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Access to Care Prior to the Emergency Department Visit

by

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Abstract

This thesis presents the results of a cross-sectional survey that examined access to primary care by patients presenting with CTAS 2-5 to two urban emergency departments (EDs) in Edmonton, Alberta, Canada. Of 905 patients who enrolled in the study, 21% reported no relationship with a family physician (FP). The majority of patients attempted at least one other source of treatment or advice prior to the ED visit (68%) and believed that the ED was their best care option (90%). Patients with a FP demonstrated better preventive health behaviours with more frequent preventive initiatives (e.g., flu vaccination), lower risk taking behaviours (e.g., less smoking, more seat belt use), and more frequent prostate screening by men. Factors found to be significantly associated with not having a FP were: male, young (18-34 years old), Aboriginal ethnicity, single (never married), current smoker and low acuity presentation (CTAS 4 or 5).

Preface

This thesis is presented in the paper-based format. It is composed of an introductory chapter, two related research papers, and a concluding chapter. Each chapter is presented with its own introduction, body of text, conclusion and set of references. Chapters Two and Three of this thesis have been written with the intention that they will be submitted for publication.

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List of Abbreviations

A&E	Accident and emergency department
AAFP	American Academy of Family Physicians
ABFP	American Board of Family Practice
ACEP	American College of Emergency Physicians
CAM	Complimentary and alternative medicine
CCHS	Canadian Community Health Survey
CH	Capital Health
CI	Confidence interval
CTAS	Canadian Triage and Acuity Score
ED	Emergency department
ER	Emergency room
LOS	Length of stay
LWBS	Left without being seen
LWOT	Left without treatment
MD	Medical doctor
PCP	Primary care physician
Q	Quintile
OR	Odds ratio
RAH	Royal Alexandra Hospital
SD	Standard deviation
SES	Socioeconomic status
SHSS	Satisfaction with Health Services Survey
SPSS	Statistical Package for the Social Sciences
UAH	University of Alberta Hospital

Chapter 1

Introduction

1.1 Introduction

The hospital emergency department (ED) is often considered the "safety net" for the healthcare system. In Canada, EDs have borne the brunt of significant health care cutbacks. The consequent pressures have contributed to ED overcrowding, which has become a serious national issue.[1] ED crowding is a complex and multifactorial problem, thus cannot be studied by examining the ED in isolation. Because it reflects systematic problems within the larger context of the entire health care system, it must be considered within this perspective.[2]

To date, efforts to understand overcrowding have taken a broad approach by collecting descriptive data on general demographic characteristics such as the genders and ages of patients presenting to the ED, and administrative data such as presenting complaints, the number of hours patients wait to see a physician, and discharge diagnoses. Apart from these data, there is currently very little known about patient presentations to Canadian EDs because detailed evaluations regarding why patients present to the ED have been infrequently studied. There is a notable scarcity of information on ED patient access to primary care physicians (PCPs), such as a family doctor or general practitioner, their relationship with these providers and their reason for selecting the ED on the day of presentation. A PCP provides integrated, accessible health care services that address a large majority of personal health care needs, develops a

sustained partnership with patients, and practices in the context of family and community.[3] Care by a PCP emphasizes seven important features: continuous, first contact, comprehensive, coordinated, community-oriented, family-centered, and culturally competent.[4]

Attempting to understand why patients present to the ED may help to highlight inefficiencies in the health care system, and may help to find permanent solutions to overcrowding. This information may be especially valuable among vulnerable groups in society that have been documented to use the ED disproportionately, such as the poor and Aboriginals.[5;6] Through elucidating reasons why patients present to the ED, it is possible to study the components of the linkage between ED and the PCP, with one aim being to identify any barriers to this linkage. This chapter presents a summary of the literature in three specific areas:

(1) the emergency department;

(2) access to primary care;

(3) marginalization.

1.2 The Emergency Department

1.2.1 Definition of an Emergency Department

The emergency department (also known as the ED; accident and emergency department or A & E; emergency room or ER) is the component of a health care organization that serves unscheduled patients and provides emergency medical and surgical care services to those who are acutely unwell or injured.[7] In North America and

most developed counties, an ED is typically supervised by physicians experienced in and, in urban centres at least, often by those specializing in emergency medicine. Some operate on limited hours; however, most operate 24 hours per day, 7 days a week, 365 days per year.

The ED has two defining characteristics that make it a unique practice setting. The first is that it is able to deliver a full range of medical services to acutely ill or injured patients, regardless of the nature of the presenting complaint. The second is its around-the-clock accessibility; it offers care 24 hours per day, seven days of the week.

1.2.2 The Role of the Emergency Department Within Canada's Health Care System

Canada boasts a universal, publicly-financed health care system known to Canadians as Medicare. The Canada Health Act[8] provides Canadian citizens with a guarantee of access to universal, comprehensive coverage for medically necessary hospital, in-patient and out-patient physician services. Medical insurance in Canada is socialized, thus funded by the federal and provincial governments. All citizens are entitled to free medical care in the ED, primary care, inpatient and outpatient settings.

The ED occupies a critical role in the health care system. It interacts directly with PCPs, emergency health services (a.k.a. ambulance services), in-hospital care, home care, and long-term care services. It often assumes the role of the gateway of entrance for patients admitted to a hospital. Moreover, the role of emergency care is to diagnose and treat patients in the acute and sub-acute phase of illness and injury as part of the patient's continuum of care.

The ED delivers at least 3 general categories of care:

(1) Emergency care.

In most developed countries, the ED exists largely to provide care in the event of catastrophic illness and injury.[9] The ED is also often a referral site for other providers believing that patient stabilization and hospital admission are required. These patients may be referred from urgent care centers, skilled nursing facilities, home health care providers, other hospitals, ambulatory clinics, and other sites.

(2) Unscheduled urgent care.

Other parts of the acute care system often have inadequate capacity for unscheduled urgent care, thus the ED frequently provides this type of care. Patients are often sent to the ED because their clinic cannot quickly treat them for an acute problem (or an acute exacerbation of a chronic problem) or because other sources of after-hours care are unavailable.[10] In other cases, patients may schedule appointments for an acute condition but come to the ED because their symptoms worsen before they can be treated. Some ambulatory care systems have reported success in providing same-day appointments[10-12], however, the delay for an acute appointment is often longer than patients are willing or able to wait. Consequently, the convenience of same-day care also influences patient decisions to seek ED care. Furthermore, the availability of after-hours care may create fewer conflicts with employment, educational, and family responsibilities.[13]

(3) Safety net care.

ED use for primary care by nonurgent patients has long been referred to as the "safety net" role. This role is highlighted by the relationship between the ED and vulnerable populations. A factor recognized to influence patients to use the ED is a lack of access to a regular source of care[14;15], which is known to be more common among vulnerable groups such as recent immigrants and the poor.[16] The ED is often the only open door for marginalized and underserved patient populations.[17]

1.2.3 Variations in the Utilization of Emergency Departments

A systematic review of the English language literature on utilization of EDs in Canada was conducted. The following databases were searched: MEDLINE, 1966 through April Week 4, 2005 (descriptors/key words: Emergency Service, Hospital/ut [Utilization], Canada); HEALTHSTAR, 1987 through April 2005 (descriptors/key words same as MEDLINE); EMBASE, 1988 through 2005 Week 18 (descriptors/key words: emergency ward, health care utilization, hospital utilization, Canada); and CINAHL, 1982 to April Week 5 2005 (descriptors/key words: emergency service/ut, Canada). The criteria for inclusion included Canadian-based articles that reported on the utilization of EDs based on national, provincial, or municipal data. Articles were excluded if they focussed on non-Canadian EDs, and if they did not report relevant statistics on ED utilization in Canada.

Reference lists of included studies were examined to identify additional references manually and to search for additional references using the cited reference

search feature of the Web of Science database. To identify sources belonging to the grey literature (difficult to find literature that is not generally available in the standard electronic sources such as MEDLINE and may include, but is not limited to, reports presented as: abstracts, theses, internet websites, government and un-published documents, and un-referenced journals), provincial health websites were also searched. Overall, from 198 articles and from the grey literature, 38 studies were identified as potentially relevant by reading the titles and abstracts. Of these, 8 were excluded because they were confined to subgroups that were overly specialized, or they did not represent consecutive patients over a defined period of time.[18-25] Thirty references remained for inclusion.[26-55] Figure 1.1 summarizes the literature review while the summaries of the articles and the grey literature included in the literature review are presented in chronological order in Tables 1.1(a) and (b).

Table 1.1(a) summarizes the use of the ED in Canada at the national and provincial levels. The rate of ED utilization that has been reported at a population level has varied widely based on jurisdiction and time of year. For example, in 2000, this rate ranged from 314 ED visits per 1000 persons in Ontario[26] to 378 visits/1000 in the US[56] to 426 visits/1000 in Edmonton.[27] National level studies are scarce; however, the general trend seems to be an increase in ED utilization as time progresses, as is plainly seen in one study spanning ten years.[55] The majority of provincial level studies from Ontario reported that approximately 20% of the population visited an ED at least once a year.[26;39;43;54] There was one exception, which was a single study that reported approximately 13% of the population visited an ED at least once a year.[32] In Edmonton, the general trend seems to also be an increase with time, as illustrated by Figure 1.2.

Table 1.1(b) summarizes the ED utilization by specialized subgroups. While the represented studies are too diverse to describe general trends, it is clear that the ED is an often-used source of care for many Canadians.

1.2.4 Satisfaction with Emergency Department Services

Patient satisfaction with care received in EDs has varied across studies. A survey of Albertans in 2004 found that the satisfaction of Albertans with ED services compared to satisfaction with other health care areas was low. Overall, 50% of Albertans were satisfied with ED services, 27% were dissatisfied, and 23% were neutral.[28] The proportion of Albertans who were satisfied with ED services was thus notably lower than the proportion satisfied with family doctors (84%), walk-in clinics (59%), and specialists (73%). Forty-nine percent of Albertans claimed it was easy to access ED services and 29% said it was difficult. The factors most associated with ED service satisfaction were the amount of time it took to see a doctor after a nurse's initial assessment and the ED staff explaining the reasons behind a patient's wait.[28]

Other studies have reported patient dissatisfaction with ineffective, inadequate, impersonal care received in the ED.[57;58] The Canadian Community Health Survey (CCHS) asked ED users if they were satisfied with their care. Of the 2.4 million people whose most recent hospital visit had been in an ED, approximately 73% said they had received excellent or good care in the ED while 11% said it was poor. Overall, 20% of Canadian ED users said that they were "somewhat" or "very dissatisfied" with the way services were provided, ranging from approximately 24% of Ontario ED users to 11% of ED users in the Yukon reporting dissatisfaction.[59] Some investigations have found a

positive association between satisfaction and acuity[60-62], possibly because they receive more staff attention and quicker throughput times.[63]

1.2.5 Overcrowding in the Emergency Department

Overcrowding has become a national problem and a chronic state in many emergency departments. It has been a dominant topic in emergency medicine health services literature[64] and its alleviation has been identified by the American College of Emergency Physicians (ACEP) as one of its key priorities.[65] The ACEP Crowding Resources Task Force developed the following definition of ED overcrowding:

> A situation in which the identified need for emergency services outstrips available resources in the ED. This situation occurs in hospital EDs when there are more patients than staffed ED treatment beds and wait times exceed a reasonable period. Crowding typically involves patients being monitored in non-treatment areas (e.g. hallways) and awaiting ED treatment beds or inpatient beds. Crowding may also involve an inability to appropriately triage patients, with large numbers of patients in the ED waiting area of any triage assessment category.[65]

There are many factors that contribute to overcrowding[66], including but not limited to the following:

a) Lack of beds for admitted patients[66-68];

b) Lack of access to primary care, specialist physicians, and nurse practitioners[2];

c) Shortage of emergency nursing and physician staff[66];

d) Increased complexity and acuity of patients presenting to the ED[69];

e) Lack of alternative advanced diagnostic testing and facilities[66];

f) Non-urgent visits.[60]

Overcrowding affects both patients and staff, including but not limited to the following consequences:

a) Ambulance diversions[66];

b) Delays in care[69];

c) Patients leaving-without-being-seen (LWBS)[70;71];

d) Medical errors as a significant source of preventable injury and death[9];

e) Frustration of stuff (nurses, MDs)[66];

f) Spread of infectious disease.[67]

1.3 Access to Primary Care

1.3.1 Access to Care

One of the five core principles of the Canada Health Act is *accessibility*. This tenet states that all Canadians be provided "insured health services on uniform terms and conditions and on a basis that does not impede or preclude... reasonable access to those services by insured persons".[8] The definition of "reasonable access" is not clear, however[72], and certain populations evidently continue to face barriers accessing health care. Proposed definitions of access include having a regular source of care as a structural component of the health care system that demonstrates an individual's uninhibited entry into the system[73] and "the timely use of personal health services to

achieve the best possible health outcomes".[74] For the purposes of this study, access to care was defined by previously proposed indicators of healthcare access: having a regular place to go for care, having a regular provider at that place, and having care at the regular place that fits a primary care model.[75]

1.3.2 Primary Care

Primary health care is the first level of contact with the health system where services are mobilized to promote health, prevent illnesses, care for common illnesses, and manage ongoing health problems. Canada has a strong primary care component led by primary care physicians (PCPs), including but not limited to family doctors and general practitioners. Conversely, in the US, where primary health care is lacking for many, the ED often replaces PCPs as the source of care for non-urgent and chronic problems.[15;76;77]

National and provincial commissions responsible for health care state that every citizen should have a PCP who assumes principal responsibility for the majority of a patient's health care needs.[78] PCPs provide a variety of services, including: diagnosis and medical treatment, health promotion, coordination of care, advocacy on behalf of patients, and care based in offices, hospitals, homes, nursing homes, and community facilities. PCPs are often considered the 'gatekeepers' to the Canadian health care system. Patients must first consult a PCP as their primary caregivers in order to gain access to specialists. Despite the increasing popularity of other practitioners as primary caregivers (obstetricians and gynaecologists for women, nurse practitioners, chiropractors, physiotherapists and nurses)[79], this ensures that PCPs are the primary point

of contact for patients in the system. This gatekeeper mechanism has several benefits for the health care system. Firstly, it provides good coordination and continuity of care. Secondly, it is cost effective because control can be exercised at the initial point of access. Access to primary care is thus an important quality indicator for a health care system. Despite the tenets of the Canada Health Act and the central role of primary care within the health care system, research indicates that many people do not have a PCP. Furthermore, research suggests that there may be vulnerable groups in society that are less likely to have a PCP.[16] Among the barriers to access to care patients cite are lack of accessibility, familiarity and trust in the PCP.[80]

Better access to primary care would be beneficial for the health of Canadians; it has been shown to prevent unnecessary hospitalizations[81] and improve health status.[82;83] It has been suggested that patients with a regular doctor are also less likely to use the ED than those without a regular doctor.[84]

1.3.3 Access to Primary Care

A systematic review of the English language literature on access to primary health care in Canada was conducted. The following databases were searched: MEDLINE, 1966 through April Week 4 2005 (descriptors/key words: health services accessibility, primary health care, Canada); HEALTHSTAR, 1987 through April 2005 (descriptors/key words same as MEDLINE) EMBASE, 1988 through 2005 Week 18 (descriptors/key words: health care access; primary medical care; Canada); and CINAHL, 1982 to April Week 5. Articles were included if they reported a statistic on the proportion of a sample population at the national, provincial or municipal level that did not have a PCP or

regular source of care. Articles were excluded if they were studies involving a non-Canadian population or if they did not report relevant statistics on the percentage of the study population reporting no PCP. Reference lists of included studies were examined to identify additional references manually and to search for additional references using the cited reference search feature of the Web of Science database. To identify sources belonging to the grey literature, federal and provincial health websites were also searched. Overall, from 127 articles and the grey literature, 13 references were identified as potentially relevant by reading the titles and abstracts. Of these, 1 was excluded because it described a sample population that was too specialized to be relevant to this literature search.[85] Twelve references remained and were selected for inclusion.[16;28-30;59;78;86-91] Figure 1.3 summarizes the selection process for the access to primary care literature search. Tables 1.2(a), (b) and (c) present an overview of the literature in chronological order, grouped according to national, provincial, and specialized populations (such as users of walk-in clinics or EDs).

The data sources for these studies ranged over a time period of 11 years for national and provincial population figures, and a span of 30 years for the specialized population figures. As illustrated by Figure 1.4, the general trend for both national and provincial populations is a slight increase in the proportion of Canadians who report having no PCP over this span of time. Table 1.2(a) presents data at the national level. The proportion of Canadians with no PCP has ranged from a low of 12.3% in 2001[90] to a high of 14% in 2003[59] and 2004.[30] The Commonwealth Fund International Health Policy Survey collected data on primary care experiences among adults in five countries. In Canada, 14% of 1410 adults reported having no doctor or GP whom they regularly see.[30]

Although this figure was lower than in the USA (17%), it was higher than the other three countries – Australia, New Zealand, and the United Kingdom – which respectively reported figures of 11%, 9% and 9%.[30] All studies that reported national figures were cross-sectional in design. The majority of studies[16;59;90;91] collected data from a random sample of Canadians, excluding those on Canadian Forces bases, Native reserves, and some remote areas.

At the provincial level, there was substantial variation in the proportion of the population without a PCP across different regions of Canada. Provinces that consistently reported proportions of people with no PCP that were higher than the national average included Quebec and Alberta, while Ontario, Nova Scotia and Prince Edward Island consistently reported figures that were below the national average. Figure 1.4 illustrates the general trends seen in Alberta and Ontario relative to the Canadian average, while Table 1.2(b) summarizes the data at the provincial level.

1.4 Marginalization In Healthcare

Many people face barriers to care within the health care system. These barriers include educational, cultural, linguistic, logistical, psychosocial, environmental, or institutional factors.[92-95] The ED may be the only accessible source of health care for vulnerable populations and has been documented to be used disproportionately by patients without PCPs, members of racial and ethnic minorities, and other vulnerable populations, such as those with low incomes.[5;15;96-101] For example, the CCHS found that ED usage is inversely associated with household income. The percentage of people who

had received their most recent treatment in an ED was significantly higher in people in the lowest income group (18%) compared with those in the highest income group (13%).[59]

There is abundant evidence that health disparities exist in marginalized populations. Health status is influenced by a number of health determinants, especially education and income.[102] A socioeconomic gradient in health has been well documented in many countries, including Canada; wealthier, more highly educated persons experience better health than poorer, less educated persons. Another important determinant of health is cultural background. For example, Edmonton has the second highest Aboriginal population in Canada, and a serious gap exists between the health of Aboriginal people and that of the overall population on virtually every measure of health.[102] In general, access to health care is more difficult to obtain by certain groups. There are several factors that contribute to marginalization in health, and the main factors are summarized in the box below. The barriers to quality primary care for vulnerable populations are numerous and complex. One measure of health care marginalization is the lack of a PCP.

Factors Contributing to Marginalization in Healthcare

- Age[103]
- Gender[104]
- Socioeconomic Status (e.g. income, occupation)[105]
- Cultural background (e.g. immigrant status[104], Aboriginal[106], language or inability to speak English[107])
- Sexuality[108]

1.5 Summary

The studies that have examined overcrowding are limited in scope to general demographic and administrative data concerning patient presentations to the emergency department. The literature on ED utilization rates suggests a substantial proportion of the Canadian population uses the ED, and that the rate of utilization has been increasing over time, yet varies provincially. The literature on access to PCPs demonstrates that a considerable percentage of Canadians (~5-33%) do not have a regular source of care and thus highlights the need to improve the accessibility of primary health care within Canada. The following chapters describe the patients that present to two urban EDs in Edmonton and determine how ED patients who have a PCP are different from those without a PCP. Logistic regression models presented in this thesis will identify factors associated with not having a PCP. This research may help to identify particular groups in society that face barriers to accessing primary care, as well as elucidating the types of barriers they face.

Table 1.1(a): Use of the emergency department in Canada among national and provincial populations.

Source	Location	Year	Study Population/ Data Source	ED Visits	Rate
Watson (1978)[50]	Edmonton, AB	1972 1974 1976	450,000/ ED records		1972: 81,746 visits/year 1974: 83,682 visits/year 1976: 86,445 visits/year
Steinmetz and Hoey (1978)[49]	Montreal, PQ	1966-1974	2,743,000[109]/ files from Quebec Ministry of Social Affairs		1966: 299 visits/1000 persons 1974: 541 visits/1000 persons
Weil (1993)[55]	Canada	1980 1985 1990	1980: 24,516,071[110] 1985: 25,842,736[110] 1990: 27,697,530[110]		1980: 603.8 visits/1000 persons 1985: 604.2 visits/1000 persons 1990: 640.3 visits/1000 persons
Brown and Goel (1994)[43]	ON	1990	60,972/ 1990 ON Health Survey	21.1% made at least 1 visit	
Mustard et al. (1998)[41]	Winnipeg, MB	April 1991-March 1992	657,871/ cross-sectional ecologic study using secondary data	677,661 visits in 55 days sampled	35.5 visits/100 person-years
Chan et al. (2001) [26]	ON	1993-2000 fiscal year	11.5 million/ administrative database	3.7 million visits in 2000 2.25 million made at least 1 visit in past yr 34% children under 5 made at least 1 visit in past yr 29% of seniors aged 75+ made at least 1 visit 18% aged 5-74 made at least 1 visit	314 visits/1000 persons
Kelly et al. (2001)[39]	Edmonton, AB	1996/97 fiscal yr	820,000 / retrospective review of medical records	Total visits: 288,948	
Ovens and Chan (2001)[54]	ON	April 1997-March 1998	11.3 million/ administrative database	2.16 million (19.1%) made at least one visit	

Source	Location	Year	Study Population/ Data Source	ED Visits	Rate
Saunders and Alibhai (2001)[27]	Edmonton, AB	2000	870,000[111]		426 visits/1000 persons
Alberta Health and Wellness (2002)[31]	AB	1997/98 1998/99 1999/00 2000/01	1997/98: 2.847,538 1997/98: 2,912,925 1997/98: 2,957,045 1997/98: 3,007,582/ provincial database	Made at least one visit: 1997/98: 23.7% 1998/99: 23.7% 1999/00: 24.5% 2000/01: 24.9%	
Sin et al. (2002)[48]	AB	April 1996-March 1997	2,855,715 100,580 Aboriginals (3.5%)/ provincial insurance database	31,763 visits 2,426 (7.6%) of these by Aboriginals	
Health Quality Council of Alberta (2003)[29]	AB	April 2003	4004 adults (18+)/ random telephone interviews	26% made at least 1 visit in past year 18-34 years old: 29% 55+ years old: 23%	
Yiannikoulias et al. (2003)[45]	AB Capital Health Region	1997-98 fiscal year	827,337/ administrative databases	290,118 visits	

Source	Location	Year	Study Population/ Data Source	ED Visits	Rate
Carriere (2004)[32]	Canada	2003	42,693/ CCHS cross-sectional survey	Made at least 1 visit: Canada: 13% YK: 19% NB: 18% NS: 15* QC: 14% NWT: 14% AB: 13% SK: 13% ON: 13% PEI: 13% NF: 13% MN: 12% BC: 12% NVT: 10%	
Colman et al. (2004)[34]	Edmonton, AB	April 1995-March 1996	1,000,000/ administrative database	275,660 visits	
Chan and Ovens (2004)[36]	ON	1997-98 fiscal year	11.3 million/ physician billing data	2,158,291 (18.9%) made at least one visit	
Harris et al. (2004)[47]	Elliot Lake, ON	July 2001	18,000/ verbal interviews	1472 visits	
Health Quality Council of Alberta (2004)[28]	AB	May-June 2004	4608 adults (18+)/ random telephone interviews	21% made at least 1 visit in past yr 18-34 years old: 31% 55+ years old: 21%	

Source	Location	Year	Study Population/ Data Source	ED Visits	Rate
Mamdani et al. (2004)[52]	ON	Jan 1995-Feb 2003	Scarborough: 600,000 Oshawa: 450,000 Dryden: 11,000 North Bay: 50,000 Sarnia: 68,000 Pembroke: 25,000/ Monthly cross-sectional time series using population-based administrative claims data		Scarborough: 9,000 visits/month; 1.6 visits/100 persons/month Oshawa: 9,000 visits/month; 2.2 visits/100 persons/month Dryden: 1200 visits/month; 10.4 visits/100 persons/month North Bay: 3000 visits/month; 6.0 visits/100 persons/month Sarnia: 4000 visits/month; 6.4 visits/100 persons/month Pembrooke: 2100 visits/month; 8.6 visits/100 persons/month
Saunders et al. (2004)[53]	Capital Health, AB	1998-2000	816,000/ Capital Health ambulatory care database	Total visits: 1998:331,104 1999: 326,661 2000: 350,900	
Schoen et al. (2004) [30]	Canada	March – May 2004	1410/ Commonwealth Fund International Health Policy Survey 2004 (random telephone surveys)	38% made at least 1 visit in past 2 yrs	
Schull et al. (2004)[33]	Toronto, ON	Jan 1996-April 1999 (n=170 weeks)	2.3 million/ retrospective time series analysis		9,447 -14,596 visits/week Mean: 10,936 visits/week Median: 10,941 visits/week

Table 1.1(b): Use of the emergency department in Canada among specialized populations.

Source	Location	Year	Study Population/ Data Source	ED Visits	Rate
Watson (1978)[50]	Edmonton, AB	1972 1974 1976	450,000/ ED records		1972: 2194 psychiatric visits/year 1974: 3387 psychiatric visits/year 1976: 3913 psychiatric visits/year
Hilditch (1980)[51]	Toronto, ON	1979	1972 (before community health center was established in an underserviced community in 1972): 467 1974 (after): 494	At least 1 visit: 1972 (before): 103 (22.1%) 1974 (after): 68 (13.8%)	1972 (before): 280 visits/1000 persons 1974 (after): 174 visits/1000 persons
Beland et al. (1990)[44]	PQ	1981	Laval: 31,816 Quebec metro area (QMA): 32,046/ random samples from administrative database	Laval: 17.0% made visit for emergent/urgent case QMA: 27.2% made visit for emergent/urgent case	
Delfino et al. (1997)[42]	Montreal, PQ	June-Sept 1992-93 (n=98 days)	3,213,207[112]/ Quebec ED administrative database	For respiratory illness: 1992: 8564 visits 1993: 10,659 visits For nonrespiratory illness: 1992: 12,885 visits 1993: 13,005 visits	For respiratory illness: 1992: 87.5 visits/day 1993: 109.2 visits/day For nonrespiratory illness: 1992: 131.6 visits/day 1992: 132.9 visits/day
Stieb et al. (2000)[40]	Saint John, NB	July 1992-March 1996	130,000/ ED records	19,821 cardiorespiratory visits	14.4 visits/day for cardiorespiratory illness

Source	Location	Year	Study Population/ Data Source	ED Visits	Rate
Tamblyn et al. (2001)[46]	PQ	August 1995 – August 1997	93,950 elderly persons and 55,333 adult welfare recipients: before and after cost-sharing drug policy in 1996/ provincial health database		Elderly: Pre-policy: 32.9/10,000 person-months Post-policy: 47.1/10,000 Welfare recipients: Pre-policy: 69.6/10,000 person-months Post-policy: 123.8/10,000 person-months
Long et al. (2002)[37]	Edmonton, AB	1994-98	250 cases of tuberculosis (all TB notifications)/ retrospective cohort	117 (47%) made 258 pre-diagnosis visits 6 months antedating diagnosis	
Sin et al. (2002)[38]	AB	April 1996-March 97	2,696,826[111]/ AB medical records	25,256 made at least 1 visit for asthma or COPD	
Paddock and Hirdes (2003)[35]	9 cities in ON and QC	1997-1999	683 elderly (age 65+) homecare recipients/ cross-sectional survey	88 (3.1%) made at least 1 visit	
Yiannikoulias et al. (2003)[45]	AB Capital Health Region	1997-98 fiscal year	827,337/ administration databases	41,343 visits by elderly patients (aged 66+)	
Colman et al. (2004)[34]	Edmonton, AB	1995-2000	ED patients with self-inflicted injury: 478 ED patients with asthma: 478 ED patients with other problem: 478/ administrative database		ED patients with self-inflicted injury: 232.7 visits/100 person-years ED patients with asthma: 117.6 visits/100 person-years ED patients with other problems: 83.0 visits/100 person-years

Table 1.2(a): Access to primary care by national populations.

Study	Location/Data Source	Sample size	No regular source of care or PCP
Statistics Canada (2001)[90]	Canada/ Health Services Access Survey 2001	24,747,796 (age 15+)	**12.3%**
Talbot et al. (2001)[16]	Canada/ National Population Health Survey 1994-95	15,777 (age 20+)	**13.6%**
Statistics Canada (2003)[59]	Canada/ Canadian Community Health Survey 2003	135,000 (age 12+)	**5% with no regular source of care 9% with regular site but no PCP**
Statistics Canada (2003)[91]	Canada/ Health Services Access Survey 2003	25,204,010 (age 15+)	**13.7%**
Schoen et al. (2004)[30]	Canada/ Commonwealth Fund International Health Policy Survey 2004	1410 (age 18+)	**5% with no regular source of care 9% with regular site but no PCP**

Table 1.2(b): Access to primary care by provincial populations.

Study	Location/Data Source	Sample size	No regular source of care or PCP
Statistics Canada (2001)[90]	NL	439,155	**13.8%**
	PEI	111,095	**6.4%**
	NS	753,068	**5.6%**
	NB	606,417	**5.4%**
	QC	6,003,232	**24.1%**
	ON	9,528,257	**5.7%**
	MB	860,601	**14.9%**
	SK	760,508	**9.8%**
	AB	2,388,054	**15.8%**
	BC	3,297,439	**9.8%**
	Health Services Access Survey 2001	(age 15+)	
Talbot et al. (2001)[16]	BC	15777 Canadians	**9.9%**
	MB, SK, AB		**16.4%**
	NF		**22.7%**
	ON		**6.5%**
	PEI, NS, NB		**6.6%**
	QC		**25.6%**
	National Population Health Survey 1994-95		
Canadian Cancer Society (2003)[86]	ON	600 (300 men, 300 women)	**8%**

Study	Location/Data Source	Sample size	No regular source of care or PCP
Statistics Canada (2003)[91]	NL	437,258	**12.7%**
	PEI	113,024	**8.0%**
	NS	759,965	**5.2%**
	NB	608,863	**7.0%**
	QC	6,059,745	**24.5%**
	ON	9,780,683	**8.8%**
	MB	866,755	**13.6%**
	SK	754,294	**12.8%**
	AB	2,467,023	**14.7%**
	BC/ Health Services Access Survey 2003	3,356,401 (age 15+)	**11.0%**
Health Quality Council of Alberta (2003)[29]	AB/ Satisfaction with Health Care Services Survey 2003	4004 (age 18+)	**19%**
Health Quality Council of Alberta (2004)[28]	AB/ Satisfaction with Health Care Services Survey 2004	4,608 (age 18+)	**16%**

Table 1.2(c): Access to primary care by specialized populations.

Study	Location/Data Source	Sample size	No regular source of care or PCP
Vayda et al (1975)[87]	Hamilton, ON	1606 patients presenting to ED	**10%**
Boushy and Dubinsky (1999)[88]	ON	948 ambulatory ED patients	**7%**
Langille et al. (2001)[89]	NS	1,313 students from a high school	**15.9% (M)** **7.1% (F)**
Statistics Canada (2003)[59]	Canada/ Canadian Community Health Survey 2003	3300 Canadians (age 15+) who reported at least 1 ED visit in past year	**14%**
Haggerty et al. (2004)[78]	QC * data collected in 2002	3441 patients from 100 randomly selected community and private primary care clinics in urban, suburban, rural, and remote areas	**16% (QC overall)** **22% (Montreal)** **33% (walk-in clinic patients)**

Figure 1.1: Selection of articles for inclusion in the emergency department utilization literature review.

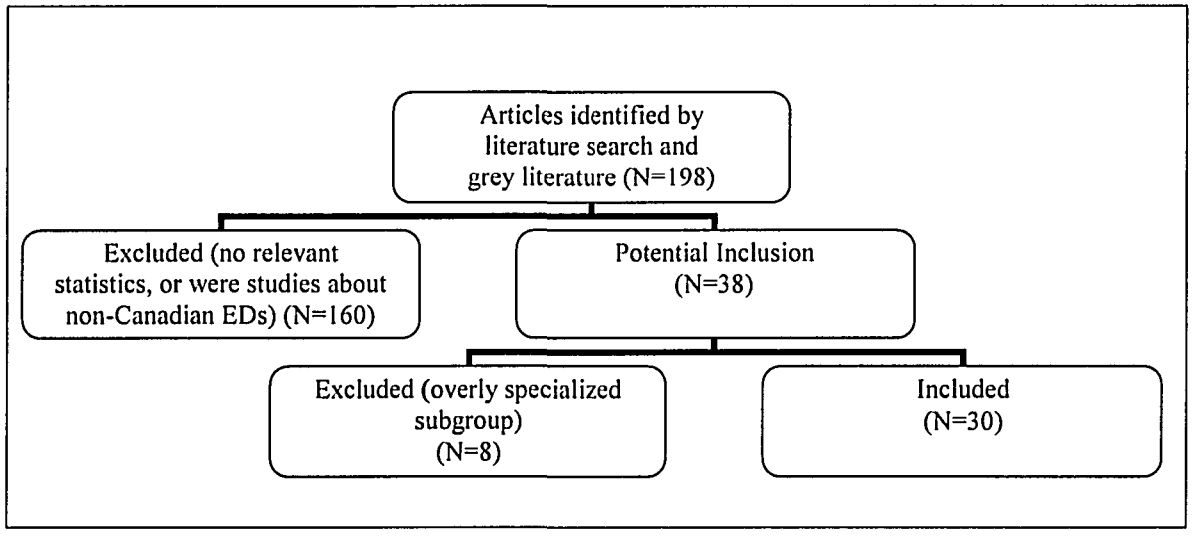


Figure 1.2: Emergency department utilization rates in Edmonton 1972-1996.

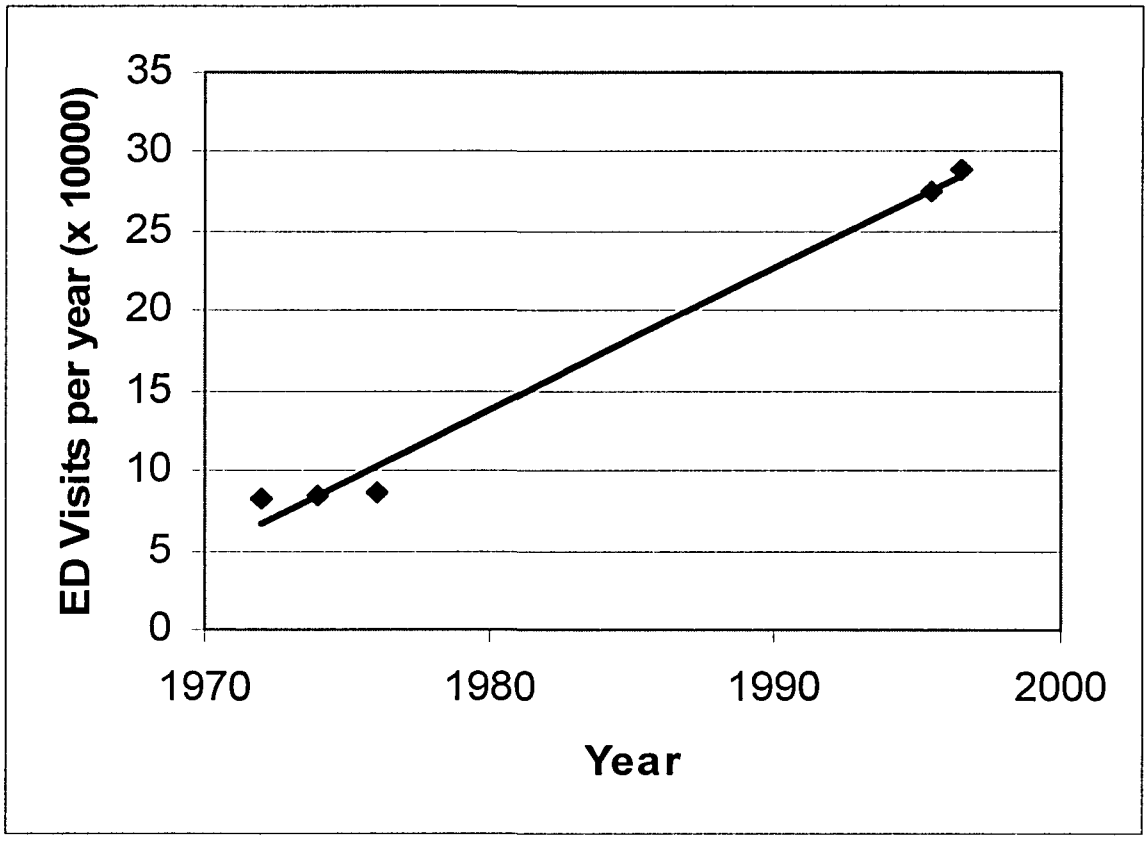


Figure 1.3: Selection of articles for inclusion in the access to primary care literature review.

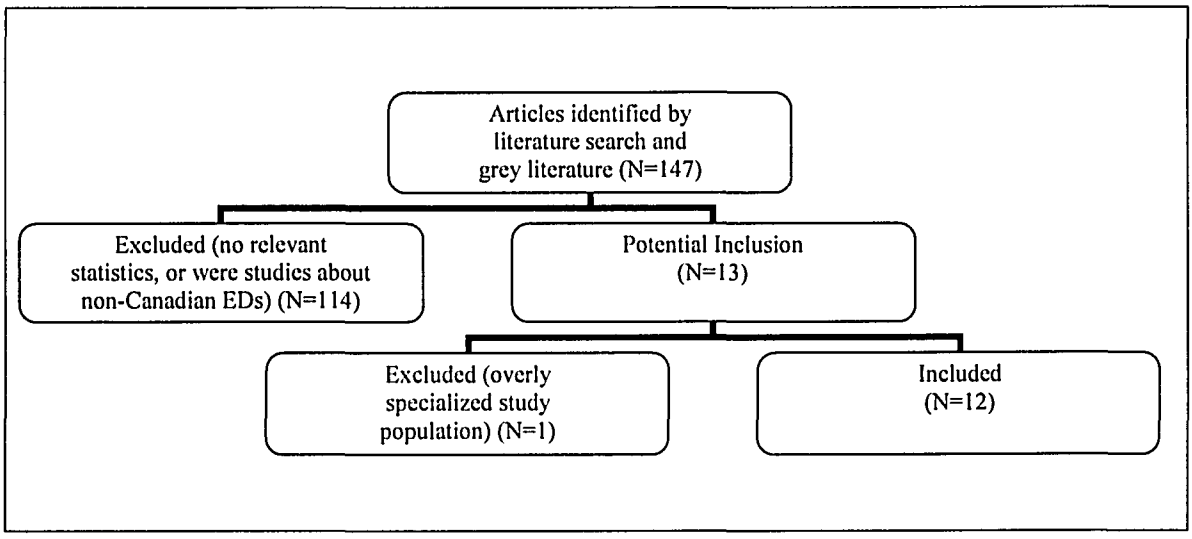
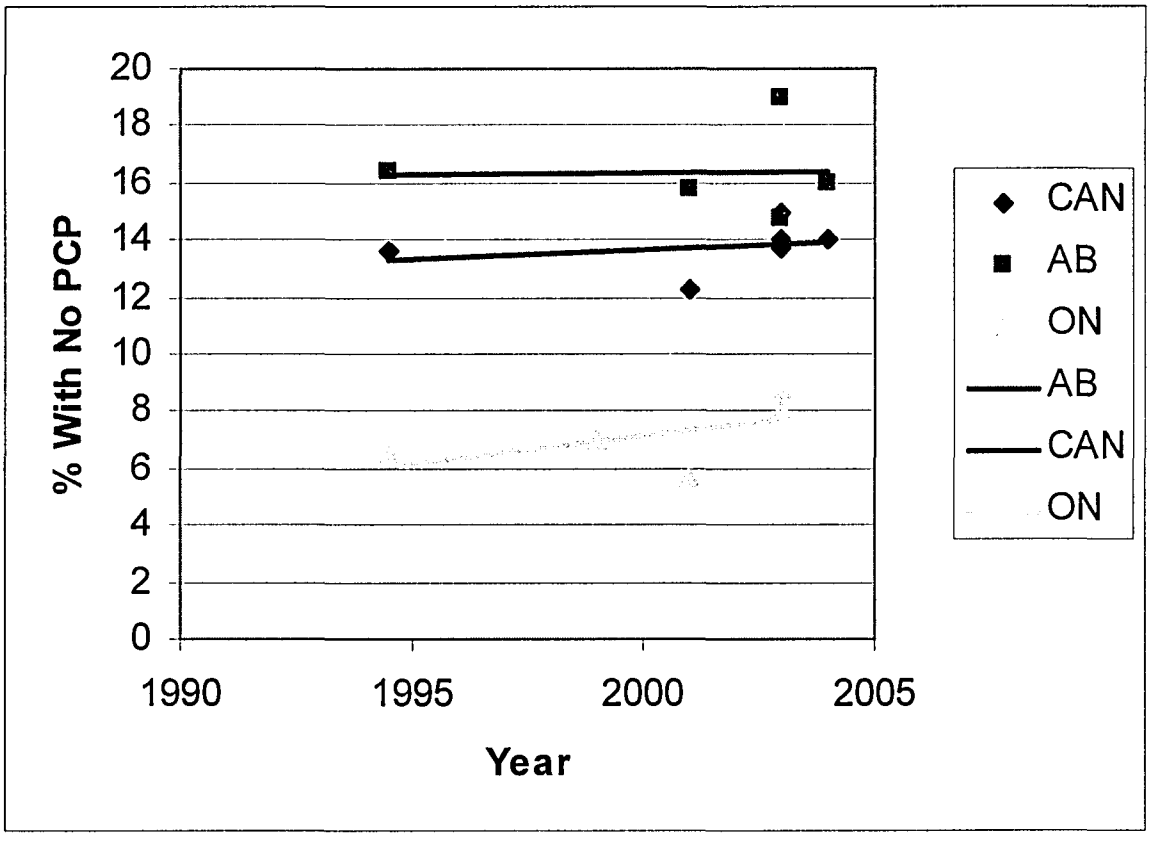


Figure 1.4: Estimates of lack of access to care by PCP for Canada, Alberta and Ontario.



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Chapter 2

Patients Presenting to the Emergency Department: Use of Other Health Care Services and Reasons for Presentation

2.1 Introduction

There is a scarcity of information about the reasons why patients present to emergency departments (ED) in Canada. What is currently known about ED presentations is based on general information regarding socio-demographic factors and administrative information from presenting complaints and discharge diagnoses. For example, the highest rates of ED use are among the very young and elderly. The most common reasons in Ontario in 2000 to visit an ED were trauma (25.4% of all ED visits), signs/symptoms (20.6%) and respiratory diseases (15.5.%).[1] Similarly, in Alberta for the 1998/99 period, ED visits for trauma were common (32.1% of all ED visits), as were respiratory diseases (17.2%), signs and symptoms (13.9%), and nervous system diseases (9.7%).[2]

Apart from data of this nature, there is currently very little else known about presentations to the EDs. For example, patients' access to primary care physicians (PCPs), their relationship with these providers and their reasons for selecting the ED on the day of presentation have been infrequently studied. Understanding why patients present to the ED may help to highlight inefficiencies in the health care system, and may help to find permanent solutions to ED overcrowding[3], especially among potentially marginalized groups.

The objectives of this chapter were to describe the patients who presented to two EDs in the Capital Health region with non-resuscitative complaints and determine their link to PCPs, their use of primary health care and access to alternative care prior to the visit, and their attempts to avoid their presentation to the ED.

2.2 Methods

2.2.1 Study Setting

Capital Health is one of Canada's largest integrated academic health regions. As one of Alberta's 9 Regional Health Authorities, Capital Health is funded by the Government of Alberta and provides health services to approximately one million residents in Edmonton, Fort Saskatchewan, Leduc, Spruce Grove and St. Albert, and the counties of Leduc, Parkland, Strathcona and Sturgeon (and communities within their geographical areas), as well as the Town of Devon and communities in the eastern part of Yellowhead County. It also serves 1.6 million residents across central and northern Alberta for their secondary and tertiary care needs. The comprehensive services offered include acute and emergency care, home care services, outreach programs, continuing care, public health, specialty clinics, mental health services and many rehabilitation and prevention programs.[4]

There are over 435,000 ED visits per year in the region. More than 130,000 occur at 2 ED sites: the University of Alberta (UAH) and the Royal Alexandra Hospital (RAH) emergency departments (CH Information Service, personal communications). Table 2.1

summarizes the general characteristics of the two main institutions in Edmonton and their surrounding patient profiles.

2.2.2 Designing and Testing of the Questionnaire

2.2.2a The Survey Instrument

The questionnaire (see Appendix 3) was self-administered and generally took less than 15 minutes to complete. A research assistant was available to aid patients who were illiterate or who experienced difficulty in answering the questions. The questionnaire was comprised of 35 questions and included fixed response and open-ended questions on demographic characteristics (Questions 1-9, and 35), severity of symptoms (Questions 10-14), sources of care sought prior to the ED visit (Questions 15-28), and preventive health behaviours (Questions 29-34), such as smoking habits, utilization of cancer screening tests, and seat belt use. The questionnaire was developed in collaboration with content experts, and the face validity of the questionnaire was measured by members of the research team, including an ethicist and an emergency room physician.

There were several challenges and considerations encountered while designing the questionnaire. One challenge was how to identify marginalized populations of patients through the questions of the survey instrument. This required the construction of a theoretical framework to define "marginalized" and was based on the literature review. Another challenge was how to measure preventive health behaviour. Since it was not possible to measure all aspects of health behaviour, which includes nutrition, exercise, cancer screening, smoking and drinking habits, a few questions were selected which are

widely accepted as appropriate proxies for preventive health practices: seat belt use, smoking habits, date of last flu shot and tetanus shot, and utilization of cancer screening.

2.2.2b Electronic and Paper Versions

Once the survey instrument was constructed, an electronic version of the questionnaire was created by V|S Communications (Trevor Strome, Edmonton, AB). This electronic version of the questionnaire was field tested by members of the research team (n = 2). It was subsequently tested by a convenience sample of 47 patients in the UAH ED for sensibility, readability, and ease of usability. The questionnaire was modified based on patient feedback.

2.2.2c Reliability Testing

Since both the paper and electronic versions of the questionnaire were to be used in this study, it was necessary to test the reliability between the two versions. A convenience sample of 10 patients was enrolled in a pilot test to determine the intra-observer reliability as well as the test-retest reliability. These patients were asked to complete one version of the questionnaire, either the paper or electronic, and then to complete the other version after a few minutes. The agreement between the two versions was found to be 100% for the questions with response options. For the questions requiring text answers, the content was similar, although the phrasing varied between the electronic and paper versions; the general pattern was observed that patients tended to write longer answers on the electronic version.

In total, there were 77 patients whose names were selected from the UAH ED database and were approached to complete the questionnaire. Of these patients, 12 refused, 6 could not be found, 1 was too unwell, and 1 left the questionnaire incomplete.

Of the 57 patients who completed the questionnaire, 10 were involved in the reliability testing and thus completed the questionnaire two times, for a total of 67 completed questionnaires.

2.2.3 Survey Methods

2.2.3a Sampling Technique/ Method of Randomization

A self-administered survey was completed on a consecutive group of patients registering to the UAH and RAH hospital EDs from the greater Edmonton area in Alberta, Canada. The sample was randomly selected based on time of registration of patients in the computerized ED records. The first patient selected was the patient who registered 1 hour previous to the beginning of the shift. If the patient was not enrolled, the next patient on the registry was approached. The sampling frames were designed to cover the patient registration time period from 7:00-22:00. Shifts were randomly allocated over 7 days of the week for 10 weeks. Sampling occurred during all time periods; however, the study is weighted based on hospital registration volume.

2.2.3b Inclusion and Exclusion Criteria

All ED patients 18 years or older were eligible. Patients who were initially too unwell (in too much pain, too violent, etc) to be selected were re-examined by an ED nurse or physician once their conditions stabilized. Patients were excluded if they remained too unwell or if they refused to participate. Some patients who met these criteria were excluded if they had a cognitive impairment (ether acute or chronic) that precluded reliable and valid responses. These impairments included dementia, cerebrovascular accidents, and head injuries. Patients were excluded if they had a triage

level of 1 (CTAS 1).♦ These patients often required immediate resuscitation (undergoing cardiac arrest, unconscious) or required intubation. Patients who could not communicate in English were excluded unless they were accompanied by a family member who could translate for them, or unless they could speak Spanish, Korean, or Portuguese (languages for which translation was available). Patients who had entered into the study or had already been approached within the past 8 weeks were also excluded.

2.2.3c Minimal Data Set

A patient registry was maintained on a daily basis consisting of baseline demographic information collected to determine the generalizability of the sample to the population presenting to the ED. The information collected included sex, age, triage level, presenting complaint, time of triage, time seen by physician, disposition time, and disposition status (e.g., admitted, discharged, transferred, died, etc). In addition, information was collected on whether the patient reported during registration having a family physician, whether or not the patient came to the ED for an injury, and whether or not the patient required an interpreter. Patient anonymity was preserved by assigning each patient an ID number upon completion of the survey and then the corresponding ID number in the minimal data set.

♦ Triage score was collected and based on the Canadian Triage and Acuity Scale (CTAS)[64], a validated triage tool[65;66] that helps define ED patients for treatment prioritization and for administrative purposes. CTAS is a five-level scale, with triage scores ranging from 1 to 5. Code 1 is a condition requiring immediate medical assessment or resuscitation. Code 2 is an emergent condition that poses a potential threat to life, limb, or function and requires medical intervention within 15 minutes. Code 3 is an urgent condition that may potentially progress to a serious problem requiring emergency intervention within 30 minutes. Code 4 denotes a condition that is related to patient age, distress, and potential for deterioration or complications and can wait up to one hour to be seen. Code 5 is a non-urgent patient who can wait two hours before being seen by a physician. The condition may be acute but not urgent and may be part of a chronic problem but with or without evidence of deterioration.[34]

At the completion of the data collection period, the information from the questionnaire and the minimal dataset were merged by patient ID number. Patients who did not complete the survey also received a patient ID number to preserve anonymity. Different methods were used to collect this baseline information at the UAH and RAH. At the UAH, all information was available from the computerized ED database records. At the RAH, sex, age, triage level, presenting complaint, time of triage, disposition time, and whether or not the patient had a family physician were collected whenever possible from the computerized ED database records. The time seen by physician, disposition status, injury status and interpreter requirements were obtained from the patient charts in the health records department.

2.2.3d Imputing Missing Data

There were several RAH patients who did not have the time seen by physician (MD time) recorded on their patient charts. In these instances, the MD time was imputed by methods devised by our research team and biostatistician. To do this, the median time that a patient waited to see a physician from the time of triage registration was determined for each triage level by subtracting the Triage Time from the MD time for all patients for which this information was available. The respective median times for each triage level were then added onto the triage registration time for patients, according to triage level. The only exception was CTAS 5 patients, for which there was an insufficient number of patients (n=18) to determine a representative MD time with confidence. The CTAS 4 median MD time was therefore used to impute missing MD times for both CTAS 4 and 5 patients. There were a few cases where this resulted in an

MD time that exceeded disposition time. In these cases, the MD time was imputed as the midpoint between the triage time and the disposition time.

2.2.3e Income Quintiles

One question on the survey collected postal codes of patients. Each valid postal code was linked to income data based on census tract estimates of average household income from the 2001 Canadian census.[5] Postal codes inside a census tract all received the same census tract estimate of income. The average household incomes were then ranked and grouped into five population quintiles, with each quintile containing approximately 20% of the patients. Q1 was then assigned as the poorest quintile, and Q5 as the wealthiest.

2.2.4 Ethical Considerations

This study was approved by the University of Alberta Health Research Ethics Board (Panel B: Health Research), and informed consent was obtained from each patient. Patients requesting further information were directed to additional information sheets available from the survey administrator or from a link within the electronic survey. Patient names and identifying characteristics were not kept, and all records were retained in a secure area.

2.2.5 Sample Size Calculation

Based on previous literature, the highest proportion of Canadians reporting no family physician in 2004 was 14%.[6] Using a value of 14%, the following formula for calculating sample size was used: $n = [t^2 * p(1-p)]/m^2$

where

n = required sample size

t = confidence level at 95% (standard value of 1.96)

p = estimated prevalence of patients without a family physician

m = margin of error

The margin of error was set at approximately 3%. Based on this formula, in order to obtain this level of precision surrounding the estimate of patients without a family doctor, a sample size of approximately 450 from each site was required. Since there were two ED sites, the total desired sample size for this study was approximately 900.

2.2.6 Statistical Analyses

The SPSS statistical package (SPSS Inc., version 13.0 for Windows, Chicago, IL) was used for all statistical analyses and data management. Dichotomous variables were reported as counts and proportions, and analyzed using chi-square statistics. Continuous variables were reported as means and standard deviations (SD) or medians and interquartile ranges (IQR), as appropriate. Frequency tables were generated to illustrate the patient demographics, distribution of ED visit characteristics; abortive actions prior to the ED visit; and factors influencing patient perception of whether or not the ED was the best option for the patient's problem. Differences in care sought prior to the ED visit between patients who did not believe the ED was the best option because they preferred to see another physician and all other patients who completed the survey were compared using chi-square tests. Results are considered to indicate significance at a p value < 0.05.

2.2.7 Thematic Content Analysis

One survey question asked: "Now that you are at the ED, do you believe this is the best option for you?" After patients responded YES or NO, they were then asked: "Why? Please explain your answer." A thematic content analysis was carried out on the text responses to this question. To identify common words and themes, the frequency of all the words contained in the responses to this question in the database were tabulated to identify frequently occurring words. These words were used in the identification of 8 major themes describing why patients (n=814) believed that the ED was the best option for their problem, and the words used to identify each theme are given in Table 2.2. There were 5 major themes of why patients *did not* believe the ED was their best option (n=91), and the words used to identify each theme are given in Table 2.3.

The question responses were manually scanned and assigned to thematically defined categories according to the appearance of key words within the correct context. All unassigned responses were scanned again manually and assigned to the most appropriate category based on one researcher's interpretation.

2.3 Results

2.3.1 Sampling

Overall, 1416 patients were selected from the ED computerized records. Figure 2.1 summarizes the recruitment success and reasons for exclusion. Twenty seven patients (2%) were ineligible because they were assigned a CTAS of 1. Of the remaining 1389 eligible patients, the most common reason for exclusion was being too unwell (n=181,

13%). Other exclusions resulted from not being able to find the patient (i.e. the patient had left the ED waiting room without being seen by a physician or had already been treated and discharged) (n=116, 8%), the patient had previously been approached (n=33, 2%), or presence of a language barrier (n=3, 0.2%). Patients who refused (n=111, 8%) reduced the number of patients who enrolled to 945 (68%). Of the enrolled patients, those who refused to complete the survey after starting it (n=40, 4%) reduced the number of patients who completed the questionnaire to 905 (96%).

The study sample was compared to the overall sample as well as the published demographics of the community of Edmonton from more comprehensive data sources. This was performed in order to determine the potential biases associated with the sample we collected and the statistics are detailed in Table 2.4.

2.3.2 Demographics

Table 2.5 summarizes the demographical information of patients in this study. The patients had a mean age of 44.05 ± 19.7 years. The proportions of males (49.1%) and females (50.9%) were approximately equal and many patients (48%) identified a current partner (spouse or common-law partner). They were predominantly Caucasian (69%); however, Aboriginal (10%) and other cultures were represented. Differences existed between the hospitals which were fairly consistent with survey data from the UAH and RAH EDs for 2004 (CH Information Systems).

Other information from this study was that many patients (47.9%) were currently employed, although other occupations were reported, including solely caring for family (5.1%), student (9.1%), retired (14.5%), and recovering from illness/on disability

(11.3%). Approximately one-fifth of patients reported living alone (22.0%). There was a notable difference between the two sites in the following areas: income distribution (higher proportion of RAH patients in the lowest income quintile), home ownership (lower proportion of RAH patients reported home/condo ownership), ethnicity (higher proportion of non-white patients at RAH), educational attainment (higher proportion of RAH patients reported < high school education), and sexual preference (lower proportion of patients at RAH were heterosexual). These differences point to the regional differences that exist within Edmonton.

2.3.3 Emergency Department Visit Information

Table 2.6 summarizes the ED visit information of the study participants. Approximately half of the patients presented with severity assessed as 4 or 5 on the CTAS scale (46.6%). The most common mode of arrival was to be driven by someone (46.1%) while less than a fifth of patients arrived by ambulance. The majority of patients arrived during the 7:00-14:00 shift (68.1%). The waiting time to see a physician (triage to placement time) was 2:04 (1:00, 3:00) hours. The ED assessment time (the time from MD assessment to disposition time) was 1:57 (0:49, 4:14) hours. The overall length of stay (LOS; from triage to disposition time) was 4:34 (2:42, 7:03) hours. The majority of patients (78.1%) were discharged with approval; however, an important proportion left without seeing a physician (6.6%). More than a third of patients (39.6%) came to the ED with a problem they had made a previous ED visit for. Of these patients, the majority (56.7%) had made 1-3 visits in the previous 5 years for this problem.

2.3.4 Link to a Primary Care Physician

Approximately one-fifth of patients (21.2%) reported having no family doctor. These patients cited various reasons for why they did not have family doctors: 28.1% of these patients reported that they had never tried to find one, 13.0% reported that they could not find one, 10.4% claimed that they did not need one, 7.3% stated that their prior family physician had retired or died, and 41.1% responded that they did not have a family physician for another reason. The most commonly cited other reason was that the patient had recently moved to the city of Edmonton.

2.3.5 Care Sought Prior to the Emergency Department Visit

Many patients attempted to seek another source of care prior to the ED visit. The sources of care that they sought are summarized in Table 2.7. Actions taken to attempt to avoid the ED visit included visiting a physician (35.7%) or another health care professional (15.4%), calling a physician's office (29.1%) or Capital Health's regional health information telephone line, HealthLINK (8.7%), or attempting another source of treatment (26.5%). The majority of patients in this study (61.3%) attempted at least one alternative source of treatment or advice before the ED visit. An overwhelming majority of patients (89.9%) believed that the ED was their best option for their problem.

2.3.6 Qualitative Description of Patient Preferences for the Emergency Department

The majority of patients (n=814, 89.9%) believed that the ED was the best option for their problem. Of these patients, 705 patients provided a response to the question:

"Why do you think the ED is the best option for you?" Thematic content analysis elucidated 8 major categories of reasons of why patients present to the ED. The responses revealed that more than one reason influenced the decisions of many patients.

The most commonly cited reason (n=230) for why patients believed the ED was their best option related to the self-perceived severity of the problem. These patients either stated their problems (n=129) or the severity of their pain and self-perceived urgency of their problems (n=101).

The next most frequently cited reason (n=185) related to quality of care. Of these patients, 150 believed the ED could provide the best care and expertise or offer the services and equipment required to treat their problems. Patients commonly referred to their need for laceration repair or diagnostic imaging (radiography), the skill and reputation of ED physicians, or the equipment available for tests as justification for their answer. Overall, 35 patients described sources of care that they had attempted prior to the ED visit as inadequate or ineffective because (a) current treatment was not working; (b) they had visited medicentres, health clinics and family doctors and had found them to be ineffective; or (c) they believed if they went elsewhere, they would be sent to the ED anyway.

Overall, 137 patients came to the ED because of the availability of physicians. Roughly half of these patients (n=67) came to have their problem diagnosed, to receive reassurance that their problem was not serious, or to fix a problem before it got worse. The other half (n=70) stated a simple desire to see a doctor or a specialist.

Approximately 100 patients (12%) were referred by a health care professional (family physician, nurse, walk-in clinic, or HealthLINK line) and 80 patients perceived the ED as the most rapid means of obtaining medical care for their problem.

There were 76 patients who felt they had no other options. Most of these patients (n=65) felt there was no other option for their specific problems and others were not aware of any other options for care in general. A small number (n=11) were from out of town; they knew of no other options or had tried unsuccessfully to find a doctor in Edmonton that was accepting new patients.

Lack of physician availability elsewhere (n=58, 7.1%) and inability to secure a physician appointment (with their own or another physician) within a reasonable time or at a convenient time (n=53, 6.5%) were other frequently cited reasons for why patients came to the ED.

A variety of other reasons are outlined in Table 2.8.

2.3.7 Qualitative Description of Patient Preferences Against the Emergency Department

A minority of patients (10.1%) responded that they did not feel that the ED was their best option. A thematic content analysis was conducted on their responses to the question, "Why do you think the ED is not the best options for you?" Five major categories of reasons were revealed and these are outlined in Table 2.10.

The majority of patients (n=34) came to the ED despite a preference for seeing another physician. Many of these patients responded that they would prefer to see another type of physician (e.g., PCP, specialist or walk-in clinic) outside of the ED if that

physician were available. The reasons why the physician was unavailable included: lack of available physician appointments within a time span the patient was willing to wait, remote location of physician, or problem occurred outside regular business hours. As described in Table 2.10, these 34 patients were more likely to have called a PCP prior to the ED visit (p=0.049) and more likely to have tried another treatment prior to the ED visit (p=0.018) than the other 871 patients who completed the survey.

Twenty seven patients felt that the wait was too long to see a physician. Twelve patients did not perceive their problems to be urgent enough to warrant a visit to the ED, but came because they were referred from another health care professional (walk-in clinic, regional health information telephone line) or because it was convenient.

2.4 Discussion

This large survey examined patients presenting to two urban EDs with CTAS 2-5 to determine their demographics, their link to PCPs, their use of primary health care and access to alternative care prior to the ED visit, and the attempts they made to avoid their visits to the ED for their problems. Overall, the patients included in this study do not reflect the socio-demographic characteristics of the residents located in close proximity to the respective hospitals. They differ from the CH population health survey within the UAH and RAH (Table 2.1) in the following ways: higher mean income, more patients with less than a high school education, lower acuity, lower admission rate and more often declaring Aboriginal status. The proportion of males (49%) and females (51%) in this study was fairly evenly split and thus this patient demographic differed from a previous

study in Alberta that found that ED visits are significantly more common among females,[7] The present study did confirm previous findings, however, that ED visits are significantly more common among those aged 18-34, and those with a high school education or less.[7] Table 2.3 summarizes how the patients in this study also differed from the general population of Edmonton (as captured by Statistics Canada 2001 Population census[8]). It is clear that belonging to certain ethnic groups (Aboriginal, Black), low educational attainment, and unemployment are associated with ED usage.

The results of this study contribute to the evidence that many Canadians still experience barriers to accessing primary health care and that the ED is often felt to be the "best option" for expedited health care. Approximately one in five (21.2%) of patients in this study reported having no PCP. Although this statistic lies within the range reported in the literature for specific populations, such as Maritimers or users of walk-in clinics (5.2%-33%)[9;10], it is higher than the national average reported by large population based surveys (12.3-15%).[9;11] This further supports that ED users are different from the general population in some important ways. Of these patients, 28.1% reported that they had never tried to find a PCP and 13% reported that they could not find one despite their efforts. These figures are higher than what was previously reported by the Canadian Community Health Survey which reported that 5% of Canadians did not have a PCP because they could not find one and 9% had not looked for one.[11]

Previous research suggests that the inability of certain individuals to find a regular doctor may have implications for the health care system. When these people do succeed in contacting a doctor, the odds that it will be in an ED are 3.5 times greater than for those who have a regular doctor.[11] In support of this evidence, a survey in Edmonton

concluded that many Albertans go to the ED because they do not have access to a family physician.[12] Research has also shown that an ongoing relationship with a family physician can decrease non-urgent ED by promoting awareness of its appropriate utilization.[13-15]

In this study, one of the most frequently cited reasons for coming to the ED was because it was a place where the patient could see a physician or get help for a problem. This suggests that many patients view the ED as their ***usual*** source of care. Another frequently cited reason was that the ED was quicker than another source or the quickest available source. It is clear that patients are unwilling to tolerate the long waiting period that is required to schedule an appointment with a PCP and suggests that family physicians need to leave more room in their schedules to accommodate semi-urgent cases. A significant proportion of patients felt they had no other options or were unable to access a family physician. Of the patients who felt the ED was not the best option for their problem, the majority came to the ED because of physician unavailability elsewhere. This pattern of response re-confirms the hypothesis that patients are facing barriers accessing primary healthcare services outside of the ED within a reasonable waiting time.

Many patients in this study sought alternative sources of care prior to their ED visit. Almost a third of patients tried to call a physician's office before the visit. These results suggest that many primary care physicians are unavailable to their patients when they are needed most. These results further support the implementation of several strategies that have been proposed to increase accessibility to primary care services on a more timely basis, such as family physician group practices that offer around-the-clock

services.[16] Approximately a third of patients visited a family physician's office prior to the ED visit, suggesting that even when these patients are unwell their physicians are either unable to adequately care for them or patients seek second opinions. The majority of patients were familiar with HealthLINK, the regional health information line, mirroring results from the a provincial survey[7]; however, only a small percentage patients (8.7%) contacted HealthLINK prior to the ED visit. Almost two-thirds of patients tried at least one alternative before seeking care in the ED. These results suggest that the often-cited misuse of the ED in today's society has more to do with poor access to primary care or a failure to receive adequate help at another source than it does with failure to seek other alternatives for care.

Almost half of the patients in this study came to the ED for a low acuity visit (CTAS 4 or 5). In 1992, the National Hospital Ambulatory Medical Care Survey[17] estimated that 55% of ED visits are for conditions that are not life threatening, do not require immediate medical attention, and might be more effectively handled in a primary care setting. The results of the current study seem to support previous evidence that low acuity patients may present to the ED because of physician inaccessibility[18;19], poor access to primary care[20-23], a lack of a regular source of primary care[18;24-26], or lack of availability of primary care sources[18;27-29], one particular factor being having no PCP.[14;30-33] This study did not, however, attempt to differentiate between urgent and non-urgent problems, and it is clear that patients with CTAS 4 and 5, while relatively stable, do require investigation and treatment that can require hospital admission.

The literature on nonurgent patients is ambiguous and confusing. While uncertainty and controversy still surround the definition of urgency and the real impact of

non-urgent ED users on the Canadian health care system[34], there is evidence that they are problematic because they negatively associated with costs, continuity of care, and crowding. Treatment of nonurgent problems in the ED has been reported to be much more costly than in other ambulatory care settings[35-41] and to contribute significantly to increasing health care costs[25;42], to involve poor follow-up care that is episodic and discontinuous rather than continuous[37;37;43-48] and has been cited as a contributor to overcrowding.[49]

Although the suggestion has been made to make nonurgent care a legitimate part of the ED service to help enhance care to primary care services[50], the majority of literature emphasizes strategies to decrease non-urgent ED use. These strategies include increasing access to PCPs[51;52], requiring the PCP to act as gatekeeper for ED use[13;53-55], and encouraging and educating patients to go to their PCPs.[30;56] Diversion is an area of ongoing research[34] and represents an area that needs further study. Clearly, further research is required to determine the clinical and economic impact of nonurgent and low acuity patients on EDs.

One of the strengths of this study was the inclusion of a measure of urgency which incorporated patient expectations and preferences. While only 53% of patients received a high acuity score (CTAS 2 or 3), almost nine out of ten patients in this study believed that the ED was the best option for their problem. The concept of acuity, which is based on the CTAS scale, is not tantamount to the concept of urgency, which is based on timing of care. Despite this difference, the two concepts are related, and the discrepancy between these two statistics is noteworthy. Although approximately half (47%) of patients were considered to have low acuity problems (CTAS 4 or 5) according

to CTAS standards, almost nine out of ten patients believed that the ED was their best care option, suggesting that they believed they had problems that warranted emergency attention. This study thus supports previous studies which report that the majority of ED patients perceive their problems as urgent.[57] These results support the methods suggested by previous studies to reduce nonurgent visits by educating patients on appropriate use of the ED[43;58;59] and self care for minor problems.[60;61]

2.5 Limitations

There were several limitations in the study that require discussion. Firstly, the convenience sampling excluded patients with CTAS 1 and patients who were deemed too unwell by an ED physician or nurse. The absence of CTAS 1 patients and the lower proportion of high acuity (CTAS 2 or 3) rather than low acuity patients (CTAS 4 or 5) who enrolled in the study when approached (Table 2.4) show that severe illness was therefore under-represented in this study. Secondly, the study was conducted at two urban EDs only. It is clear from the differences seen among the patient baseline characteristics that regional differences exist within Edmonton, and this limits the generalizability of the results across other areas. Similar research using different hospitals in different areas (rural vs urban) may provide additional granularity to these conclusions.

The administration of the survey was problematic. For example, some groups, especially the elderly, did not appear to understand the sexual orientation issue. Other

patients had been disabled since birth and had never engaged in any sexual activity or claimed not to understand the concept of sexuality.

The 2004 National Physician Survey[62] reported that there is a short supply of family physicians in Canada. For example, 60% of family physicians in the country are not accepting new patients or limit the number of new patients they see. In Alberta, 51% of family physicians are partially or completely closed to new patients, and only 28% are open without restrictions to all new patients. The Capital Health region in Edmonton has an even lower percentage of family physicians accepting new patients without any restrictions (21%) and a shortage of PCPs is widely acknowledged as a problem.[63] This limited access by patients looking for a new family physician is likely contributing to the barriers to accessing a PCP, and reflects national, provincial and regional concerns that access to PCPs is a significant issue that needs to be addressed.

Finally, care delays in overcrowded EDs are a significant problem in North America.[3] As can be seen from this study, lengthy delays prior to being seen and protracted lengths of stay were commonplace. Since one of the most significant factors influencing ED service satisfaction has been reported to be the amount of time spent waiting to see a doctor after the nurse's initial assessment[7], the responses from patients may have been biased by the environment in which patients were placed prior to the survey.

2.6 Conclusion

Notwithstanding these limitations, this study represents one of the largest Canadian surveys of ED patients with respect to their link with a PCP and prior actions designed to prevent an ED visit. The results confirm that many Canadians do not have access to a PCP and point to the need for further research to identify what barriers these Canadians face and how to improve access to primary health care.

Table 2.1: Characteristics of UAH and RAH and their patients on an annual basis.

Characteristic	UAH	RAH
# ED visits/yr (2004)	73,276	66,727
# inpatient beds	566	517
% admitted patients/yr (2004)	19.7%	16.9%
Average LOS (hrs)	4.4	4.7
Average LOS admitted pts (hrs)	12.6	17.3
% of time on ambulance diversion	23.2%	23.7%
Median household income *	$52,336	$32,032
Ethnicity		
White	82%	55%
Aboriginal	2%	11%
Oriental	10%	10%
Asian	1%	12%
East Indian	3%	1%
Black	1%	2%
< High School Education	11%	31%

* These results are based on a circle of 1-mile radius around each hospital using the 1996 Statistics Canada Census data.

Table 2.2: Words used to identify themes describing why the emergency department was the best care option.

Theme	Key Words
Severity of problem	Pain, emergency, severe, serious
Quality of care in ED	need, best, care, equipment, require x-ray, stitches, better, help, test, anyway, if
Physician availability in ED	cause, wrong, know, serious, check, OK
Referred by health professional	told, instructed, advice, send, sent, referred, referral, suggested, pre-arranged, informed, recommended, said, required, medicentre
ED is quickest treatment available	quick, soon, fast, immediate, right (context: right away)
No other option	need, else, other, no, family, doctor, only, choice, options, town
Physician unavailability elsewhere	close, closed, holiday, weekend, Sunday, Monday, Friday, office, access, available
Convenience	Close, convenient, location

Table 2.3: Words used to identify themes describing why the emergency department was not the best care option.

Theme	Key Words
Would prefer to see other physician (but physician is unavailable	Busy, closed, physician, doctor, prefer, surgeon, specialist, dermatologist, ophthalmologist, tried
Wait too long	wait, long, quicker, hours
Problem is not urgent	emergency, urgent, important, enough, threatening, only
Problem got better while waiting	Better
Dissatisfaction with environment	No frequent words; theme identified through manual scansion of answers.

Table 2.4: Comparison of general Edmonton population, those approached and those who completed the survey.

Demographic Factor	Edmonton Population (Statistics Canada Census 2001) (n = 927,020)	All approached patients (n = 1,416)	Study Population (n = 905)
Male (%)	*50.3%	49.6%	49%
Mean age	Not applicable	45.6	44.1
High acuity (CTAS 2 or 3)	Not applicable	56.8%	52.8%
Ethnicity Aboriginal Black	 4.4% 1.5%	Not available	 10.2% 2.2%
Less than a high school education	20.1%	Not available	36.1%
Employment Status Employed Unemployed	 71.8% ** 5.5% ***	Not available	 47.8% 32.3%
Average income	49,908****	Not available	61,595.25

* this statistic reflects the population aged 15 and over in Alberta (n=2,580,100)

** this statistic is the "participation rate" defined as the labour force in the week (Sunday to Saturday)

*** this statistic is the "unemployment rate" defined as the unemployed expressed as a percentage of the labour force in the week (Sunday to Saturday)

**** this statistic is the "average household income" from the 1996 census in Edmonton

Table 2.5: Patient demographics of the 905 patients enrolled in this study from two Edmonton emergency departments.

Variable	UAH	RAH	TOTALS
Approached	559 (100%)	866 (100%)	1416 (100%)
Completed	391 (69.9%)	514 (59.4%)	905 (63.9%)
Male gender	213 (54.5%)	231 (44.9%)	444 (49.1%)
Age (mean ± SD)	43.6 ± 19.6	44.4 ± 19.8	44.2 ± 19.7
18-24	85 (21.7%)	88 (17.1%)	173 (19.1%)
25-34	73 (18.5%)	112 (21.8%)	185 (20.4%)
35-44	59 (15.1%)	97 (62.2%)	156 (17.2%)
45-54	66 (16.9%)	68 (13.2%)	134 (14.8%)
55-64	43 (11.0%)	52 (10.1%)	95 (10.5%)
65+	65 (16.6%)	97 (18.9%)	162 (17.9%)
Required interpreter	1 (0.3%)	4 (0.8%)	5 (0.6%)
Injury presentation	71 (18.2%)	124 (24.1%)	195 (21.5%)
Marital Status (n=896)			
Married/Common-law	196 (50.4%)	235 (46.4%)	431 (48.1%)
Single (never married)	131 (33.7%)	165 (32.5%)	296 (33.0%)
Separated/divorced/widowed	62 (15.9%)	107 (21.1	169 (18.9%)
Living Arrangements (n=879)			
Live with someone	312 (80.2%)	368 (75.1%)	680 (77.4%)
Live alone	77 (19.8%)	122 (24.9%)	199 (22.6%)
Residence (n=895)			
House/Condo	273 (70.0%)	299 (59.2%)	572 (63.9%)
Apartment	86 (22.1%)	153 (30.3%)	239 (26.7%)
Other	23 (5.9%)	46 (9.1%)	69 (7.7%)
Nursing Home	7 (1.8%)	2 (0.4%)	9 (1.0%)
Extended Care Facility	1 (0.3%)	5 (1.0%)	6 (0.7%)
Ethnic Origin (n=896)			
White	296 (76.3%)	339 (66.7%)	635 (70.9%)
Aboriginal	23 (5.9%)	69 (13.6%)	92 (10.3%)
Asian	29 (7.5%)	26 (5.1%)	55 (6.1%)
Ukrainian	16 (4.1%)	33 (6.5%)	49 (5.5%)
Other	19 (4.9%)	26 (5.1%)	45 (5.0%)
Black	5 (1.3%)	15 (3.0%)	20 (2.2%)
Educational achievement (n=893)			
< High School	107 (27.4%)	220 (43.7%)	327 (36.6%)
High School	85 (21.8%)	105 (20.9%)	190 (21.3%)
College	77 (19.7%)	113 (22.5%)	190 (21.3%)
University	90 (23.1%)	44 (8.7%)	134 (15.0%)
Professional Degree	31 (7.9%)	21 (4.2%)	52 (5.8%)

Variable	UAH	RAH	TOTALS
Employment Status for past 12 months (n=898)			
Employed	187 (47.9%)	246 (48.4%)	433 (48.2%)
Unemployed	116 (29.7%)	176 (34.6%)	292 (32.5%)
Other	36 (9.2%)	55 (10.8%)	91 (10.1%)
Student	51 (13.1%)	31 (6.1%)	82 (9.1%)
Income			
Poorest – Q1	49 (15.8%)	88 (23.8%)	137 (20.1%)
Q2	59 (19.0%)	77 (20.8%)	136 (20.0%)
Q3	60 (19.4%)	76 (20.5%)	136 (20.0%)
Q4	65 (21.0%)	71 (19.2%)	136 (20.0%)
Wealthiest – Q5	77 (24.8%)	58 (15.7%)	135 (19.9%)
Mean Income	$65,422	$58,389	$61,525
Sexuality (841)			
Heterosexual	364 (97.3%)	452 (96.8%)	816 (97.0%)
Not heterosexual	10 (2.7%)	15 (3.2%)	25 (3.0%)
Current Smoker	125 (32.0%)	212 (41.2%)	337 (37.2%)

Table 2.6: Emergency department visit information.

Factor	UAH	RAH	TOTALS
CTAS (n=900)			
1	n/a	n/a	n/a
2	15 (3.8%)	22 (4.3%)	37 (4.1%)
3	187 (47.8%)	254 (49.9%)	441 (49.0%)
4	168 (43.0%)	203 (39.9%)	371 (41.2%)
5	21 (5.4%)	30 (5.9%)	51 (5.7%)
Arrival Mode			
Driven by someone	198 (50.6%)	219 (42.6%)	417 (46.1%)
Ambulance	49 (12.5%)	95 (18.5%)	144 (15.9%)
Drove Self	63 (16.1%)	65 (12.6%)	128 (14.1%)
Walked	30 (7.7%)	46 (8.9%)	76 (8.4%)
Taxi	21 (5.4%)	48 (9.3%)	69 (7.6%)
Public transport	25 (6.4%)	31 (6.0%)	56 (6.2%)
Other	5 (1.3%)	10 (1.9%)	15 (1.7%)
Time of triage (n=898)			
7:00-16:00	255 (65.2%)	361 (71.3%)	616 (68.6%)
16:01-24:00	136 (34.8%)	145 (28.7%)	281 (31.3%)
Weekday Visit	274 (70.1%)	348 (67.7%)	622 (68.7%)
Times (median + IQR)			
Triage-placement	1:37	2:07	2:04
N=834	(0:52, 3:09)	(1:14, 2:52)	(1:00, 3:00)
ED assessment	2:11	1:54	1:57
N=824	(0:53, 4:32)	(0:45, 4:03)	(0:49, 4:14)
Overall LOS	4:35	4:29	4:34
N=821	(2:40, 7:45)	(2:44, 6:43)	(2:42, 7:03)
Outcomes (n=900)			
Discharged	311 (79.5%)	396 (78.6%)	707 (78.6%)
Admitted	48 (12.3%)	68 (13.5%)	116 (12.9%)
LWBS/LWOT	27 (6.9%)	34 (6.7%)	60 (6.7%)
Other	5 (1.4%)	6 (1.2%)	11 (1.2%)
Previously visited ED for same problem	146 (37.3%)	212 (41.2%)	358 (39.6%)
Number of ED visits in past 5 years (n=351)			
0	9 (6.2%)	9 (4.4%)	18 (5.1%)
1-3	69 (47.3%)	130 (63.4%)	199 (56.7%)
4-10	52 (35.6%)	48 (23.4%)	100 (28.5%)
11-20	10 (6.8%)	11 (5.4%)	21 (6.0%)
21+	6 (4.1%)	7 (3.4%)	13 (3.7%)

Note: LWOT = left without treatment; LWBS = left without being seen

Table 2.7: Patient preparation prior to the emergency department visit.

Factor (n{%})	UAH	RAH	TOTALS
Has FP	320 (81.8%)	393 (76.5%)	713 (78.8%)
Visited a physician	146 (37.3%)	168 (32.7%)	314 (35.7%)
FP	63 (16.1%)	67 (13.0%)	130 (14.4%)
WIC	39 (10.0%)	55 (10.7%)	94 (10.4%)
Specialist	28 (7.2%)	31 (6.0%)	59 (6.5%)
Other	16 (4.1%)	15 (2.9%)	31 (3.4%)
Visited other health care professional	78 (16.1%)	64 (12.6%)	142 (15.4%)
Physiotherapist/chiropractor	16 (4.2%)	10 (2.0%)	26 (2.8%)
Nurse/midwife	7 (1.8%)	6 (1.2%)	13 (1.4%)
Dentist	7 (1.8%)	6 (1.2%)	13 (1.4%)
*CAM	16 (4.0%)	2 (0.4%)	18 (1.9%)
Other	32 (8.2%)	40 (7.8%)	72 (7.9%)
Called physician's office	123 (31.5%)	140 (27.2%)	263 (29.1%)
Called regional health information (HealthLINK) line	34 (8.7%)	45 (8.8%)	79 (8.7%)
Aware of HealthLINK line	215 (55.0%)	344 (67.0%)	559 (61.7%)
Attempted other source of treatment	127 (32.5%)	113 (22.0%)	240 (26.5%)
Attempted at least one alternative	255 (66.6%)	293 (57.3%)	548 (61.3%)
Believed that ED was best option	346 (88.5%)	468 (91.1%)	814 (89.9%)

* "CAM", "massage therapy" and "acupuncture" were collapsed into "CAM" = complementary and alternative medicine

Table 2.8: Reasons why 814 respondents felt the emergency department was their best care option.

Reason	n	Representative Quotation
Severity of Problem	230	"I am in deep pain, the worst pain I've ever been in." (F,34)
Quality of care in ED	185	"Everything is here, they have all the facilities." (M,74) "I prefer to see a Dr. through emergency. They are more thorough." (F,54) "...have not been impressed with medi-centre treatment."(F,49) "My family doctor didn't help me. He just tries to give me pills with no real explanation as to what the problem could be." (M,22)
Physician Availability in ED	137	"There is someone here who knows what they [*sic*] are doing." (M,21) "To get some help." (M,76)
Referred by health professional	100	"Referred from family doctor." (M,28) "This is what the HEALTHLink recommended." (F,23)
ED is quickest treatment available	80	"Quickest to get me through to the doctor." (F,30) "It takes two weeks to see a doctor at home in which time I will be dead if this is serious." (M,56) "Because I feel that I would get immediate care as soon as possible even if my condition isn't as serious or not." (M,35)
No other option	76	"There is no other place I can get the appropriate help." (M, 48) "Where else was I supposed to go?" (M,24) "I'm visiting from Germany and I had no other option. " (F,25)
Physician unavailability elsewhere (afterhours/ weekends/ holidays)	58	"It is a stat holiday and most clinics close early." (F, 25) "Nowhere else to go, it's a Sunday" (F,18) "After 5 p.m. there is [*sic*] no other options for students in this area." (M,33) "Because I couldn't get in to see my own doc" (F,49) "... this is my only option because I have no family doctor." (M,38)
Convenience	19	"Everything else is too far away." (F,19) "If x-rays or a cast are required everything is available in one place rather than having to go to different locations." (F,43) "I was across the street from this Emergency." (F,57)
Other	71	
Left blank	109	

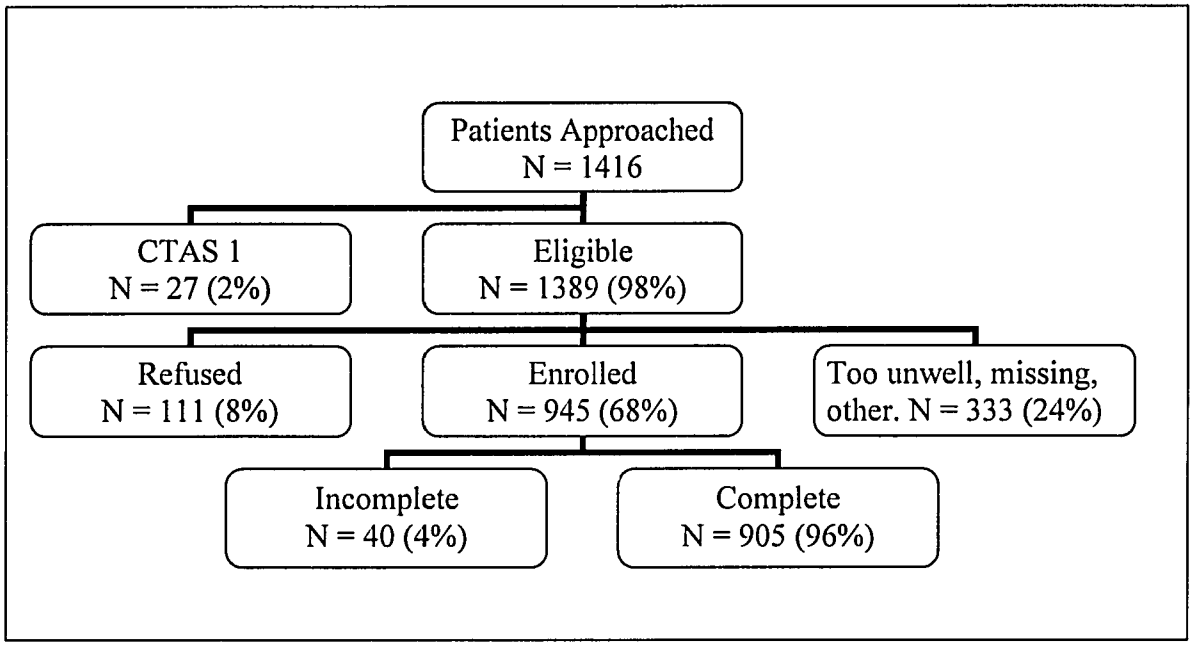
Table 2.9: Sources of care sought by patients who preferred to see other physician.

Action	ED is NOT best option - prefer to see other type of physician (n=34)	All other patients (n=871)	p
Called PCP before ED visit	15 (44.1%)	248 (28.5%)	0.049
Tried other treatment before ED visit	15 (44.1%)	225 (25.8%)	0.018

Table 2.10: Reasons why 91 respondents did not feel the emergency department was their best care option.

Reason	n	Representative Quotation
Would prefer to see other physician (but physician is unavailable)	34	"I wish I was at my family physician's but she was too busy" (F,25) "An optometrist would be optimal, but I couldn't find one under 28 hours." (F,26) "Tried to go to clinic but new to area and... they didn't accept me as a patient." (F,19)
Wait too long	27	"The wait is awful." (F,21) "It takes too damn long." (M,25)
Problem is not urgent	12	"My leg problem isn't necessarily an emergency. If there was a walk-in clinic nearby, I would have gone there instead." (M,22) "Not an urgent matter, but advised by health links." (M,21)
Problem got better while waiting	3	"If I was asked immediately when I walked in, I would have said yes. Now, however, my heart has stopped palpitating and I feel better." (M,44)
Dissatisfaction with environment	3	"Came in for a migraine. Too much noise, activity" (F,25) "Need bed to lay on" (F,43)

Figure 2.1: Recruitment Success



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Chapter 3:

Access to Care by Marginalized Populations

3.1 Introduction

A primary care physician (PCP) is generally considered the medical resource and counsellor to a group of individuals or families. The primary care physician provides continuing and comprehensive care for patients, as well as co-ordinating arrangements for any required hospitalization, service of other medical specialists, or other medical or paramedical assistance.[1] PCPs in Canada may be general practitioners or fully trained Family Physicians; in some urban settings, primary care is also provided by general internists (for adults) or paediatricians (for children). Irrespective of the definition, PCPs are considered the gatekeepers to the Canadian health care system; however, many Canadians nonetheless report that they do not have a relationship with one. Past literature suggests that 12.3-14%[2-4] of Canadians do not have regular sources of care. This affects EDs in Canada as literature suggests that individuals unable to find a regular doctor are 3.5 times more likely to contact a doctor in the ED than individuals with a regular doctor.[2] In general, however, limited research has been performed on the association between a patient's link to a PCP and the decision to come to the ED. It is not clear if the abortive actions taken before presentation to the ED differ between patients with a PCP and those without.

Previous studies have suggested that there are differences between patients with a PCP and those without. The likelihood of having a PCP is higher for females and there is a general association between increasing age and the likelihood of having a PCP.[5]

Greater use of preventive services has been associated with an increased continuity of care[6], increased provision of comprehensive care[7], and having a regular physician.[8-11] Women with a regular source of care are approximately one third more likely to have been screened for cancer than those without a regular source of care.[8] American patients with a regular physician are more likely to have high immunization coverage[10] and to have been screened for breast and cervical cancer.[8;11]

There has been little previous research examining ED patients with and without a PCP. The primary objective of this chapter was to compare the demographics and preventive health behaviours of patients presenting to two urban EDs who are with and without a PCP. Specifically, the main objectives of this study were to (1) determine whether patients with a PCP seek alternative sources of care before their ED visit at a frequency that differs from those without a PCP; (2) determine if patients without a PCP utilize fewer preventive services (e.g. immunization, screening); and (3) determine the factors associated with ***not*** having a PCP when presenting to the ED.

3.2 Methods

3.2.1 Study Design and Participants

Participants for this research were recruited from two urban EDs in Edmonton, Alberta, Canada. All ED patients 18 years or older were eligible. Patients who were initially too unwell at the time of selection (e.g., in too much pain, too violent, etc) were re-examined by an ED nurse or physician once their conditions were stabilized. Patients were excluded if they remained too unwell, or if they refused to participate. Some

patients who met these criteria were excluded if they had a cognitive impairment (either acute or chronic) that precluded reliable and valid responses. These impairments included dementia, cerebrovascular accidents, and head injuries. Patients were excluded if they were assigned CTAS of 1; these patients often required immediate resuscitation (e.g., experiencing severe shortness of breath, sepsis, cardiac arrest, depressed level of consciousness, etc) or required intubation. Patients who could not communicate in English were excluded unless they were accompanied by a family member who could translate for them, or unless they could speak Spanish, Korean, or Portuguese (languages for which translation was available). Patients who had entered into the study or had already been approached within the past 8 weeks were also excluded.

Baseline demographic data were collected for each participant, including gender, age, marital status, sexuality, ethnicity, educational attainment, smoking status, employment status, and living arrangement. A second database was developed that included all patients who were selected for participation (including those who refused, were too unwell, were assigned CTAS 1, or did not complete the survey). This minimal dataset included baseline demographic information collected to determine the generalizability of the sample to the population presenting to the ED. The data collected were sex, age, triage level, presenting complaint, time of triage, time seen by physician, disposition time, and disposition status. In addition, information was collected on whether the patient reported during registration having a family physician, whether or not the patient came to the ED for an injury, and whether or not the patient required an interpreter. Patient anonymity was preserved by assigning each patient an ID number upon completion of the survey and then the corresponding ID number in the minimal data

set. At the completion of the data collection period, the information from the questionnaire and the minimal dataset were merged by patient ID number.

Patients who did not complete the survey also received a patient ID number to preserve anonymity. Different methods were used to collect this baseline information at the UAH and RAH. At the UAH, all information was available from the computerized ED database records. At the RAH, sex, age, triage level, presenting complaint, time of triage, disposition time, and whether or not the patient had a family physician were collected whenever possible from the computerized ED database records. The time seen by physician, disposition status, injury status and interpreter requirements were obtained from the patient charts in the health records department.

3.2.2 Dependent Variable

The dependent variable was whether or not a patient reported having a PCP. Primary care has been defined by both the American Academy of Family Physicians (AAFP) and the American Board of Family Practice (ABFP) as first contact medical care. This type of care assumes ongoing, long-term responsibility for the patient in both health maintenance and therapy of illness. It is personalized in nature, with prior knowledge of the patient allowing for provision of appropriately tailored management for each individual. It is comprehensive in scope, and includes the overall co-ordination of care for conditions that may be minor or major, chronic or acute, be they biological, behavioural or social. The appropriate use of consultants and community resources is an important part of effective primary care.[12] Other features of effective primary care are

availability and direct accessibility to the population served, co-ordination of the services provided by specialists and others, preventive care[13], and cultural competency.[14]

3.2.3 Independent Variables

The independent variables were demographic variables selected on the basis of their social and clinical plausibility and previous association with reporting no PCP as determined by literature review. The linearity assumptions of age and income were tested to determine if these two variables as continuous predictors were related to the dependent variable in a linear fashion in the regression formula.[15] For each variable, quartiles were determined to create a new categorical variable. The beta coefficients for the categorical variable were plotted against the quartile midpoints. Since the plot was not close to being linear for age, the relationship for age was not linear. Since the plot for income was close to being linear for income, the relationship for income was linear. Age was thus treated as a grouped categorical variable, while income was treated as a continuous variable. All other independent variables were either dichotomous (gender, smoking status) or categorical (ethnicity, educational attainment, employment, sexuality, marital status, triage score).

Triage score was collected and based on the Canadian Triage and Acuity Scale (CTAS)[16], a validated triage tool[17;18] that helps define ED patients for treatment prioritization and for administrative purposes. CTAS is a five-level scale, with triage scores ranging from 1 to 5. Code 1 is a condition requiring immediate medical assessment or resuscitation. Code 2 is an emergent condition that poses a potential threat to life, limb, or function and requires medical intervention within 15 minutes. Code 3 is

an urgent condition that may potentially progress to a serious problem requiring emergency intervention within 30 minutes. Code 4 denotes a condition that is related to patient age, distress, and potential for deterioration or complications and can wait up to one hour to be seen. Code 5 is a non-urgent patient who can wait two hours before being seen by a physician. The condition may be acute but not urgent and may be part of a chronic problem but with or without evidence of deterioration.[19]

The income data were obtained by collecting the postal codes of each patient. All valid postal codes that were collected were then linked to income data based on census tract estimates of average household income from the 2001 Canadian census.[20] Postal codes inside a census tract all received the same census tract estimate of income. The average household incomes were then ranked and grouped into five population quintiles, with each quintile containing approximately 20% of the patients; Q1 was then assigned as the poorest quintile, and Q5 as the wealthiest.

3.2.4 Sample Size Calculation

Based on previous literature, the highest proportion of Canadians reporting no family physician in 2004 was 14%.[3] Using a value of 14%, the following formula for calculating sample size was used: $n = [t^2 * p(1-p)]/m^2$

where

n = required sample size

t = confidence level at 95% (standard value of 1.96)

p = estimated prevalence of patients without a family physician

m = margin of error

The margin of error was set at approximately 3%. Based on this formula, in order to obtain this level of precision surrounding the estimate of patients without a family doctor, a sample size of approximately 450 from each site was required. Since there were two ED sites, the total desired sample size for this study was approximately 900.

3.2.5 Statistical Analysis

The SPSS package (SPSS Inc., version 13.0 for Windows, Chicago, IL) was used for all statistical analyses and data management. A purposeful selection method using logistic binary regression was used to determine what independent variables were significant predictors of not having a PCP. Univariate analyses were performed to test the significance of the selected independent variables. Independent variables with a significance level $p < 0.20$ in the univariate analyses were entered into a multiple logistic regression model. The significance level for acceptance in the multivariate model was $p < 0.05$. Using the Wald statistic, a model was fit with the predictors of having no family physician.

3.2.6 Sub-pilot Test

Previous literature has demonstrated that patients may not have a clear conceptual understanding about the definition of a regular source of care. It has been shown that although patients reported a regular care provider, they actually received their care in a non-primary setting, the ED.[21] The importance of a rigorous case definition of a family physician was illustrated in our study. One question inquired: "*Do you have a family physician*?" During the initial data collection it was noticed that some patients responded

that their family doctor worked in a walk-in clinic. Although there are cases where a family doctor may also work as a doctor in a walk-in clinic, these cases are rare in Edmonton. This led to the suspicion that these patients were inaccurately designating physicians that they see at walk-in clinics as their family doctors.

Another reason for suspicion was that the responses given by some patients to two questions was sometimes identical. One question inquired: "*When did you last see your family physician?*" while another question inquired: "*When was your last visit to a walk-in clinic as a patient?*" When the responses to these two questions were identical, there were two possible scenarios. One is that these patients made two separate health facility visits on the same day – one to see the family doctor and one to a walk-in clinic. The other is that these patients made only one visit to a health care professional – to a walk-in clinic, where they saw a doctor whom they have labelled as the family physician.

After this observation, a sub-pilot test was introduced into this study. On nine days during the data collection phase, whenever a patient responded identically to these two questions, that patient was asked an additional question: "*Does your family physician work in a walk-in clinic?*"

3.3 Results

3.3.1 Responses

A total of 1416 patients were selected from the ED computerized records. Overall, 27 patients (2%) were ineligible because they were assigned as CTAS 1. Most exclusions were the result of patients being too unwell (12.8%). Other exclusions

resulted from not being able to find the patient (8.3%), the patient had previously been approached (2.3%), or presence of a language barrier (0.2%). Patients who refused (7.8%) or refused to complete the survey after starting it (2.8%) reduced the number of patients who completed the questionnaire to 905 (63.9%). Overall, 713 (78.8%) reported that they had a PCP, while 192 (21.2%) reported that they did not have a PCP.

3.3.2 Descriptive Analysis

Table 3.1 summarizes the demographic characteristics of the study patient sample. Patients who reported no PCP were disproportionately male (63.0% vs. 49.1%), Aboriginal (20.4% vs. 10.2%), young (concentrated in the 18-34 year-old age group, 62.5% vs. 39.0%), poor (concentrated in the lower 2 quintiles, 50.0% vs. 40.1%), current smokers (59.9% vs. 37.2%), not heterosexual (5.2% vs. 2.7%), single (51.6% vs. 32.7%), or had a low acuity problem (CTAS 4 or 5, 57.9% vs. 46.6%).

3.3.3 Factors Associated with Not Having a Primary Care Physician

For purposes of the logistic regression, the following independent variables were collapsed: age, ethnicity, educational attainment, and triage. Univariate analyses were run to find the statistical significance of an association with not having a PCP of the selected independent variables. Factors that were found to be associated with not having a PCP ($p<0.2$) included: gender, age, ethnicity, educational attainment, employment, income, sexuality, marital status, smoking status, triage score, and injury status. Living arrangement was not associated with not having a PCP ($p>0.2$).

A multivariate model was developed from the statistically significant variables, with the exception of income. Although income was significant in the univariate analysis, it was not placed into this model because data was available for only 680 patients. Patients with missing data for any of the variables in the model were removed from the analysis, leaving a total of 820 cases. Using the Wald statistic, gender, age, ethnicity, marital status, smoking status, and triage score were found to be statistically significant ($p<0.05$) predictors of having no PCP. Educational attainment, employment status, sexuality and injury status were not found to be statistically significant predictors of having no PCP.

A final multivariate model was developed from the statistically significant variables in the first multivariate model. Excluding patients with missing data for any of these variables, a total of 884 cases were included in the analysis. Gender, age, ethnicity, marital status, smoking status, and triage score had at least one categorical variable which was statistically significant ($p<0.05$). Further testing was carried out on this final model by adding income to see if this variable would become significant; however, it did not. In addition, each variable which was excluded from the first multivariate model was added to the final model one at a time to see if it would reach statistical significance; however, none of them did.

Table 3.2 provides a summary of the results of the logistic regression including the unadjusted and adjusted relationships and the confidence intervals between not having a family physician and the independent variables.

3.3.4 Abortive Actions Taken by Patients

Table 3.3 summarizes the actions that patients took prior to the ED visit in an effort to abort their ED visits. A higher proportion of patients with a PCP consistently attempted each abortive action the questionnaire inquired about than patients without a PCP. The only exception was visiting a health care professional other than a physician, which was attempted by a roughly equal proportion of patients with (10.5%) and without (10.6%) a PCP. Of the patients with a PCP who visited a physician before the ED visit, the most common was a family physician (49.6%), followed by walk-in clinic (19.6%), specialist (21.9%) and other clinic (8.8%). Of the patients without a PCP who visited a physician before the ED visit, the majority visited a walk-in clinic (68.5%) followed by specialist (14.8%) and other clinic (14.8%). There was one patient who did not have a PCP who visited a family physician prior to the ED visit. This may be a physician who worked in a walk-in clinic whom that patient perceived as a family physician, or it may be the family physician of another member of the patient's family.

3.3.5 Preventive Health Behaviours of Patients:

Table 3.4 summarizes the preventive health behaviours of patients. Patients with a PCP demonstrated better preventive health behaviours on all indicators examined by the questionnaire, with the exception of obtaining a tetanus shot and cervical cancer screening. Patients with a PCP were more likely to have had a flu shot in the past year than patients without a PCP (37% vs. 19.3%; $p < 0.001$); less likely to smoke (31.1% vs. 59.9%; $p < 0.001$); and more likely to always wear a seat belt while driving (71.4% vs.

62.5%; p=0.05). Male patients with a PCP were more likely to have had a prostate exam in the past two years than patients without a PCP (13.5% vs. 2.1%; $p < 0.001$).

3.3.6 Reasons For Not Having a Primary Care Physician

There were 192 patients who reported no family physician. Approximately one-quarter (n=55) of these patients reported that they had never tried to find one, and 29 patients reported that they could not find one. Table 3.5 summarizes the other reasons that were reported for having no family physician and shows the trends of responses according to demographic characteristics identified through the literature that influence these reasons given. Patients who never tried to find a family physician were more likely to be male (72.7%) and young (18-34 years old, 69%), while patients who tried but could not find one were more likely to be female (55.2%). Three out of four patients (75%) who felt they were not in need of a family physician were male. It was notable that a significant proportion of patients who reported "other" as the reason for having no PCP provided the reason as being that they were new to town.

3.3.7 Confusion Surrounding Definition of a Family Doctor Versus Walk-In Clinic Physician

There were 36 patients who gave identical answers to two questions, one which inquired about the date of the last visit to their family doctors and the other about the date of the last visit to walk-in clinics. These patients were asked an additional question: "*Does your family physician work in a walk-in clinic?*" Of these patients, almost 9 out of 10 patients (88%) responded affirmatively.

3.4 Discussion

This large two-hospital survey examined patients presenting to two urban EDs with CTAS 2-5 to determine if patients without a PCP differed from patients with a PCP with respect to alternative sources of care sought before the ED visit and to preventive health behaviours. This study demonstrated that patients with PCPs are different from those without PCPs, and that this difference may contribute to ED visit rates. A higher proportion of patients with a PCP attempted abortive actions before the ED visit than patients without a PCP. For example, prior to the ED visit, patients with a PCP were more likely to have called a physician, called HealthLINK, visited a physician, or to have tried at least one option. The greater proportion of patients with a PCP who believed that the ED was their best option than patients without a PCP suggests that they felt more justified in attending the ED. A plausible explanation for this discrepancy in the proportion of patients who felt the ED was their best option may be that patients without a PCP felt their problems were not urgent enough to warrant a visit to the ED, but came because of difficulties obtaining help from other sources or a lack of awareness of the help available from other sources. Furthermore, patients with a PCP demonstrated better preventive health habits. A link to a PCP was associated with more frequent preventive initiatives (e.g., flu vaccination), lower risk taking behaviours (e.g., less smoking, more seat belt use), and more frequent prostate screening by men.

These results support previous research that showed that patients with strong, ongoing relationships with a PCP experience benefits from this continuity of care, receiving more complete advice on preventing illness and maximizing health.[22] This

trend of better health practices associated with having a PCP was not, however, seen with women and their cervical screening practices. A smaller percentage of women in this study with a PCP utilized cervical cancer screening than patients without a PCP. This result is puzzling and contradicts not only the trends reflected by the majority of other preventive measures in this study, but also previous studies which have found that women with regular care by a family physician are more likely to receive a Pap smear than women without regular care.[11;23-25] There have been evaluative studies which suggest that family physicians are failing to adequately incorporate the recommendations of the Canadian Task Force on the Periodic Health Examination into their practices[26-29] and this may represent a possible explanation for this puzzling statistic. This specific issue of cervical cancer screening utilization by female patients with and without a PCP requires further research.

This study supports previous research on the factors associated with having no PCP. A previous survey in Alberta[30] found that Albertans who are more likely to have a personal family doctor are female and aged 55+ versus those aged 18-34. Another study identified those who were of a younger age, male, unmarried, and smokers as more likely to have no regular doctor.[31] These findings were mirrored by this study. Statistically significant predictors of having no PCP and presenting to an emergency department were: male gender, younger adult age, having an Aboriginal ethnic background, being single (never married), being a current smoker, and less severe acuity at triage. Each predictor will be separately discussed, followed by a discussion of income, which was not statistically significant in the logistic regression model but which deserves further exploration:

Male gender: Men make less use of medical services than women do[32;33] and this applies to maintaining a relationship with a PCP.[31] Men consider it less important to have their health monitored over time.[2] This reluctance to seek continuity of care is evident from this study, as 75% of ED patients who felt they did not need a PCP were male. Previous research has suggested that women are more likely to consult a PCP for preventive reasons, such as prenatal care and breast examinations, while men are more likely to attend a PCP for a specific problem.[31] Furthermore, men and women devote different amounts of time and effort caring for the health of their families.[34] Both the focus that women have on preventive care and their more frequent responsibility caring for children and elderly parents may explain the tendency of women to seek the continuity of care offered by a PCP.

Younger adult age (18-34): Young adults are less likely to have chronic conditions than older patients and thus may be less likely to feel the need to seek out a physician's care on a regular basis.[31] They are also more likely to be occupied with educational, occupational or familial commitments and thus may not consider having a regular source of care a priority.[2]

Aboriginal: Compared with other cities in Canada, the city of Edmonton has the second highest Aboriginal population. Many are young, live in single parent families, and have low incomes and high rates of unemployment.[35] Aboriginal populations have been reported to receive inadequate primary care.[36] The reasons why are not clear from this study, however, informal conversation with Aboriginal patients throughout the data collection process by a survey administrator suggests that there is notable mistrust of Caucasian health care professionals by some Aboriginal patients. Further research on

what types of barriers to obtaining primary care are faced by Aboriginal patients is warranted, as well as research on how to deliver more effective culturally-sensitive healthcare.

Single (never married): Previous literature has reported that people without PCPs are more likely to have no confidants and be unmarried.[31] People with confidants are four times more likely to seek care[37], which highlights the social aspect to seeking care. A possible explanation for this association of single marital status and having no PCP may be that single patients lack the nuclear social support offered by a partner which may in turn influence care-seeking patterns. This is an area that appears to require further research.

Current smoker: Current smokers have been shown to be less likely to have a regular source of care.[31] Given that a feature of primary care is an emphasis on preventive care and counselling[13], a possible explanation for this association between smoking habits and having a PCP may be that patients who actively maintain a relationship with a PCP are more likely to receive counselling to encourage smoking cessation. Previous research has shown that simple interventions by PCPs such as offering nicotine replacement therapy can promote abstinence from smoking.[38] More exploratory research into the association between smoking status and having a PCP is needed.

Low acuity (CTAS 4 or 5): The association of acuity of the presenting complaint with not having a family physician supports evidence from previous studies which have suggested that those with a PCP are more knowledgeable or motivated to use the ED for appropriate and more urgent problems.[39] An ongoing relationship with a PCP was thus

hypothesized to promote appropriate use of the ED, regardless of SES, health status, or co-morbidity.[39] The results of this study support this previous research and highlight the possibility of strengthening patient links with a PCP as a method to reduce the number of nonurgent ED visits.

Income: In this study, the association between PCP and income did not reach statistical significance in a multivariate model. This was surprising, as income is related to various measures of health status in North America, with a consistent pattern of higher income translating into better health status[40-47]. Furthermore, low income is associated with not having a PCP[31] and there is a positive correlation in American studies between income level and using a regular source of care.[48] In the publicly-financed Canadian system, financial barriers should not prevent people from accessing a PCP, thus the reasons for this finding are unclear. It may be a direct result of the cut-points used in this study and the fact that the range of incomes was not wide (few high income ED users). It has been further suggested that other structural barriers associated with low income may be responsible for lack of use of a regular source of care and for increased likelihood of using EDs, such as rigid work schedules and lack of child care or transportation.[31] Future research is warranted on the association between low income and not having a PCP.

Approximately one in five patients in this study reported no PCP. This figure is higher those reported in both national and provincial surveys of the general population and suggests that the study sample was different from the general population of Edmonton in several ways (Table 2.5). The Satisfaction with Health Services Survey (SHSS)[30] reported that 16% of Albertans do not have a personal family doctor and provided reasons why. According to the SHSS, half of these Albertans are actively trying

to find a doctor, yet have not been successful. The most common reasons reported for why it is difficult to find a family doctor are a shortage of doctors or that doctors are not accepting new patients (70%). The other half does not see the need for a family doctor when they can use community walk-in clinics or hospitals instead. Those more likely to feel they ***do not*** need a family doctor tend to be male (54%). Those more likely to report they have not been able to find family doctors who are accepting new patients tend to be female (41%).

In our current ED study, among the most common reasons for not having a PCP were that the patient never tried to find one or that the patient did not think a PCP was necessary. The most common reasons that patients provided varied by gender, age, ethnicity, and sexuality, and were consistent with some of the findings from the Canadian Community Health Survey (CCHS).[2] Firstly, the CCHS found that women are more likely to fail in their search for a regular source of care, whereas men are less likely to make the effort to search for one. This may reflect differences between the genders in the need for health services that are non-acute. Secondly, the CCHS found that individuals in 20 to 34 year old age group are more likely to not have a regular physician because they have not looked for one rather than because they were unable to find one. These findings were supported by this study, which showed that patients who have not tried to look for a PCP were concentrated in the 18-34 year old age group (52.7%). As mentioned previously, a proposed explanation for this trend is that people in this age group may be more likely to consider themselves healthy and thus without need or a regular source of care, especially given the educational, occupational or family commitments they may have.[2]

While sexual orientation did not reach statistical significance in this study, it is a variable that requires further research. The CCHS included a question on sexual orientation in 2003. Among Canadians aged 18 to 59, 1.7% reported that they consider themselves to be homosexual or bisexual.[2] A survey conducted in Alberta revealed that the proportion of Albertans reporting a non-heterosexual orientation (homosexual, bisexual) was similar to this national average (1.3%).[30] Aside from the CCHS, there currently exists no comparable Canadian data on sexual orientation. The CCHS results suggest that there are important differences between the heterosexual and non-heterosexual population. Among Canadians aged 18 to 59, nearly twice the proportion of non-heterosexuals reported that they had an unmet health care need in 2003 (21.8%) compared with heterosexuals (12.7%).[2]

In this current ED study, the proportion of patients reporting non-heterosexual orientation was higher than the national average (2.7%). A high proportion of patients who reported that they could not find a family physician were non-heterosexual (~15%). The results of this study suggest the need to understand differences in health-related issues between heterosexual and non-heterosexual populations. These issues include determinants of health, such as physical activity, mental health issues, including stress, and problems accessing health care.[2] The specific health care needs and barriers faced by non-heterosexuals is an area that requires further research.

Also of note is that of the small number of patients in the highest income bracket without a PCP (n=13), the majority (n=7) reported that they had never tried to find one. Of the patients who reported that they had tried and could not find one, the majority were in the lowest income group (31.6%). This discrepancy in the reasons provided by the

poor and affluent suggest that the poor may face more barriers in accessing primary care than the affluent. Clearly, further confirmatory research is needed.

3.5 Limitations

There were several limitations in the study that require discussion. Firstly, the convenience sampling excluded patients with CTAS 1 and patients who were deemed too unwell by an ED physician or nurse. Severe illness was therefore under-represented in this study; however, it is unlikely that having or not having a PCP played a role in their urgent admission or their prior attempts to avoid the ED visit. Secondly, the study was conducted at only two urban EDs. It is clear from the differences seen among the baseline characteristics of the patients that regional differences exist within Edmonton, and this limits the generalizability of the results across other areas. Similar research using different hospitals in different areas (rural vs. urban) may provide additional granularity to these conclusions.

The National Physician Survey 2004[49] reported that there is a tight supply of family physicians in Canada. For example, 60% of family physicians in the country are not accepting new patients or limit the number of new patients they see. In Alberta, 51% of family physicians are partially or completely closed to new patients, and only 28% are open without restrictions to all new patients.[49] The Capital Health region in Edmonton has a lower percentage of family physicians accepting new patients without any restrictions (21%) and a shortage of family physicians is widely acknowledged as a problem.[50] This limited access by patients looking for a new family physician in

Edmonton is likely a contributing factor for the significant proportion of patients in our study facing barriers to accessing a PCP, and reflects national, provincial and regional concerns that access to PCPs is a significant issue that needs to be addressed.

Another limitation was the uncertainty demonstrated by patients about the definition of a family physician. Within the small subpopulation of patients who were enrolled in the subpilot study, it was found that most patients (88%) reporting a family physician were really using a walk-in clinic. If it is assumed that this trend is applicable to the study population at large (n=905) this may mean that our estimate of the proportion of patients without a family physician (n=192) may be lower than it may be in reality. Compared to family physicians, walk-in clinics are commonly perceived to provide suboptimal care and to disrupt the continuity of care.[51-54] Further investigation into patient perception of the definition of a family doctor, particularly whether patients distinguish between walk-in clinic physicians and family physicians, would be beneficial.

Other limitations pertained to the data analyses. For example, despite efforts to avoid missing survey data, some missing data elements arose. In the logistic regression, patients that had missing data for any of the variables included in the model were excluded. This reduced the sample size for the logistic regression models. Missing data was particularly problematic for income data, since only 680 patients provided a valid postal code that could be linked to income. Another limitation was that the cross-tab analyses in Tables 3.3 and 3.5 had some cells with $n < 5$. SPSS could only calculate the Yates continuity correction for 2 X 2 tables, therefore there was no way to adjust these values.

3.6 Conclusion

Notwithstanding these limitations, this study represents the one of the largest surveys of emergency department patients with respect to differences between patients with and without a PCP, and the factors associated with not having a PCP. The results confirm that patients with a PCP are different from those without one with respect to their demographics and preventive health behaviours and point to the need for further research to identify measures that would help improve access by marginalized populations to primary care practitioners or services.

Table 3.1 Patient demographics.

Variable	Has PCP (n=713)	No PCP (n=192)	p
Male	323 (45.3%)	121 (63.0%)	<0.001
Age			<0.001
18-24	112 (15.7%)	61 (31.8%)	
25-34	123 (17.3%)	59 (30.7%)	
35-44	118 (16.5%)	39 (20.3%)	
45-54	111 (15.6%)	24 (12.5%)	
55-64	94 (13.2%)	3 (1.6%)	
65+	155 (21.7%)	6 (3.1%)	
Ethnicity (n=896)			<0.001
White	519 (73.4%)	116 (61.4%)	
Aboriginal	53 (7.5%)	39 (20.6%)	
Other	32 (4.5%)	13 (6.9%)	
Ukranian	41 (5.8%)	8 (4.2%)	
Black	13 (1.8%)	7 (3.7%)	
Asian	49 (6.9%)	6 (3.2%)	
Educational Attainment			0.106
< High school	32 (4.5%)	4 (2.1%)	
High school	76 (10.7%)	11 (5.7%)	
College	553 (77.6%)	165 (85.9%)	
University	42 (5.9%)	10 (5.2%)	
Professional degree	10 (1.4%)	2 (1.0%)	
Employment (n=898)			0.001
Employed	325 (45.8%)	108 (57.1%)	
Unemployed	254 (35.8%)	38 (20.1%)	
Student	61 (8.6%)	21 (11.1%)	
Other	69 (9.7%)	22 (11.6%)	
Income(*n=680), test for trend			0.05
Q1: 25,347-42,603	107 (18.8%)	30 (26.8%)	
2: 42,648-53,475	110 (19.4%)	26 (23.2%)	
3: 53,544-62,402	114 (20.1%)	22 (19.6%)	
4: 62,446-76,434	115 (20.2%)	21 (18.8%)	
5: 76,482-186,922	112 (21.5%)	13 (11.6%)	
Sexuality (n=841)			0.017
Heterosexual	650 (97.7%)	166 (94.3%)	
Not heterosexual	15 (2.3%)	10 (5.7%)	

Marital Status (n=896)			<0.001
Single (never married)	197 (27.8%)	99 (52.7%)	
Married/common-law	369 (52.1%)	62 (33.0%)	
Separated/divorced/widowed	142 (20.1%)	27 (14.4%)	
Living Arrangement, (n=879)			0.811
Live with someone	538 (77.2%)	142 (78.0%)	
Live alone	159 (22.8)	40 (22.0%)	
Current smoker	222 (31.1%)	115 (59.9%)	<0.001
Triage Score (n=900)			<0.001
2	33 (4.6%)	2 (2.1%)	
3	365 (51.4%)	76 (40.0%)	
4	283 (39.9%)	88 (46.3%)	
5	29 (4.1%)	22 (11.6%)	
Injury	140 (19.6%)	55 (28.6%)	0.015

*n = 680 represents the number of patients who provided a valid postal code that could be matched to an income

Table 3.2: Results of the logistic regression.

Characteristic (n=884)	Unadjusted OR	95% CI	Adjusted OR	95% CI
Male gender	2.058	1.482, 2.857	2.148	**1.484, 3.110**
Age				
18-34	Reference	...	Reference	...
45-54	0.539	0.378, 0.768	0.537	**0.357, 0.806**
55+	0.071	0.035, 0.143	0.083	**0.039, 0.177**
Ethnicity				
White	Reference	...	Reference	...
Aboriginal	3.308	2.088, 5.242	2.279	**1.344, 3.863**
Other	1.149	0.753, 1.753	1.321	0.826, 2.114
Educational Attainment				
High school and less	Reference	...		
Above high school	0.736	0.528, 1.024		
Employment (n=898)				
Employed	Reference	...		
Unemployed	0.450	0.300, 0.675		
Student	1.036	0.603, 1.781		
Other	0.959	0.566, 1.625		
Income(*n=680), test for trend				
Q1: 25,347-42,603	Reference	...		
2: 42,648-53,475	0.843	0.468, 1.519		
3: 53,544-62,402	0.688	0.374, 1.267		
4: 62,446-76,434	0.651	0.352, 1.207		
5: 76,482-186,922	0.380	0.189, 0.766		
Sexuality (n=841)				
Heterosexual	Reference	...		
Not heterosexual	2.610	1.152, 5.916		
Marital Status				
Married/ common-law	Reference	...	Reference	...
Single (never married)	2.991	2.084, 4.293	1.520	**1.011, 2.285**
Separated/ divorced/ widowed	1.132	0.692, 1.850	1.671	0.955, 2.923
Living Arrangement, (n=879)				
Live with someone	Reference	...		
Live alone	0.953	0.643, 1.412		
Current smoker	3.303	2.376, 4.591	2.053	**1.415, 2.980**
Triage				
(high acuity) 2 or 3	Reference	...	Reference	...
(low acuity) 4 or 5	1.754	1.269, 2.425	1.590	**1.108, 2.282**
Injury	1.662	1.155, 2.393		

Table 3.3: Abortive actions taken by patients.

Abortive Action	Has PCP (n=713)	No PCP (n=192)	p
Visited physician	260 (36.5%)	54 (28.1%)	0.031
Family doctor	129 (49.6%)	1 (1.9%)	<0.001
Walk-in clinic	57 (21.9)	37 (68.5%)	
Specialist	51 (19.6%)	8 (14.8%)	
Other clinic	23 (8.8%)	8 (14.8%)	
Visited other health care professional	74 (10.5%)	20 (10.6%)	0.973
Called physician	222 (31.1%)	41 (21.4%)	0.008
Called HealthLINK	64 (9.0%)	15 (7.8%)	0.612
Tried other treatment	200 (28.1%)	40 (20.8%)	0.044
Tried at least one option	449 (63.7%)	99 (52.4%)	0.05
ED is best option	654 (91.7%)	160 (83.3%)	0.001
Repeat ED visit for problem	292 (41.0%)	66 (34.4%)	0.098
# visits to ED for problem in past 5 years	(n=287)	(n=64)	0.683
0	15 (5.2%)	3 (4.7%)	
1-3	161 (56.1%)	38 (59.4%)	
4-10	83 (28.9%)	17 (26.6%)	
11+	28 (9.7%)	6 (9.4%)	

Table 3.4: Preventive health behaviours of patients with and without a primary care physician.

Preventive Strategies	Has PCP (n=713)	No PCP (n=192)	p
Influenza vaccine (< 1yr)	264 (37.0%)	37 (19.3%)	< 0.001
Tetanus shot (<10 yr)	308 (43.2%)	91 (47.4%)	0.58
Cervical cancer screening	271/388 (69.86%)	49/71 (69.0%)	0.889
Prostrate cancer screening	96/174 (55.2%)	4/24 (16.7%)	< 0.001
Current smoker	222 (31.1%)	115 (59.9%)	< 0.001
Always use seat belt	509 (71.4%)	120 (62.5%)	0.012

Table 3.5: Reasons for not having a family physician.

Characteristic	Other (n=66)	Never Tried To Find One (n=55)	Could Not Find One (n=29)	Do Not Think I Need One (n=24)	Prior Physician Retired/ Died (n=18)	p
Gender						0.082
Female	27 (40.9%)	15 (27.3%)	16 (55.2%)	6 (25.0%)	7 (38.9%)	
Male	39 (59.1%)	40 (72.7%)	13 (44.8%)	18 (75.0%)	11 (61.1%)	
Age						0.147
18-34	37 (56.1%)	41 (74.5%)	20 (69.0%)	15 (62.5%)	7 (38.9%)	
35-54	25 (37.9%)	14 (25.5%)	8 (27.6%)	7 (29.2%)	9 (50.0%)	
55+	4 (6.1%)	0	1 (3.4%)	2 (8.3%)	2 (11.1%)	
Ethnicity						0.673
White	40 (62.5%)	35 (63.6%)	17 (58.6%)	10 (41.7%)	13 (72.2%)	
Aboriginal	11 (17.2%)	10 (18.2%)	8 (27.6%)	7 (29.2%)	3 (16.7%)	
Other	13 (20.3%)	10 (18.2%)	4 (13.8%)	6 (26.1%)	2 (11.1%)	
Educational Attainment						0.083
<=High school	1 (1.5%)	7 (12.7%)	2 (6.9%)	4 (16.7%)	1 (5.6%)	
> High school	65 (98.5%)	48 (87.3%)	27 (93.1%)	20 (83.3%)	17 (94.4%)	
Sexuality						0.045
Heterosexual	61 (98.4%)	50 (98.0%)	22 (84.6%)	19 (90.5%)	14 (87.5%)	
Not heterosexual	1 (1.6%)	1 (2.0%)	4 (15.4%)	2 (9.5%)	2 (12.5%)	
Income						0.284
Q1	11 (28.2%)	8 (26.7%)	6 (31.6%)	2 (16.7%)	3 (25.0%)	
2	7 (17.9%)	6 (20.0%)	4 (21.1%)	7 (58.3%)	2 (16.7%)	
3	9 (23.1%)	4 (13.3%)	4 (21.1%)	1 (8.3%)	4 (33.3%)	
4	7 (17.9%)	5 (16.7%)	5 (26.3%)	2 (16.7%)	2 (16.7%)	
Q5	5 (12.8%)	7 (23.3%)	0	0	1 (8.3%)	
Current smoker	31 (47.0%)	38 (69.1%)	21 (72.4%)	14 (58.3%)	11 (61.1%)	0.076
Injury	23 (34.8%)	12 (15.7%)	5 (18.5%)	9 (37.5%)	6 (33.3%)	0.315

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Chapter 4

Voices of Patients and Future Directions

4.1 Overview

The preceding chapters reported the results of a cross-sectional survey of patients presenting to two urban EDs in Edmonton, Alberta. The demographics of patients with CTAS 2-5, their link with a primary care provider (PCP), and their access to healthcare prior to the ED visit were described. Further description was provided of the differences between patients with and without a PCP in terms of demographics and health behaviours, and the factors associated with having no PCP were identified.

Chapter One reviewed the past literature on ED utilization and access to primary care. The ED is clearly a frequently and commonly accessed source of care within Canada. While various population surveys showed substantial provincial variation on the percentage of the population without a PCP, the proportion has been fairly constant (between 12.3% to 14%[1-3]) on a national level for the past 10 years. This chapter also introduced the issue of marginalization in healthcare.

Chapter Two described the characteristics of 905 patients presenting to two EDs in the Capital Health area. The results confirmed previous research that ED users are more likely to belong to vulnerable groups in society.[4-7] Overall, the patients in this study were more likely to be less educated, unemployed, and to belong to particular ethnic groups than the general population in Edmonton. The results also support previous findings that ED users are more likely to be young (18-34).[8]

Nearly two-thirds of patients attempted at least one treatment alternative before their ED visit, and more than nine out of ten patients believed that the ED was their best care option. These results suggest that many patients are making an effort to forego an ED visit and eventually come to the ED because of a failure to receive appropriate help from other sources. A large proportion of patients (n=275) came to the ED for reasons relating to physician availability (physician availability in the ED; ED is quickest treatment available; physician unavailability elsewhere). This supports previous research highlighting the scarcity of family physicians taking on new patients, as well as research that suggests the need for PCPs to create appointment booking systems that are sufficiently flexible to allow patients to be seen in what they perceive to be a "convenient" time frame.[9] In this study, almost half (46.6%) of the patients surveyed came to the ED with CTAS 4 or 5. Although acuity is not tantamount to urgency, it may be argued that they are related. Although there is much discussion about the abuse and inappropriate use of EDs, the results of this study support Young et al.[10] who caution that visiting an ED with a nonurgent problem should not be labelled as inappropriate if another source of treatment cannot be successfully accessed. In addition, seemingly minor presenting complaints and ailments such as a fever may be the harbinger of meningitis, the common cold, and a myriad of problems in between. It is unfair to expect patients to know how serious a problem is, especially when they are feeling unwell. Finally, CTAS 4 and 5 patients do require testing, treatment and admission, albeit less frequently than CTAS 2 and 3 patients.[11]

In this study, roughly 1 in 5 patients presenting to two urban Albertan EDs have no link to a family physician, and this number may represent an underestimate. As this

study suggests, some patients may be going to a walk-in clinic on a regular basis and report this source of care as a PCP. Others may be seeing a specialist on a regular basis. Previous research has reported that ED patients with a PCP were more likely to be assessed by a health care professional as being urgent than those without a PCP[10] suggesting that patients with a PCP may be better educated on what medical problems are urgent enough to warrant an ED visit. In a recent study, the cost of treating minor illnesses was found to be substantially higher in EDs as opposed to family physician offices or walk-in clinics.[12] This suggests the need to encourage patients to become connected to a PCP and those with minor illnesses to consider alternative sources of care other than the ED.

Chapter Three described the differences between patients with and without a PCP. Previous US studies have shown that patients without a regular source of care are less likely to have medical insurance and less likely to have chronic illnesses, and are likely to be younger, in good health, of particular ethnic origins (African-American or Hispanic), on lower family incomes, and to have less than high school education.[13] They are more likely to use EDs and walk-in clinics.[14;15] Canadian studies have shown that those without regular physicians are younger, male, unmarried, poorer, recent immigrants, without confidants, smokers, and people who perceive themselves in better health.[16] This current ED study provided results that were congruent with this previous research in that patients without a PCP were more likely to be male, young, single, smokers, and Aboriginal.

This study supports that there are many benefits from having a PCP. Clearly and most importantly, patients with a well defined PCP demonstrate better access of the ED

and use of preventive health practices. This indicates the significant role that PCPs can play on the health of their patients and why EDs should link patients with primary care whenever possible. The relationship between health practices and patient ED utilization is worthy of more detailed investigation.

4.2 Personal Vignettes: The Voices of Patients

While this comprehensive survey did provide important information regarding the demographic characteristics of patients presenting to the ED, their pre-ED actions, and their linkage to a primary care provider, it may have failed to adequately capture and convey the subtleties of the issues facing the patients presenting in this setting. During the course of data collection, several patients eloquently articulated their sentiments about their experiences within a typical Canadian health care ED. Since these sentiments could not be captured quantitatively, they are presented here in a series of personal vignettes as illustrative examples.

Aboriginal Health Issues

G.W. (52, male, Aboriginal)

I'm an impatient person, maybe that's the way I was raised. When I came in, I made an irrational joke. I said I needed nitroglycerine, it was a life or death matter. Then the nurse said they're not used to giving this and that away. I wanted to get care quickly, but he said he's the boss and he's going to do it that

way. I made a joke and said if I paint white paint on my forehead, will I get better attention faster? He said if you have that kind of attitude, you can walk away. I don't know if it's racism. It's hard to be living in a country where you're a prisoner. My ancestors – it's an old story, but their land was taken away. There's a lot of racism. As a Native person, I'm misunderstooded [sic] and that's just my belief. Could be right, could be wrong. I've been kicked [out of here] a lot of other times before because of allegations that I came to steal this and steal that. The nurses here have a power and it goes to their heads. There's a lot of discrimination. If the nurses are White and there's discrimination against the Natives, maybe they'll serve the Whites first.

M.D. (40, female, Aboriginal)

The security guard is mean, he's White. You have to wait 8 hours here to see a doctor. They're going to see all the White people first.

There were clear and unambiguous sentiments of mistrust of Caucasian healthcare workers expressed by a number of Aboriginal patients. This is unfortunate, since the Aboriginal community seeks emergency care at a disproportional rate. Aboriginal Albertans are over-represented in ED visits and at one site in the study, they represented 10% of the sample. Clearly, their health needs are not being met in primary nor emergency care and this requires further examination and action.

Socioeconomic Status

F.L (25, male)

The last occurrence while I was here, I felt there was a prejudice based on my demeanor and attire – I had a work belt. I came immediately because of pain. People were admitted ahead of me with lacerations. I had a blood clot in my leg that traveled up to my lung. I could have died. It was 6.5 hours before I saw a doctor.

What is evident from this example is that other patients also felt discriminated against, not on the basis of his cultural heritage, but on the basis of his socioeconomic status (SES). There is documented evidence that first- and second-year medical students at a Canadian medical school have negative perceptions of low SES patients on several dimensions.[17] When comparing low SES and high SES patients, the medical students perceived low SES patients as less compliant in taking medications; less likely to return for follow-up visits; to have a lower level of social support, worse overall health and a worse prognosis; and to be more adversely affected in their occupational duties by illness. Furthermore, the medical students were less inclined to want low SES patients in their practices instead of high SES patients. Whether this attitude extends to emergency staff is unknown, however, some patients apparently perceive that it does.

D.S. (28, female)

I find the health care system very poor in a rich province like we have. The waiting times are atrocious. The nurses are overworked and stressed. The big run around you get. Dogs/cats/cows get better medical attention from their doctors! We need more doctors and nurses.

J.R. (74, female)

My last visit resulted in waiting in... Emerg for 36 hours. I was in here for chest problems and was eventually admitted.

R.B. (42, male)

Priority is given on a first come first serve basis for the most part. I would call an ambulance next time. I would not have someone drive me.

D.S. (28, female)

If I would have taken an ambulance I probably would have been seen faster.

A.D. (68, female)

It has now been more than 2 hours. I find it absurd because I was told to come in by ambulance. People with broken fingers are waiting half an hour to be seen while I wait.

A significant proportion of patients expressed frustration and dissatisfaction with the long waiting times they endured in the ED. A common theme that arose is that patients believed that they would receive quicker treatment if they arrived in an ambulance. One patient described how she waited overnight on a stretcher in the hallway without seeing a doctor. ED overcrowding is a national crisis that is eroding patient confidence in the health care system. Clearly, interventions to address overcrowding as well as better communication with patients who present to the ED to explain the delays they experience are warranted. The possibility of more patients arriving by ambulance in an attempt to speed their assessment is an inefficient and expensive alternative.

ED Service Appropriateness

D.H. (35, female)

Possible fracture – would like x-rays. Because it is Sunday, there are likely not too many other options. Hospital lets us take care of everything in one place, rather than driving to multiple places. Because it is my foot, having a hospital wheelchair [helps].

C.H. (76, male)

[ED] is the only place to get the required treatment. Doctor's offices do not have CT scans, the capability to do blood work and get answers to potential problems in a short period of time.

Despite the increasingly problematic overcrowding in EDs in Canada, many patients still express satisfaction with the services they receive in the ED. As Chapter 2 discussed, the ED represents the best option for care for certain conditions. Trauma, both minor and major, is one of the top three reasons why patients in both Ontario and the US report to the ED[18], suggesting that the ED represents for many the best option for injuries. Moreover, the comprehensive diagnostic testing available in EDs is seen as an advantage to this location for care. Despite this, many patients expressed a lack of understanding of ED services. Most notably, 111 patients (12%) stated that they were unaware of the triage process.

4.3 Future Directions

It remains a continuing challenge to devise methods to deliver socio-culturally appropriate health care to marginalized populations. The findings of this study testify that access to health care is inextricably linked with social, cultural, and economic identity and support increasing future research efforts into reducing access barriers to care related to ethnicity, culture, language, socioeconomic status, or sexual identity.

Previous literature has suggested that individuals who are socio-economically disadvantaged are more likely to use ED services for conditions that could be addressed by a PCP during regular office hours.[19;20] This suggests the need for further confirmatory research and targeted interventions to strengthen the link between marginalized populations and a PCP as one way to prevent non-urgent ED visits and perhaps partially address the problem of ED overcrowding.

The results of this study highlight the potential benefits of further research focused upon populations with problematic access to health care and what might help them to improve their access. Future research that explores the reasons why people don't have a family physician or other PCP in greater detail than was possible here and that elucidates what would help them to secure a PCP would be warranted. Since this study suggests that ethnic minorities may have greater barriers to health care access, it may be beneficial to foster ties with ethnic minority organizations and communities, which can in turn facilitate access to care. Community initiatives, such as the growing emphasis on building primary health care networks that focus on the needs of immigrant populations and established ethnic communities[21] appear to be warranted. As suggested by the Romanow Report[21], provincial and territorial health care systems, regional health authorities and health care institutions should actively involve different ethnic communities and new Canadians in identifying needs and designing programs to meet those needs. Multidisciplinary research should address issues specific not only to ethnicity, but also to gender and sexual orientation, and the impact of these differences on health. Health promotion and prevention programs should be specifically targeted to the unique needs of men and women, and people with different language and ethnic backgrounds.[21]

Despite pre-testing, many patients did not understand the question on sexual orientation and were unaware of the meanings of terminology such as heterosexual, homosexual, and bisexual. In future research, devising questionnaire phrasing when inquiring about this characteristic that would be more easily understood by patients would be valuable. One avenue to explore may be to develop questionnaire phrasing in

collaboration with non-heterosexual advocacy groups or to assemble focus groups of self-declared non-heterosexual patients; these groups may have a better understanding on what the appropriate and popular terminology would be to identify non-heterosexual groups.

It is particularly clear from this research that a disproportionate number of Aboriginals report having no PCP. The qualitative aspects of this study suggest that the trust in Western doctors by Aboriginal patients is seriously impaired and needs to be improved. Opening the lines of communication with Aboriginal patients about what types of ED services might help them to increase their trust in the Western health care system may be beneficial. Involving the participation of the Aboriginal community in an exploration of possible future initiatives that shows increased sensitivity to the unique cultural concepts of Aboriginal health may be beneficial. For example, symbolic gestures such as setting up a healing tepee within the hospital to create a cultural sensitive physical environment may represent alternative avenues to explore. The scarcity of Aboriginal doctors in Canada is also a concern. Currently, approximately only 150 Aboriginal physicians practice in Canada.[22]

It is not only Aboriginal physicians who are scarce, but PCPs in general. The results of this study testify to the scarcity of family physicians accepting new patients. In this study, 13% of patients without a family doctor reported that they could not find one. The scarcity of family doctors who are accepting new patients is of concern for the Canadian health care system in general and may be reflective of a noticeable trend in medical schools. Over the last 10 years the number of medical students choosing family medicine as a career has steadily declined. A recent study found that only 20% of new

medical students in Western Canada considered family medicine as their first career choice.[23] This low proportion suggests that this problem will persist if measures are not taken to counter it. There has been speculation that characteristics that predict family medicine as the career choice of some incoming medical students can be identified and that this prediction can be used to reshape medical school admission policies to better match the needs of society to the aspirations of students who are to become physicians.[23]

There are several other exploratory questions that arise from this research. One possible future direction suggested by this research is to further explore the public perception of the definition of a family physician versus a physician who works in a walk-in clinic. This study suggests that many patients are unclear about the difference between these two options of care. If patients are currently unaware of what a family physician is, this may suggest the need to educate the public about this subject and the benefits of seeing a PCP as a regular source of care over episodic care at an urgent care or walk-in clinic. On one hand, the benefits of walk-in clinics are commonly cited. Proponents of walk-in clinics have emphasized the convenience they offer to highly mobile consumers faced with multiple work and family demands, and argue that walk-in clinics decrease the burden on EDs by providing non-urgent care.[24;25] In addition, walk-in clinics are convenient because no appointment is needed and they are open outside conventional office hours when family physicians may not be available or when they are not available soon enough.[17;24]

In contrast to these positive aspects of walk-in clinics, however, the loss of continuity of care, a core tenet of family practice, has been a major concern.[26-28] Moreover, there is no evidence to support the argument that ancillary services, such as

walk-in clinics and province-wide information services, reduce the burden on EDs in Canada. A recent comprehensive Ontario study failed to support the theory that information lines reduce the use of ED services.[29] Since these interventions have failed to reduce care burden on EDs in Canada, expanded efforts to reduce ED utilization and provide alternative levels of care for patients presenting to the ED appear warranted.

Another avenue of future research is to explore patient satisfaction and public perception of quality of care in the ED. Approximately one-fifth of patients (20.2%) came to the ED for the high perceived quality of care. On the other hand, roughly 10% of patients believed that the ED was not the best care option and expressed dissatisfaction with the ED experience. Further research that investigates factors that influence patient satisfaction with the ED visit is warranted. While the Health Quality Council of Alberta surveys[8;30] have been a step in the right direction, they are small, methodologically weak, are not focused on emergency care specifically, and provide little insight or depth in the responses provided.

This study has raised the issue of two other subpopulations of ED patients that are worth studying. One is the patients who left without being seen or without treatment (LWBS), which represented approximately 7% of all patients in this study. Although the data collected from this study suggest that patients who LWBS are more likely to be Aboriginal than non-Aboriginal, future research focused on these patients is required to more concretely identify any characteristics associated with LWBS patients. To date, few studies have directly asked LWBS patients what might have kept them from leaving the ED. This is a research question that may elucidate interventions to lower these

numbers[31] and prevent the potentially harmful consequences that these patients face, which have been reported to include subsequent hospitalization and emergency surgery.[32]

Frequent ED users represent another potential subpopulation from this study that may provide a fruitful area for future study. Several studies have shown that patients who repeatedly seek ED care account for a large number of visits[33-37] in multiple EDs.[38] There were 33 patients in this study (2.3% of the total) who had made a repeat visit to the ED. Future research that examined frequent users of ED (defined as 12 or more yearly ED assessments[39]) may help to elucidate specific populations that utilize the ED as their regular source of care and help devise interventions to reduce this phenomenon.

4.4 Conclusion

Overall, this study examined a large number of patients presenting to two academic emergency departments in Edmonton. The results indicate that approximately 1 in 5 emergency department patients do not have a current relationship with a primary care provider such as a family physician. This lack of contact is reflected in their less appropriate use of health resources, their lack of preventive health care practices, which has a potential impact on their long-term health. The survey also identified impressive barriers that patients experience accessing primary health care and gave insight into patient perception of the ED and reasons for patient presentation to the ED. As a source of health for urgent and potentially life-threatening health problems, it is imperative that the ED operate efficiently. To address the problem of overcrowding in the ED, policy makers need to be mindful of these barriers and need to formulate interventions to

improve patient access to care, particularly by vulnerable groups. One important finding of this study is the shortage of family and culturally appropriate (e.g., Aboriginal) physicians. Medical educators need to urgently examine possible strategies to address these deficiencies. The problem of ED overcrowding will only be solved by addressing problems that exist within the healthcare system as a whole.

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Patient Consent

By Proceeding with the survey, I agree to the following:

- I understand that I have been asked to participate in a research study
- I understand the benefits and risks involved in taking part in this research study
- I have had the opportunity to ask questions and discuss my participation in this study
- I understand that I am free to refuse to participate in this study at any time
- The issue of "confidentiality" has been explained. I understand who will have access to the information provided by me.

By signing here, I agree with the above points, consent to participate in this survey, and express my desire to begin.

Signature: _____

Appendix 1

Additional Survey Information

There will be a formal analysis of all data collected and this will be submitted to a scientific journal for publication. Dissemination of this information to local Emergency Department policy makers and providers is the goal of this research.

Evaluation Information

Introduction

The EMeRG has designed a series of questionnaire-based surveys to be used mostly on patients to determine current opinion on a number of important issues. We believe our evaluation will provide policy makers and organizations with the necessary data to identify how:

- Emergency patients pre-treat themselves prior to visits that commonly present to EDs in Canada;
- What barriers exist to receiving care for acute problems;
- To understand delays in the health care system.

In order to accomplish these goals, the EMeRG Data Coordinating Centre (at the University of Alberta, Edmonton) will collect information pertaining to each proposed topic area.

We will use a variety of methods that are explained below. Generally, however, our work will consist of

- identifying an appropriate methodology,
- data collection,
- data analysis, and
- reporting.

As an emergency patient, we value your opinions and experience during this and other emergency visits. You are under no obligation to complete this or future surveys. However, if you elect to participate, we promise to make our best effort to accommodate your schedule and minimize the time you need to contribute as we move along.

You will be contributing information so EMeRG can learn how to serve you and other patients better. Your input will help guide the EMeRG research program as it expands over the next 24 months. Ultimately, we believe we can help answer important and pressing questions related to emergency medicine. In addition, we believe these efforts will make practice more efficient. Ultimately, we believe these efforts will assist us in our efforts to improve patient care.

Thank you, in advance, for your support and cooperation!

How the Evaluation Will Be Conducted

User Surveys

Surveys will be the primary means by which we will collect data about your experiences in the Emergency Department (e.g., prior treatments, contact with other heath care practitioners, etc). Most of these surveys will be administered electronically; however,

some will need to be paper based. Surveys will be administered randomly to patients, and not all patients will receive questionnaires each day. The data you provide will be fully protected and your personal identification information removed.

Selected Interviews
If we identify anomalies in our findings, or issues that require further investigation, selected individual or group interviews may be conducted.

Evaluation Reports
Formal reports will be presented at Annual emergency medicine meetings and submitted for publication in peer-reviewed journals.

Confidentiality
Personal information, such as names and email addresses will remain confidential and will not be reported.

Ethics
Each questionnaire-based project will be submitted to a single Ethics Review Board (ERB) for approval. The collection of demographic information will be minimal, and limited sensitive information will be requested from patients. Finally, no third parties (e.g., government, industry, etc) will be permitted to have access to patients or the primary data.

Conclusion
EMeRG is the first investigator network for emergency physicians in Edmonton. As the group grows over its lifetime, your feedback will be instrumental in the learning that will lead to developments and improvements in our research program. Your input is invaluable and appreciated!

Thank you for agreeing to participate. Please remember the responses will be kept confidential and for research purposes only.

First, we'd like to begin by asking a few questions that will help us get to know you better. Please check the appropriate boxes below.

1. What is your gender? ☐ Male ☐ Female

2. What is your age?
   - ☐ 18-24
   - ☐ 25-34
   - ☐ 35-44
   - ☐ 45-54
   - ☐ 55-64
   - ☐ 65+

3. What is your marital status?
   - ☐ Married/common-law
   - ☐ Single (never married)
   - ☐ Widowed
   - ☐ Separated/ Divorced
   - ☐ Prefer not to answer

4. What is your current living arrangement?
   - ☐ Live alone
   - ☐ Live with friends
   - ☐ Live with family
   - ☐ Live with a partner
   - ☐ Prefer not to answer

5. What is your current place of residence?
   - ☐ House/condo
   - ☐ Apartment
   - ☐ Extended care facility
   - ☐ Nursing home
   - ☐ Other (please explain: _____)
   - ☐ Prefer not to answer

Appendix 3

6. People in Canada come from many racial and/or cultural groups. You may belong to more than one group. Please pick the **single** group that **most closely identifies** your racial and/or cultural background.
   - ☐ White/Commonwealth/European
   - ☐ Aboriginal (**please also respond to Question 6a**)
   - ☐ East Asian (Chinese, Japanese, Korean, Taiwanese)
   - ☐ South Asian (i.e. Sri Lankan, East Indian, etc.)
   - ☐ Southeast Asian (i.e. Vietnamese, Cambodian, etc.)
   - ☐ West Asian (i.e. Iranian, Afghan, etc.)
   - ☐ Ukrainian
   - ☐ Black
   - ☐ Filipino
   - ☐ Latin American
   - ☐ Arab/Middle Eastern
   - ☐ Another group/mixed background (please specify: _____)
   - ☐ Prefer not to answer

   6(a). If you selected "**Aboriginal**", to which of the following groups to you belong?
   - ☐ First Nations Status
   - ☐ Metis/ Non-status
   - ☐ Inuit
   - ☐ Other
   - ☐ Prefer not to answer

7. What is your current postal code? (Write 'unsure' if you are unsure of your postal code): _____

8. What is the highest level of education that you have obtained?
   - ☐ Grade school, less than grade 7
   - ☐ Grade school, grade 7-9
   - ☐ Grade school, grade 10-12
   - ☐ High school
   - ☐ College
   - ☐ University
   - ☐ Professional Degree
   - ☐ Prefer not to answer

9. What have you been doing for most of the past 12 months? (please select the **single** best answer)
   - ☐ Caring for family
   - ☐ Working for pay or profit
   - ☐ Caring for family and working for pay or profit
   - ☐ Going to school
   - ☐ Recovering from illness/on disability
   - ☐ Looking for work
   - ☐ Retired
   - ☐ Other (please explain: _____)
   - ☐ Prefer not to answer

10. How long have you had the symptoms that brought you to the emergency department today?
    (please write a number):____(circle one of: minutes/ hours/ days/ weeks/ months)

11. Are you aware that patients are ranked according to how sick they are and are seen in that order? ☐ Yes ☐ No

12. From the time you entered the emergency department, what is the total amount of time you think you **should wait** to be seen today for this problem?
    I think I should wait (please write a number) _____ (circle one of: minutes / hours) or
    ☐ As long as it takes

13. From the time you entered the emergency department, what is the total amount of time you would be **willing to wait** to be seen today for this problem before leaving without being seen by a doctor?
    I would be willing to wait (please write a number) _____ (circle one of: minutes / hours) or
    ☐ As long as it takes

14. How did you arrive at the emergency department today?
    - ☐ Public transportation (Bus, LRT, etc.)
    - ☐ Walked
    - ☐ Taxi
    - ☐ Drove self
    - ☐ Driven by someone
    - ☐ Ambulance
    - ☐ Other (please explain: _____)

The next set of questions will ask about previous visits to your family physician or other doctors that you may have had.

15. Have you been receiving medical treatment for the condition that brought you to the emergency department today?
☐ Yes, this is a repeat problem (go question #15a below)
☐ No, this is a new problem (go to question #16)
☐ Unsure (go to question #16)

15(a). If this is a **repeat problem**, how long have you been receiving medical treatment for this condition?
(please write a number): _____(circle one of: days/ weeks / months / years)

16. Do you have a family physician? ☐ Yes ☐ No (go to Q #16a below)

16(a) If you **do not** have a family physician, can you tell us why not?
☐ Could not find one
☐ Do not think I need one
☐ Prior physician retired
☐ Never tried to find one
☐ Other (please explain): _____
_____

17. When did you last see your family physician?
(please write a number): _____ (circle one of: hours / days / weeks / months / years) ago
☐ Never

18. When did you last see a physician (including your family physician)
(please write a number): _____ (circle one of: hours / days / weeks / months / years) ago

19. How many times have you seen a physician in the last 2 years?
_____ (please enter a single number)

20. Did you visit a physician before coming to the emergency department for your problem? ☐ Yes (go to Q # 20a) ☐ No
20(a): If yes, what kind? (please select the **single** best answer)
☐ Family doctor
☐ Specialist
☐ Walk-in clinic doctor
☐ Other clinic doctor

21. Did you visit another health care professional for this problem before coming to the emergency department? ☐ Yes (go to Q #21a) ☐ No

21(a): If yes, what kind: (please select all that apply)
- ☐ Chiropractor
- ☐ Physiotherapist
- ☐ Nurse practitioner/ midwife
- ☐ Acupuncturist
- ☐ Massage therapist
- ☐ Complimentary/alternative medicine specialist
- ☐ Dentist
- ☐ Other

22. Did you call a physician's office or clinic for this problem before coming to the emergency department? ☐ Yes (go to Q #22a) ☐ No

22(a). If yes, what advice were you given for this problem?
- ☐ Reassurance only
- ☐ Told to see family physician
- ☐ Told to see other health care professional
- ☐ Told to come to emergency department
- ☐ No advice given
- ☐ Other (please explain): _____

23. Did you call Capital Health's HealthLINK line (407-LINK) for this problem before coming to the emergency department?
- ☐ Yes (go to Q #23a)
- ☐ No, but I am **aware** of the Health LINKS line;
- ☐ No, and I am **not aware** of the Health LINKS line

23(a). If yes, what advice were you given for this problem?
- ☐ Reassurance only
- ☐ Told to see family physician
- ☐ Told to see other health care professional
- ☐ Told to come to emergency department
- ☐ No advice given
- ☐ Other (please explain): _____

24. Did you attempt any other treatment or seek additional advice from another source? ☐ Yes (go to Q #24a) ☐ No

24(a). If yes, what other types of physician's office or clinic, or other options, did you attempt?

Option #1 (explain): _____
Option #2 (explain): _____
Option #3 (explain): _____

The following questions will inquire about other visits you may have had to the emergency department.

25. Now that you are at the emergency department, do you think this is the best option for you? ☐ Yes (go to Q #25a) ☐ No (go to Q #25a)

25(a). Why? Please explain your answer._____
_____
_____
_____
_____

26. Have you ever visited an emergency department before for this condition?
☐ Yes (go to Q #26a) ☐ No

26(a). If **yes**, how many times have you come to an emergency department in the past 5 years? _____ (please write a single number)

27. When was your last visit to the emergency department as a patient?
☐ My last visit was ___ (circle one of: hours / days / weeks / months / years) ago
☐ Never

28. When was your last visit to a walk-in clinic as a patient?

☐ My last visit was ___ (circle one of: hours / days / weeks / months / years) ago
☐ Never

Now we would like to ask you a few questions about some of your health practices.

29. Have you had a flu (influenza) shot in the past year?
☐ Yes ☐ No ☐ Unsure

30. Have you had a tetanus shot (to prevent "lock-jaw") in the past 10 years?
☐ Yes ☐ No ☐ Unsure

31. Do you smoke cigarettes?
☐ Daily (go to Q # 31b and #31c)
☐ Occasionally (go to Q # 31b and #31c)
☐ Not at all (go to Q # 31a)

31(a). If you selected "not at all", have you ever smoked cigarettes?
☐ Yes (go to Q#31b and #31c) ☐ No

31(b). If you currently smoke, or have smoked at some point in your life, how many cigarettes do you/did you smoke in a day?
☐ ≤ ½ pack
☐ 1 pack per day
☐ ≥ 2 packs per day

31(c). If you currently smoke, or have smoked at some point in your life, for how many years did you/have you smoked? _____

32. (**for all females**) Have you had a pap smear within the past two years?
☐ Yes (go to Q #32a)
☐ Yes, but I have since had my uterus removed (go to Q #32a)
☐ No
☐ No, and I have had my uterus removed

32(a) If yes, how long ago was your last pap smear?
(please write a number) _____ (circle: days/ weeks/ months/ years) ago

33. (**for males 45 years old and older**) Have you had a prostate exam? (i.e. digital rectal exam) within the past two years?
☐ Yes (go to Q #33a)
☐ Yes, but I have since had my prostrate removed (go to Q #33a)
☐ No
☐ No, and I have had my prostrate removed

33(a) If yes, how long ago was your last prostate exam?
(please write a number) _____ (circle: days/ weeks/ months/ years) ago

34. Do you wear seat belts when you drive?
☐ All the time
☐ Most of the time
☐ Some of the time
☐ Rarely
☐ Never

35. Do you consider yourself:
☐ Heterosexual
☐ Homosexual (Gay/lesbian)
☐ Bisexual
☐ prefer not to answer

Thank you for participating in this survey!
Please return the questionnaire to the research staff.