a bigger sample. Similarly, despite verbal interest to participate in the study expressed by

physicians, the time constraints of the project did not allow for a sufficient sample to be collected.

In the absence of patient and physician perspectives, I relied on media reports and online reactions to media reports to broaden the analysis. The purpose of these sources of data was to gather constructs of appropriateness related to ambulance use in public discourse. Media reports provide access to selectively public views; in the case of ambulance use, the predominant voices tended to be leaders in paramedicine (e.g., ambulance service chiefs), health professionals (e.g., medical officers of health, hospital administrators) and government officials (e.g., ministers of health). In addition, the media reports captured salient patient stories about experiences with the ambulance system. However, perspectives represented in the media are not necessarily representative of the public in general.

The analysis of online public commentary is a novel approach that allowed us to examine the reaction of members of the public and their interactions with other respondents. However, our media sample is limited to Internet users, whose insights might not generalize to members of the broader population who do not have Internet access. There could also be self-selection bias in examining online reader commentary because it is possible that only those with strong opinions will take the time to leave a comment.

Directions for Future Research

At multiple points along the trajectory from the 911 call to treatment and discharge, various stakeholders make decisions about the appropriateness of the ambulance use: patients and their caregivers, dispatchers, paramedics, nurses, physicians. Provider organizations' conventions, protocols, and limitations also play an important part. The understanding of appropriateness in the context of ambulance use would be enriched by a study that incorporated all these perspectives and was able to compare and contrast them. A case study would build on previous research, which has compared paramedics' and patients', and paramedics' and physicians' opinions on the appropriateness of an ambulance transportation using survey research, and studies such as ours, which examine beliefs about appropriateness in general. An ideal case study design would examine a 911 response as the unit of analysis and would include observational data, transcripts of the 911 call, and interviews with the patients, dispatchers, paramedics, nurses and physicians involved in the same case.

Little is known about the rationale that guided the implementation of the Ontario ambulance billing policy, which distinguishes essential ambulance transportation from non-essential transportation. A policy analysis that examines its rationale and intended purpose would be helpful to frame our understanding of its current impacts. An analysis of the billing policy would involve mapping out its social and historical context, and how the policy changed over time. Our study has demonstrated that the role of paramedics is evolving and certainly has evolved

since early focus on expedient transportation. Nevertheless, the billing policy has not changed. A policy analysis would involve, in part, reviewing historical documents and interviewing key informants about the implementation and preservation of the billing policy.

This study revealed competing perceptions about the effect of user fees on inappropriate use. A quantitative analysis of ambulance utilization would be an interesting complement to these qualitative findings. By comparing utilization across a change in the billing policy, such as the removal and reinstatement of the user fee in New Brunswick, we could evaluate the effects of the user fee on utilization and determine whether it is an effective deterrent.

REFERENCES

1. Shah MN. The formation of the emergency medical services system. American Journal of Public Health. 2006;96(3):414-23

2. Ahl C, Nystrom M, Jansson L. Making up one's mind - Patients' experiences of calling an ambulance. Accident and Emergency Nursing. 2006;14:11-9.

3. Ministry of Health and Long-Term Care. Emergency Health Services Branch Toronto2012 [updated July 13, 2012; cited 2013 February 28, 2013]. Available from: http://www.health.gov.on.ca/english/public/program/ehs/ehs_mn.html.

4. Richards J, Ferrall S. Inappropriate use of emergency medical transport: comparison of provider and patient perspectives. Academic Emergency Medicine. 1999;6(1):14-20.

5. Ting J, Chang A. Path analysis modeling indicates free transport increases ambulance use for minor indications. Prehospital Emergency Care. 2006;10:476-81.

6. Palazzo FF, Warner OJ, Harron M, Sadana A. Misuse of the London Ambulance Service: how much and why? Journal of Accident & Emergency Medicine. 1998;15(6):368-70.

7. Zachariah B. The problem of ambulance misuse: Whose problem is it, anyway? Academic Emergency Medicine. 1999;6(1):2-5.

8. Gill J. Nonurgent use of the emergency department: appropriate or not? Ann Emerg Med. 1994;24(5):953-7.

9. Drummond A. No room at the inn: overcrowding in Ontario's emergency departments. CJEM. 2002;4(2):91-7.

10. CBC News. Ambulance fees will be cut within 12 months. CBC News, New Brunswick. February 27, 2013.

11. Government of Saskatchewan. Road Ambulance Service 2013 [February 28, 2013]. Available from: http://www.health.gov.sk.ca/road-ambulance.

12. Health PEI. Ground Ambulance Services 2013 [February 28, 2013]. Available from: http://www.healthpei.ca/index.php3?number=1020956.

13. Association of Municipalities of Ontario. Local Services Realignment: A User Guide. Toronto: Association of Municpalities of Ontario, 1999.

14. MOHLTC. Ambulance Co-Payment Billing Manual. In: Branch EHS, editor. Toronto: MOHLTC; 1992.

15. Sanmartin C. Appropriateness of healthcare interventions: concepts and scoping of the published literature. International Journal of Technology Assessment in Health Care. 2008;24(3):342-9.

16. Park RE, Fink A, Brook R, Chassin M, Kahn K, Merrick N, et al. Physician rating of appropriate indications for six medical and surgical procedures. American Journal of Public Health. 1986;76:766-72.

17. Buetow S, SIbbald B, Cantrill J, Halliwell S. Appropriateness in health care: application to prescribing. Social Science & Medicine. 1997;45(2):261-71.

18. Sharpe V, Faden A. Appropriateness in patient care: a new conceptual framework. Milbank Quarterly. 1996;74(1):115-38.

19. Fitch K, Bernstein S, Aguilar MD, Burnand B, LaCalle JR, Lazaro P, et al. The Rand/UCLA appropriateness method user's manual. Santa Monica, CA: RAND, 2001.

20. Lavis J, Anderson G. Appropriateness in health care delivery: deifnitions, measurement and policy implications. Canadian Medical Association Journal. 1996;154(3):321-8.

21. Billittier AJ, Moscati R, Janicke D, Lerner EB, Seymour J, Olsson D. A Multisite survey of factors contributing to medically unnecessary ambulance transports. Academic Emergency Medicine. 1996;3(11):1046-50.

22. Brown E, Sindelar J. The emergent problem of ambulance misuse. Annals of Emergency Medicine. 1993;22(4):646-50.

23. Camasso-Richardson K, Wilde JA, Petrack EM. Medically unnecessary pediatric ambulance transports: a medical taxi service? Academic Emergency Medicine. 1997;4(12):1137-41.

24. Chen JC, Bullard MJ, Liaw SJ. Ambulance use, misuse, and unmet needs in a developing emergency medical services system. European Journal of Emergency Medicine. 1996;3(2):73-8.

25. Frank SA, de Villiers PJ. An analysis of the appropriate use of the Caledon ambulance service in the Overberg. A short report. South African Medical Journal. 1995;Suid-Afrikaanse Tydskrif Vir Geneeskunde. 85(11):1185-6.

26. Gardner GJ. The use and abuse of the emergency ambulance service: some of the factors affecting the decision whether to call an emergency ambulance. Archives of Emergency Medicine. 1990;7(2):81-9.

27. Gibson G. Measures of emergency ambulance effectiveness: unmet need and inappropriate use. JACEP. 1977;6(9):389-92.

28. Jacob S, Jacoby J, Heller M, Stoltzfus J. Patient and physcian perspectives on ambulance utilization. Prehospital Emergency Care. 2008;12(2):176-81.

29. Kost S, Arruda J. Appropriateness of ambulance transportation to a suburban pediatric emergency department. Prehospital Emergency Care. 1999;3(3):187-90.

30. Little GF, Barton D. Inappropriate use of the ambulance service. European Journal of Emergency Medicine. 1998;5(3):307-11.

31. Morris DL, Cross AB. Is the emergency ambulance service abused? British Medical Journal. 1980;281(6233):121-3.

32. Patton GG, Thakore S. Reucing inappropriate emergency department attendances - a review of ambulance service attendances at a regional teaching hospital in Scotland. Emerg Med J. 2012.

33. Rademaker AW, Powell DG, Read JH. Inappropriate use and unmet need in paramedic and nonparamedic ambulance systems. Annals of Emergency Medicine. 1987;16(5):553-6.

34. Hjalte L, Suserud B-O, Herlitz J, Karlberg I. Why are people without medical needs transported by ambulance? A study of indications for pre-hospital care. European Journal of Emergency Medicine. 2007;14:151-6.

35. Rademaker A, Powell D, Read J. Inappropriate use and unment need in paramedic and nonparamedic ambulance systems. Ann Emerg Med. 1987;16(5):553-6.

36. Wolcott B. What is an emergency? Depends on whom you ask. JACEP. 1979;8:241-3.

37. Morgans A, Burgess S. What is a health emergency? The difference in definition and understanding between patients and health professionals. Australian Health Review. 2011;35:284-9.

38. Gratton M, Ellison S, Hunt J, John O. Prospective determination of medical necessity for ambulance transport by paramedics. Prehospital Emergency Care. 2003;7(4):466-9.

39. Vardy J, Mansbridge C, Ireland A. Are emergency department staffs' perceptions about the inappropriate use of ambulances, alcohol intoxication, verbal abuse and violence accurate? Emerg Med J. 2009;26:164-8.

40. Lowe R, Abbuhl S. Appropriate standards for "appropriateness" research. Ann Emerg Med. 2001;37:629-32.

41. Kirkby HM, Roberts LM. Inappropriate 999 calls: an online pilot survey. Emergency Medicine Journal. 2012;29(2):141-6.

42. Mann NC, Schmidt TA, Cone DC. Defining research criteria to characterize medical necessity in emergency medical services: a consensus among experts at the Neely Conference. Prehospital Emergency Care. 2004;8:138-53.

43. Schuman L, Wolfe H, Sepulveda J. Estimating demand for emergency transportation. Medical Care. 1977;15(9):738-49.

44. Neely K. Ambulance transports: What are the alternatives? Academic Emergency Medicine. 1997;4(12):1103-6.

45. McLeod N. Healthare organizations and patient transfers: a transportation industry perspective. Healthcare Quarterly. 2002;5(4):81-4.

46. Dobby C. Tories vow to axe ambulance fees, reinstate heating program. Telegraph-Journal. May 28, 2010.

47. Cochrane A. Ambulance fees a tax grab: senior. Times & Transcript. March 25, 2009.

48. Bosca JD. It's an ambulance - not a taxi. Ambulance Service of New South Wales. Sydney 2008.

49. Corporate Communications Department YAS. Can you Spot the Difference between an Ambulance and a Taxi? 2007.

50. London Ambulance Service. Use Us Wisely London. 2009.

51. Creswell J. Qualitative Inquiry and Research Design: Choosing among five traditions. London: SAGE Publications; 1998.

52. Glaser B, Strauss A. The Discovery of Grounded Theory. Chicago: Aldine; 1967.

53. Charmaz K. Constructing Grounded Theory: A practical guide through qualitative analysis. London: SAGE Publications; 2006.

54. Charmaz K. 'Discovering' chronic illness: using grounded theory Social Science & Medicine. 1990;30(11):1161-72.

55. Mills J, Bonner A, Francis K. Adopting a constructivist approach to grounded theory: Implications for research design. international Journal of Nursing Practice. 2006;12:8-13.

56. Patton MQ. Qualitative Research & Evaluation Methods. 3rd edition ed. Thousand Oaks, CA SAGE Publications, Inc; 2002. 688 p.

57. Macbeth D. On "reflexivity" in qualitative research: two readings, and a third. Qualitative Inquiry. 2001;7(1):35-68.

58. Hellawell D. Inside–out: analysis of the insider–outsider concept as a heuristic device to develop reflexivity in students doing qualitative research. Teaching in Higher Education. 2006;11(4):483-94.

59. Merton R. Insiders and Outsiders: A chapter in the sociology of knowledge. American Journal of Sociology. 1972;78(1):9-47.

60. Grand River Hospital. Emergency 2009 [February 26, 2013]. Available from: http://www.grhosp.on.ca/Emergency.

61. St. Mary's General Hospital. Care Services and Support 2013 [February 26, 2013]. Available from: http://www.smgh.ca/care-services-support/emergency-department/.

62. Cambridge Memorial Hospital. Emergency Services 2013 [February 26, 2013]. Available from: http://www.cmh.org/emerg_services.php.

63. Niagara Health System. Sites and Services 2013 [February 26, 2013]. Available from: http://www.niagarahealth.on.ca/services.

64. Region of Waterloo. Emergency Medical Services 2012 [February 26, 2013]. Available from: http://chd.region.waterloo.on.ca/en/healthylivinghealthprotection/emergencymedicalservices.asp.

65. Niagara Region. Emergency Medical Services 2013 [February 26, 2013]. Available from: http://www.niagararegion.ca/living/health_wellness/ems/default.aspx.

66. Altheide D. Qualitative Media Analysis. Manning P, Van Maanen J, Miller M, editors. Thousand Oaks, CA: SAGE Publications, Inc.; 1996.

67. Freeman B. Tobacco plain packaging legislation: a content analysis of commentary posted on Australian online news. Tobacco Control. 2011;20:361-266.

68. Schultz D, Loving J. Challenges since Wikipedia: the availability of Rorschach information online and internet users' reactions to online media coverage of the Rorschach-Wikipedia debate. Journal of Personality Assessment. 2012;94(1):73-81.

69. Sisak M, Mark L, Varnik A. Internet comments elicited by media portrayal of a familicide-suicide case. Crisis. 2012;33(4):222-9.

70. Lincoln YS, Guba EG. Naturalistic Inquiry. Newbury Park, CA: SAGE; 1985.

71. Krefting L. Rigor in qualitative research: the assessment of trustworthiness. American Journal of Occupational Therapy. 1991;45(3):214-22.

72. Watts R. Paramedics' role to be expanded; Could provide care in residential facilities or hospital emergency rooms. Victoria Times Colonist. April 22, 2010.

73. Chase H. Riding along with the angels of the night. Calgary Herald. January 24, 2008.

74. Buist S. Paramedics patch health-care cracks; EMS initiative aims to break cycle of admission and release, easing load on hospitals. The Hamilton Spectator. March 2, 2011.

75. Welch MA. Sedans may replace ambulances - More mulled to free up ERs. Winnipeg Free Press. October 16, 2009.

76. Canadian Press. INDEX: Health. Halifax Chronicle Herald. November 25, 2008.

77. Wiseman R. Paramedics, the dark angels of grace. Calgary Herald. August 13, 2008.

78. Plant D. Health authority looks to private companies to shuttle low-risk patients. The Canadian Press. July 15, 2008.

79. Markusoff J. Ambulance reform to steer patients to clinics. The Edmonton Journal. May 30, 2008.

80. Stolte E. Real-time link with doctors saving lives; MDs honoured for helping ambulance crews transmit vital data to hospitals. Edmonton Journal. September 29, 2009.

81. Low-income seniors won't have to pay ambulance fee. CBC News. April 27, 2012.

82. Ambulance N.B. reports sharp drop in calls. CBC News. November 15, 2010.

83. Spears T. Paramedics could save more lives: study; Ottawa-type training could help many cities. The Ottawa Citizen. May 26, 2007.

84. $600 ambulance bill outrages P.E.I. tourist. CBC News. March 18, 2011.

85. Bill health regions for idling EMS; Patients will be moved faster when CHR must pay for delays. Calgary Herald. January 25, 2007.

86. Wente M. Little old ladies crash the system; If you think she'll be better off at home, then take her home. You'll be glad you did. The Globe and Mail. November 11, 2010.

87. Richards G. Failure to call 911 upsets student's family. Calgary Herald. March 15, 2008.

88. Boesveld S. Hospital calls 911 for senior lying at its door; Woman, 82, told to wait for paramedics. National Post. October 19, 2011.

89. Auld A. N.S. man angry hospital wouldn't help father having heart attack in parking lot. The Canadian Press. December 4, 2009.

90. The Canadian Press. INDEX: Health, Politics. The Canadian Press. April 21, 2009.

91. Tewnion G. Ambulances are not free taxis; More rescue staff sought. The Toronto Star. February 3, 2011.

92. Wright T. Paramedics could soon take on bigger role in health care. The Guardian. August 14, 2012.

93. Gerstel J. Easing the pressure on emergency. The Toronto Star. May 6, 2009.

94. The Canadian Press. INDEX: Health, Politics. Charlottetown Guardian. March 10, 2009.

95. The Canadian Press. Get rid of ambulance fees, says Horwath. The Hamilton Spectator.

96. Dead son's ambulance bill outrages N.B. dad. CBC News. January 18, 2011.

97. Talaga T. Ontario NDP would scrap ambulance fee; Leader says $45 charge discouraged her mom. The Toronto Star. June 16, 2011.

98. The Canadian Press. Ambulance Fees. New Brunswick Telegraph-Journal. January 19, 2011.

99. EMS says biling mix-up resolved. Calgary Herald. April 6, 2007.

100. The Canadian Press. N.B. seniors advocate says ambulance fees lead to confusion, reluctance. Moncton Times and Transcript. September 24, 2009.

101. The Canadian Press. INDEX:Health. Charlottetown Guardian. November 19, 2008.

102. P.E.I. ambulance use up 27%. CBC News. May 5, 2011.

103. Anderson F. Medical coverage doesn't come cheap for those without a group plan. Vancouver Sun. October 27, 2007.

104. Wood J. Ambulance fees increase justified: health minister. Saskatoon Star Phoenix. December 15, 2010.

105. Rosthern ambulance hopes to upgrade staff. Saskatoon Star Phoenix. October 6, 2011.

106. The Canadian Press. N.B. health minister says campaign pledge to end ambulance fees will be met. Fredericton Gleaner. March 23, 2011.

107. Maurino R. Ontario NDP push to ease stress of ambulance fees. Waterloo Region Record. June 16, 2011.

108. The Canadian Press. New Brunswick brings back fees for patients to take ambulances. Moncton Times and Transcript. June 30, 2009.

109. The Canadian Press. N.B. Tories blame user fee on sharp decline in number of ambulance calls. Moncton Times and Transcript. February 5, 2010.

110. Moore N. No more free ambulance rides. Times & Transcript. July 1, 2009.

111. Petrie D. An emergency medical services controversy in Nova Scotia: What is expanded-scope EMS? Canadian Journal of Emergency Medicine. 2000;2(1):39-40.

112. Socransky S, Pirrallo R, Rubin J. Out-of-hospital treatment of hypoglycemia: Refusal of transport and patient outcome. Academic Emergency Medicine. 1998;5:1080-5.

113. Lerner EB, Billittier AJ, Lance D, Janicke D, Teuscher J. Can paramedics safely treat and discharge hypoglycemic patients in the field? Am J Emerg Med. 2003;21:115-20.

114. Bissell RA, Seaman KG, Bass RR, Racht E, Gilbert C, Weltge AF, et al. Change the scope of practice of paramedics? An EMS/public health policy perspective. Prehospital Emergency Care: Official Journal of the National Association of EMS Physicians and the National Association of State EMS Directors. 1999;3(2):140-9

115. Bissell RA, Seaman KG, Bass RR, Racht E, Gilbert C, Weltge AF, et al. A medically wise approach to expanding the role of paramedics as physician extenders. Prehospital Emergency Care: Official Journal of the National Association of EMS Physicians and the National Association of State EMS Directors. 1999;3(2):170-3

116. Spaite D, Criss E, Valenzuela T, Meislin H. Developing a foundation for the evaluation of expanded-scope EMS: a window of opporunity that cannot be ignored. Ann Emerg Med. 1997;30(6):791-6.

117. Lerner EB, Fernandez AR, Shah MN. Do emergency medical services professionals think they should participate in disease prevention? Prehospital Emergency Care: Official Journal of the National Association of EMS Physicians and the National Association of State EMS Directors. 2009;13(1):64-70

118. Cone DC, Ahern J, Lee C, Baker D, Murphy T, Bogucki S. A descriptive study of the "lift-assist" call. Prehospital Emergency Care. 2013;17:51-6.

119. Snooks HA, Halter M, Close JC, Cheung WY, Moore F, Roberts SE. Emergency care of older people who fall: a missed opportunity. Quality & Safety in Health Care. 2006;15(6):390-2.

120. Hauswald M. Can paramedics safely decide which patients do not need ambulance transport or emergency department care? Prehospital Emergency Care: Official Journal of the National Association of EMS Physicians and the National Association of State EMS Directors. 2002;6(4):383-6

121. Kamper M, Mahoney BD, Nelson S, Peterson J. Feasibility of paramedic treatment and referral of minor illnesses and injuries. Prehospital Emergency Care: Official Journal of the National Association of EMS Physicians and the National Association of State EMS Directors. 2001;5(4):371-8

122. Schmidt TA, Atcheson R, Federiuk C, Mann NC, Pinney T, Fuller D, et al. Hospital follow-up of patients categorized as not needing an ambulance using a set of emergency medical technician protocols. Prehospital Emergency Care: Official Journal of the National Association of EMS Physicians and the National Association of State EMS Directors. 2001;5(4):366-70

123. Schaefer RA, Rea TD, Plorde M, Peiguss K, Goldberg P, Murray JA. An emergency medical services program of alternate destination of patient care. Prehospital Emergency Care: Official Journal of the National Association of EMS Physicians and the National Association of State EMS Directors. 2002;6(3):309-14

124. Pointer JE, Levitt MA, Young JC, Promes SB, Messana BJ, Adèr ME. Can paramedics using guidelines accurately triage patients? Annals of Emergency Medicine. 2001;38(3):268-77

125. Silvestri S, Rothrock S, Kennedy D, Ladde J, Bryant M, Pagane J. Can paramedics accurately identify patients who do not require emergency department care? Prehosp Emerg Care. 2002;6(4):387-90.

126. Emergency Medical Services Chiefs of Canada. The Future of EMS in Canada: Defining the New Road Ahead. Calgary, Alberta: EMSCC, 2006.

127. Hu J. A model of ambulance deployment: a case study for the Region of Waterloo EMS. Waterloo: University of Waterloo; 2011.

128. Booker M, Simmonds R, Purdy S. Patients who call emergency ambulances for primary care problems: a qualitative study of the decision-making process. Emerg Med J. 2013;Published Online First:1-5.

129. Yarris L, Moreno R, Schmidt TA, Adams A, Brooks H. Reasons why patients choose an ambulance and willingness to consider alternatives. Academic Emergency Medicine. 2006;13(4):401-5.

130. Wofford J, Schwartz E, Byrum J. The role of emergency services in health care for the elderly: a review. The Journal of Emergency Medicine. 1993;11:317-26.

131. Ackermann R, Kemle K, Vogel R, Griffin R. Emergency department use by nursing home residents. Ann Emerg Med. 1998;31(6):749-57.

132. Lamb G, Tappen R, Diaz S, Herndon L, Ouslander J. Avoidability of hospital transfers of nursing home residents: perspectives of frontline staff. J Am Geriatr Soc. 2011;59(9):1665-72.

133. Lightstone S. Health-care-by-phone services spreading across country. JAMC. 2002;166(1):80.

134. Hill K. Phoning in the research: the untested assumption that health help lines decrease non-urgent use of emergency departments. Canadian Association of Health Services and Policy Research; May 29, 2012; Montreal, QC2012.

135. Tippett V, Toloo G, Eeles D, Ting J, Aitken P, FitzGerald G. Universal access to ambulance does not increase overall demand for ambulance services in Queensland, Australia. Australian Health Review. 2013;37:121-6.

136. Vertesi L. Does the Canadian Emergency Department Triage and Acuity Scale identify non-urgent patients who can be triaged away from the emergency department? Canadian Journal of Emergency Medicine. 2004;6(5):337-42.

137. Schull M, Kiss A, Szalai J-P. The effect of low-complexity patients on emergency department waiting times. Ann Emerg Med. 2007;49(3):257-64.

138. Ohshige K. Reduction in Ambulance Transports during a Public Awareness Campaign for Appropriate Ambulance Use. Academic Emergency Medicine. 2008;15(3):289-93.

APPENDICES

Appendix A: Interview Guide

1. How would you define the role of a paramedic and the role of ambulance services in the health care system?

    a. What do you consider to be an appropriate use of your time and skills? (Try to get at difference between what they think the role is and what they think the role should be)

2. Do you think people should be charged to use an ambulance?

    a. Do you think people should be charged *more* if their ambulance use is "non-essential"?

    b. Should physicians be the ones to make this decision? If not, who should be?

3. How would you define or describe "inappropriate use" of ambulance services?

4. Is there a difference between inappropriate ambulance use and inappropriate ED use?

5. Are there any organizations that you think misuse ambulance services? **(NB: This question was added after 3rd interview)**

6. What factors do you think contribute to people using ambulance services inappropriately?

Appendix B: Media Flow Chart