

Quality of Care in Primary Healthcare Clinics in Winnipeg:
A Comparative Study

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Abstract

Background:

The overall quality of care has been defined in terms of a set of seven core attributes taken from contemporary conceptual frameworks for assessing primary healthcare systems. Attributes are assessed using sub-attribute questions picked from previously developed and validated national level survey instruments. Data has been collected through structured questionnaire survey utilizing Likert items and scale to capture respondents' perceptions of care. Both descriptive and nonparametric statistical methods have been used for data analysis. Information on demographic factors helped to understand the response patterns across different cohort groups.

Key objectives:

- 1) To determine the perception of patients and physicians regarding the overall quality of care and its constituent elements delivered through the primary healthcare clinics in Winnipeg.
- 2) To compare the perceptions about different quality of care attributes as expressed by participating patients and physicians.

Results:

Both patients and physicians have positive views about the overall quality of care (median score ≥ 4 on a 1-6 scale). Regarding individual attributes, "Interpersonal communication" and "Respectfulness" received the highest average score (5) and long-term health management received the lowest score (2). Patient and physician responses were found to be statistically different for access, comprehensiveness and long-term health management. The long wait time for seeing a doctor appeared to be a widely shared concern – only 43% of the patients urgently needing to see a doctor could get a same-day appointment; for non-urgent cases, less than 3% got a same-day appointment. Patients with higher educational levels appeared to be more critical about the quality of care; conversely, patients in good health rated the quality of care attributes more favourably.

Conclusion:

Patients and physicians are generally satisfied with the overall quality of care. However, patients have identified issues related to access, comprehensiveness of care and long-term health management. Patients concerns were found to be consistent with national level results. Long wait time was also flagged as a key concern. Primary healthcare clinics should proactively seek patient feedback to identify issues and improve their quality of service.

Significance of the study:

This study provides a holistic understanding of how patients and physicians rate the quality of healthcare delivered through the primary healthcare clinics in Winnipeg. It has identified the gaps between the supply of, and demand for primary healthcare services based on inputs from patients and physicians, and the opportunities for improvements. Through cross comparisons, this study also contributes towards validating some of the earlier findings on how patients and physicians rate the quality of care of the primary healthcare clinics.

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Chapter 1: Introduction

1.1 Background and rationale

Primary care is defined as “the diagnosis, treatment and management of health problems with services delivered largely by physicians” [1]. Primary health care, a closely related term, includes primary care but also includes “the broader determinants of health such as sickness prevention and health promotion activities that are provided by physicians and others in a team-based environment” [1]. In Manitoba, these two terms are used interchangeably and are defined “as first level contact with the health system where services are mobilized to promote health, prevent illnesses, care for common illnesses and manage ongoing health problems. It includes all human services that play a part in addressing the interrelated factors that affect health.” [2]

Primary health care is the foundation of Canada's healthcare system [3]. For most Canadians, the primary healthcare clinics (PHCs) are the point of first contact with the healthcare system through a physician [4].

Yet, Canadians do not have a particularly positive impression about different aspects of the healthcare system. For example, about 15% Canadians reported difficulty in accessing routine care (for regular checkup or chronic disease), and 23% had difficulty accessing immediate care (urgent, non-life threatening illness or injury) [5]. Less than half of Canadians (48%) are satisfied with access to care in the community; only 43% are happy with the timeliness of access [6]. According to the 2010 Commonwealth Survey, “Canada ranked lowest for wait times to see a doctor or nurse when sick, with 45% of Canadian reporting having seen a doctor or nurse on the same or next day” [7]. This situation seems to have worsened over time. In 2004, 25% of Canadians waited six or more days to see a doctor when sick [8]; in 2010, this proportion increased to 33% of Canadians [7]. The situation is similar at the provincial level. In Manitoba, 17.8% of respondents reported difficulties in accessing routine or ongoing care in 2007 [9].

From the physician's point of view, all is not well either. In 2007, only 56% of physicians were satisfied with the balance between their professional and personal life (this number was lower among younger and female physicians) [10]. Physicians continue to work long hours - physician's average reported work week was 51.4 hours in 2010, with additional time spent on-call [11]. Despite this, 53% of the patients requiring urgent care needed to wait for more than a day to see their family physicians.

It has been recognized that people who have a regular health care provider such as a family doctor are healthier and happier with their health services [12]. Yet, a significant 42% of the family physicians in Canada were not accepting new patients in 2010 [11]. Also in 2010, 4.4 million people, or 15% of the population aged 12 and older, reported that they did not have a regular medical doctor [13]. Repeated National Physician Surveys have confirmed that changing demographics, increasing complexity of patient caseloads, increasing administrative responsibilities and increasing patient expectations are creating significant demands on physicians' time.

Many of these issues have been known for years and experts have repeatedly called for healthcare reforms to ensure better integration, enhanced coordination and more team-based multidisciplinary provision of care [1]. Over the years, federal and provincial governments have undertaken many initiatives, and adopted new strategies and policies to 'renew' the universal healthcare system. These, to mention a few, include *The Canada Health Act of 1984*, the First Ministers' Communique on Health of 2000, the formation of the Primary Health Care Transition Fund (in response to the First Ministers' Accord), and First Ministers' *A 10-Year Plan to Strengthen Health Care of 2004* [14].

Over the last four decades, the focus of healthcare reforms in Canada has gradually shifted away from the concerns for adequate provision of health services towards increasing the accountability, affordability, and effectiveness of the primary care system [15]. At the same time, the hospital and physician centric model of care is being gradually replaced by a more comprehensive

model that includes “prevention and treatment of common diseases and injuries; basic emergency services; referrals to and coordination with other levels of care, such as hospital and specialist care; primary mental health care; palliative and end-of-life care; health promotion; healthy child development; primary maternity care; and rehabilitation services” [16].

At the provincial level, Manitoba has undertaken a number of strategic initiatives as well. One notable action is the introduction of Primary Care Networks. Other actions involve expanding same-day and next day appointments, creating Mobile Clinics, opening QuickCare Clinics, developing new ways to remunerate primary care services (Physician Integrated Network, chronic disease tariffs), promotion of self-management, greater use of TeleCARE, promoting use of electronic medical records, and funding midwives and new models of birth services [17]. One of the notable goals of Manitoba’s reform initiatives is to ensure that all Manitobans will have access to a family doctor by 2015.

The initiatives mentioned above are well-meaning and responsive to the evolving nature of demands for healthcare in Canada. According to various national and provincial commissions on healthcare, strengthening and extending primary health care will meet Canadian's needs for promoting access to comprehensive evidence-based services [18][19][20][21][22]. Reasonable access is essential for care to be responsive and provide continuity. Evidence suggests that patient satisfaction is associated with accessibility, in-clinic care (which may be disaggregated into physician skills, diagnostics and coordination of care), continuity of care, and trust [23]. Timely access, consultation time, continuity of care and trusted doctor-patient relationship contribute to tangible improvement in patients' health and satisfaction with the system [24].

The knowledge of how patients feel about the quality of care offered through the healthcare system, especially through the primary healthcare clinics and family physicians can provide valuable insights and policy relevant information for improving the system performance. Evidence suggests that a strong primary healthcare system improves health and reduces inequities in health across

populations [25] [26] and may also contribute more to the health of the population than specialized health services [27] [28].

In order to have a balanced assessment, it is important to include the views of the health service providers, especially physicians, about the overall quality of care and its constituent elements. Physicians are an important powerful group within the system who can both help facilitate change and advocate for change where it is necessary. Furthermore, physicians are a very organized group aware of the systemic constraints, emerging approaches and technologies, and opportunities for improvements.

A number of well documented and tested performance assessment tools covering both patient and service provider (including physicians) perspectives are available to inform and guide such a comparative study. These sources include: Canadian Community Health Survey (CCHS) [7], Primary Care Assessment Survey (PCAS) [29], Primary Care Assessment Tool – Short Form (PCAT-S) [30] [31], Component of Primary Care Index (CPCI) [32], Interpersonal Process of Care (IPC-II) [33], General Practice Assessment Questionnaire (GPAQ) [34] [35], Veterans Affairs National Outpatient Customer Satisfaction Survey (VANOCSS) [36], Canadian Survey of Experiences with Primary Health Care (CSE-PHC) [37] and National Physician Survey (NPS) [38].

In addition, comparative studies of patients' and service providers' perceptions have provided useful and new insights. A comparative study on patients' and physicians' opinions on the quality of outpatient care [39] found that both patients and physicians identified "clinical skill" and "interpersonal skill" of the physician as the most crucial elements of quality health care. But they disagreed about the relative importance of "access to care," "coordination of care," and "provision of information." Patients identified these domains as more valuable than did physicians.

Another study [40] examined the gap in defining the quality of care in terms of the perceptions of patients, nurses and nurse managers. The authors measured the importance that

patients, nurses, and nurse managers place on different attributes of care and found these to be different. The study also noted that “misunderstanding patients' values and expectations may impede service improvement. Information about any existing gaps could help managers begin to devise patient satisfaction improvement strategies.”

A study done in the UK [41] examined patient and manager expectations on dimensions of quality with a view to understanding the relationship between these groups and whether any gap was evident or important. The study found that managers overestimated the patient expectations in dimensions of “reliability” and “responsiveness” but under estimated expectations in some other areas. Further, no gap was noted in the “empathy” and “assurance” dimensions. Based on secondary research, the study asserted that understanding patient expectations was essential to “delivering high quality service and having satisfied customers.”

To date, no such study could be identified that focused on Manitoba, and this study intends to address this knowledge gap. Results from this study would be of interest to a wide range of provincial and national stakeholders including health policy makers and practitioners. As well, a local study may complement the Manitoba perspectives on the quality of primary health care as reflected in the national level surveys.

1.2 Goal and objectives

The goal of this study is to answer the following overarching question: what is the perception of quality of care by the patients and physicians affiliated to the primary healthcare clinics in Winnipeg? A comparative and quantitative assessment of this question will generate useful insights for policy makers and health stakeholders and help them prioritize future health system interventions.

This study examines the perceptions of patients and physicians in terms of the overall quality of care and its constituent elements. It also compares the Winnipeg based study results with relevant results from national level surveys. As such, the study relies on both primary and secondary data.

The specific objectives of this study are to answer the following research questions:

- 3) How do patients and physicians feel (what are their perceptions) about the overall quality of care and its constituent elements delivered through the primary healthcare clinics in Winnipeg?
- 4) How do patients' perceptions compare with those of the physicians? Specifically, how do the levels of quality of care (as measured on a Likert Scale) compare for core attributes?
- 5) How do patients' perception of quality of care compare with the quality reported in related national surveys?
- 6) How do physician' perception of quality of care compare with the quality reported in the National Physician Survey (NPS)?

These objectives were pursued by following a systematic plan of study consisting of discrete steps and as sequences as outlined in Figure 1.1.

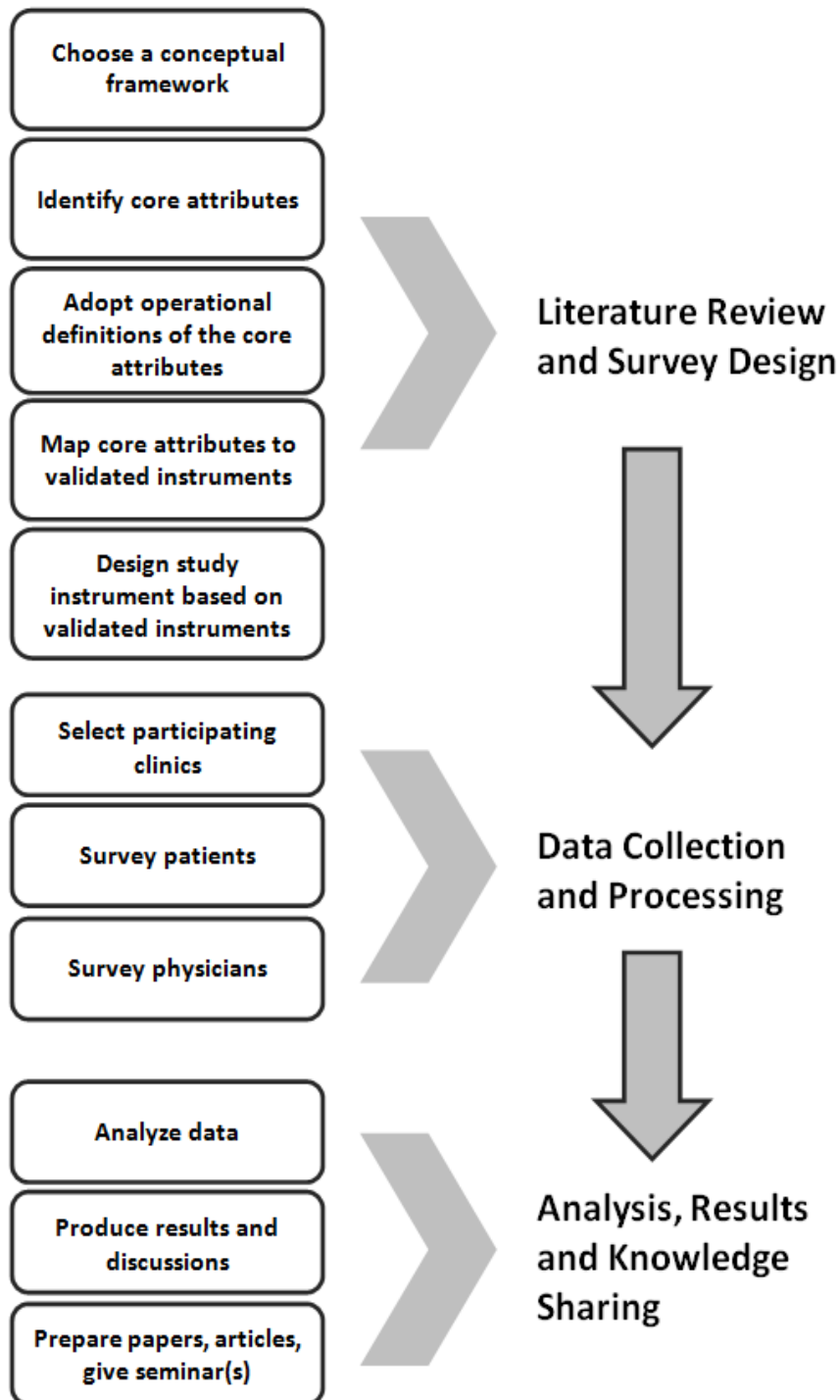


Figure 1.1 Plan of Study

Chapter 2: Literature Review

2.1 Conceptual framework for primary healthcare systems

A conceptual framework identifies and describes the basic building blocks of a healthcare system. It provides insights into how different components of a system interact with one another and influence system outputs. A conceptual model also typically includes a set of system attributes that can be used to assess system performance. In the context of this study, patients' and physicians' perceptions about the quality of care can be assessed using a subset of the system attributes.

Researchers have been building conceptual frameworks to explore the functionality of primary healthcare systems since the mid-1960s. The pioneering work was done by Donabedian [42], which was followed by a series of studies that identified the essential components of a primary healthcare system [43][44][45][46][47]. Most of these models incorporated components of structure, process, and outcome.

Some models used the conceptual framework developed by the Institute of Medicine (US) to plan healthcare reforms and create data collection tools [43][45][46][48][49][50]. Other researchers in the US, Australia and Europe shed lights on the distinction between micro and macro factors, the importance of organizational structures, the role of government, the significance of interdisciplinary team work, and the growing importance of information technology [50][51][52] [53][54]. Lamarche et al [55] pointed out that many of these models needed to be modified if they were to be used in Canada by incorporating attributes that have been introduced in various Canadian jurisdictions to different degrees as part of past reform initiatives.

Hogg et al [45] developed a conceptual framework for comparing models of primary healthcare service delivery in Canada building which body of work. The distinctive feature of their conceptual framework is the "structural domain that describes the context in which care is delivered, including the broad overarching healthcare system, the regional practice context, and the local

organization of the practice”[56]. The Comparison of Ontario Primary Care Models project used this framework to determine which organizational factors were associated with better outcomes [57].

This study adopted the conceptual model of Hogg et al [45] as adapted by Dahrouge et al [57] (see Figure 2.1). This is a state-of-the-art primary healthcare model in Canada, which is built around two primary domains structural and performance, five sub-domains and a range of attributes defining the sub-domains. A subset of these attributes will be selected (as explained below) for assessing and comparing patients' and physicians' perceptions about the PHC quality of care in Manitoba.

2.2 Identifying and defining core attributes

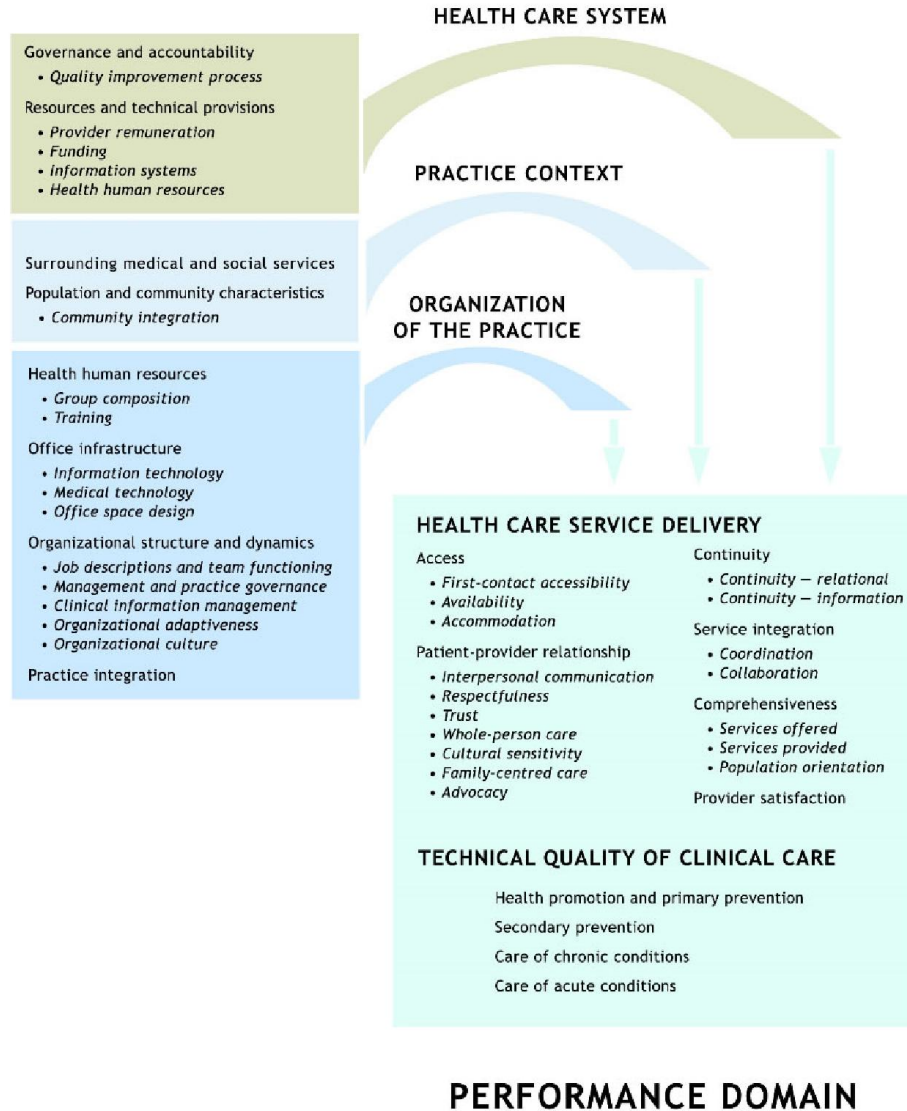
The conceptual framework of Hogg et al [45][57] is built around 18 attributes (10 for the performance domain and 8 for the structural domain) to measure the overall quality of healthcare of a primary care system. This list of 18 attributes served as the starting point for selecting a subset of attributes that would serve the objectives of this study most appropriately.

Since this study is focused on assessing the quality of care as perceived by patients and physicians, attributes related to the experience of receiving or giving care are likely to outnumber the attributes related to, say, accountability or organizational culture. In other words, more of the selected attributes are likely to be coming from the "Performance" domain and fewer from the "Structural" domain. The final set of core attributes were determined based on the following considerations:

- a. The attribute has been given a clear and operational definition in the relevant literature;
- b. The attribute has been identified as a "core" attribute by leading PHC experts;
- c. Survey instruments have been developed and validated to assess respondents' perception about that attribute in the form of subscale questions (Likert items leading to summated response on a Likert Scale).

Figure 2.1 Conceptual framework for primary healthcare organizations [44]

STRUCTURAL DOMAIN



a study originally conducted by Haggerty and her colleagues in 2004 [58][59] is particularly relevant. Employing an electronic Delphi process, they consulted with 20 Canadian primary healthcare experts "to define the attributes that should be evaluated in predominant and proposed models of

primary healthcare in the Canadian context." Further, "In addition to identifying attributes and proposing operational definitions for them, the experts were asked to rank each attribute's importance." [59]. The Delphi process identified and defined 24 attributes of primary care, of which seven have been defined as "core attributes that must be present in any model of primary care"[59]. These cores and other attributes and their definitions are provided in Table 2.1.

Note that all seven core attributes identified and defined through the Delphi process are included in the conceptual framework adopted for this study; six of them belong to the Performance domain and one (Clinical information management) belongs to the Structural domain. As such, they already meet two of the three criteria for inclusion mentioned above. The next step is to map them to perception-based validated survey instruments.

Table 2.1: Operational definitions of attributes of primary healthcare [59]

<p>CORE ATTRIBUTES</p> <p>First-contact accessibility: The ease with which a person can obtain needed care (including advice and support) from the practitioner of choice within a time frame appropriate to the urgency of the problem.</p> <p>Interpersonal communication: The ability of the provider to elicit and understand patient concerns, to explain healthcare issues and engage in shared decision-making, if desired.</p> <p>Continuity–relational: A therapeutic relationship between a patient and one or more providers that spans various healthcare events and results in accumulated knowledge of the patient and care consistent with the patient’s needs.</p> <p>Coordination [management] continuity: The delivery of services by different providers in a timely and complementary manner such that care is connected and coherent.</p> <p>Comprehensiveness of services: The provision, either directly or indirectly, of a full range of services to meet patients’ healthcare needs. This includes health promotion, prevention, diagnosis and treatment of common conditions, referral to other providers, management of chronic conditions, rehabilitation, palliative care and, in some models, social services.</p> <p>Technical quality of clinical care: The degree to which clinical procedures reflect current research evidence and/or meet commonly accepted standards for technical content or skill.</p> <p>Clinical information management: The adequacy of methods and systems to capture, update, retrieve and monitor patient data in a timely, pertinent and confidential manner.</p>
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PERSON-ORIENTED DIMENSIONS

Advocacy: The extent to which providers represent the best interests of individual patients and patient groups in matters of health (including broad determinants) and healthcare.

Cultural sensitivity: The extent to which a provider integrates cultural considerations into communication, assessment, diagnosis and treatment planning.

Family-centred Care: The extent to which the provider considers the family (in all its expressions), understands its influence on a person's health and engages it as a partner in ongoing healthcare.

Respectfulness: The extent to which health professionals and support staff meet users' expectations about interpersonal treatment, demonstrate respect for the dignity of patients and provide adequate privacy.

Whole-person Care: The extent to which a provider elicits and considers the physical, emotional and social aspects of a patient's health and considers the community context in the patient's care.

COMMUNITY-ORIENTED DIMENSIONS

Client/community participation: The involvement of clients and community members in decisions regarding the structure of the practice and services provided (e.g. advisory committees, community governance).

Equity: The extent to which access to healthcare and good quality services are provided on the basis Canadian Experts' Views on the Importance of Attributes – Detailed Report of health needs, without systematic differences on the basis of individual or social characteristics.

Inter-sectoral team: The extent to which the primary care provider collaborates with practitioners from non-health sectors in providing services that influence health. (Note: this is only relevant to community models of primary care.)

Population orientation: The extent to which primary care providers assess and respond to the health needs of the population they serve. [In professional models, the population is the patient population served; in community models, it is defined by geography or social characteristics.]

STRUCTURAL DIMENSIONS

Accessibility–accommodation: The way primary healthcare resources are organized to accommodate a wide range of patients' abilities to contact healthcare providers and reach healthcare services. [The organization of characteristics such as telephone services, flexible appointment systems, hours of operation and walk-in periods.]

Informational continuity: The extent to which information about past care is used to make current care appropriate to the patient.

Multidisciplinary team: Practitioners from various health disciplines collaborate in providing ongoing healthcare.

Quality improvement process: The institutionalization of policies and procedures that provide feedback about structures and practices and that leads to improvements in clinical quality of care and provide assurance of safety.

System integration: The extent to which the healthcare unit organization has established and

maintains linkages with other parts of the healthcare and social service system to facilitate transfer of care and coordinate concurrent care among different healthcare organizations.

SYSTEM PERFORMANCE

Accountability: The extent to which the responsibilities of professionals, management and governance structures are defined, their performance is monitored and appropriate information on results is made available to stakeholders.

Availability: The fit between the number and type of human and physical resources and the volume and types of care required by the catchment population served in a defined period of time.

Efficiency/productivity: Achieving the desired results with the most cost-effective use of resources.

2.3 Mapping core attributes to validated instruments

Haggerty [60] and Levesque et al [61] provided important insights on how well different instruments measure the attributes essential to primary healthcare by mapping operational definitions of attributes to validated instruments, by administering six instruments back-to-back in Nova Scotia and Quebec, and analyzing the results from the patients' perspective.

A set of six attributes deemed as essential for all patient-centered studies were employed in the above mentioned studies: accessibility, interpersonal communication, comprehensiveness, relational continuity, management continuity and respectfulness [60]. This list does not include two of the “core” attributes identified through the Delphi process – Technical quality of clinical care and Clinical information management. The reason is that for these attributes, the best source of data would be from the service provider (physician or facility manager) or chart audit [61].

On the other hand, respectfulness is an important attribute belonging to the personal domain (Table 2.1) that has been omitted in most previously used instruments; but, this was included in the study on effectiveness of various instruments (respectfulness is also a part of the patient-provider relationship attribute within the performance domain of the PHC conceptual framework).

Haggerty and her team selected “six instruments in the public domain that assess usual care as opposed to single visit, that are generic (not limited to a specific patient group or dimension of

care) and that had been most proposed or used in Canada”[60]. These instruments, which also cover at least five of the PHC attributes listed in Table 2.1, are [18-20][21][23][62]:

1. Primary Care Assessment Survey (PCAS)
2. Primary Care Assessment Tool – Short Form, adult (PCAT-S)
3. Component of Primary Care Index (CPCI)
4. Interpersonal Processes of Care (IPC-II)
5. VANOCSS
6. European general practice evaluation instrument (EUROPEP-I)

Further, Table 2.2 shows which attributes are covered by each of these validated instruments.

The core question Haggerty et al [60] pursued was "how well different instruments measure the attributes essential to primary healthcare?" They found that all study instruments met their standards for reliability and validity. In addition, they made specific observations on how the different subscales of these instruments performed in terms of measuring the essential attributes from the patient perspective that have been summarized in Table 2.3.

As well, none of the instruments includes or measures all six patient-centered PHC attributes. Whereas, PCAS, PCAT and CPCI cover most of the attributes, IPC covers only two [61]. This implies that in order to cover the seven core attributes identified through the Delphi process, more than one instrument will have to be used.

Parallel to the studies and surveys mentioned above, the Canadian Institute for Health Information (CIHI) co-funded a national level survey in 2008 called Canadian Survey of Experiences with Primary Health Care (CSE-PHC) that was conducted by Statistics Canada to provide policy makers and health system decision makers with a new source of high-quality PHC information [37]. Since the studies of Haggerty [47] and Levesque et al [48] do not cover CSE-PHC, this instrument has been

reviewed separately to identify additional subscales that may be suitable for the seven core attributes selected for this study.

Table 2.2 Coverage of attributes by validated instruments [61]

Attributes	CPCI	IPC	EUROP	PCAS	PCAT	VANOC
Accessibility			x	x	x	x
Comprehensiveness of services	x				x	
Informational continuity						x
Management continuity	x			x	x	x
Technical quality of clinical care		x	x	x	x	
Advocacy	x			x		
Relational continuity	x		x	x	x	
Cultural sensitivity		x			x	
Family-centred care	x				x	
Interpersonal communication	x	x	x	x		x
Respectfulness		x	x	x		x
Whole-person care	x		x		x	
Client/community participation						
Equity		x				
Intersectoral team						
Population orientation	x				x	

Table 2.3 Mapping of attributes to selected instruments

No.	Attribute	Instrument with best subscale level mapping	Remarks
1	Accessibility	Two sub-scales perform well in defining accessibility – PCAT-S First Contact Access and PCAS Organizational Accessibility (measures accommodation)	This study may consider both rapid access and longer term accommodation aspects in its questionnaire.
2	Interpersonal communication	PCAS Communication and EUROPEP-I Clinical behaviour subscales cover this attribute with the former showing better measurement properties.	IPC-II subscales also measure this dimension but the response option or scoring could be adjusted to permit better discriminability.
3	Comprehensiveness	<p>CPCI Comprehensive Care measures the patient’s confidence in the physician’s capacity to care for a range of health problems but may not reflect the actual range of services offered.</p> <p>PCAT-S Comprehensive Services Available elicits the range of services but measurement is limited by patient knowledge, needs or both.</p>	<p>Comprehensiveness as a whole-person care is generally missing and the definition lacks clarity.</p> <p>Range of services is better assessed by providers (physicians or managers).</p>
4	Relational continuity	CPCI Accumulated knowledge and PCAS Contextual Knowledge capture the essence of this attribute; the latter with better properties. These may also cover some aspect of whole person care.	Valued highly in family medicine as having therapeutic potential in itself, and is potential victim of reforms towards team based care.
5	Management continuity	PCAT-S Coordination and PCAS Integration are used but the metrics may be skewed towards a positive value. If patients are interested in reporting on their care experience across the entire system, VANOCSS Overall Coordination subscale is the best tool to capture this experience.	This refers to the experience of care coordination only part of which is usually visible to patients.

No.	Attribute	Instrument with best subscale level mapping	Remarks
6	Respectfulness	IPC-II subscales and PCAS Interpersonal Treatment address this dimension but there is room for improvements.	This is the new attribute proposed in recent studies that has been given less importance in the past.

The CSE-PHC incorporates many questions that are relevant for one or more of the core attributes such as accessibility, interpersonal communication, comprehensiveness and continuity of care. One question that stands out is about the difficulties or barriers faced by patients attempting to visit a PHC, which can be reframed as a general accessibility question for both patients and physicians. Another important question coming out of CSE-PHC is about the overall (system level) quality of care experienced by patients who have been visiting a particular facility for one or more years.

Therefore, the survey instrument designed for this study was based on the six validated instruments plus CSE-PHC. It includes all seven core attributes for which validated instruments exist. In addition, "respectfulness" was added as the eighth attribute as this has been recognized as an essential patient-centered attribute by Haggerty et al and others [47][48].

2.4 Incorporating the physicians' perspective

So far, most of the discussions on the core set of attributes and how to define and measure them have been based on patient focused studies and tools. Since one of the primary objectives of this study is to compare patients' perception about the quality of care with that of the physicians, this study has reviewed the National Physician Survey (NPS) [39] so that some of the questions can be extracted from NPS.

The NPS is a collaborative project of the College of Family Physicians of Canada (CFPC), Canadian Medical Association (CMA) and Royal College of Physicians and Surgeons of Canada (Royal

College). The NPS has produced the most extensive survey of the practicing and future physicians in Canada (about 90,000 individuals were invited to participate in 2010).

Results from the NPS surveys provide important insights into the priorities and interests of Canada's physicians including their views on the changing scope of practice, barriers to care, and the use of information technology. This study consulted data from the Family Physician / General Practitioner section of NPS 2010 to secure physicians' views on the PHC quality of care and to include relevant questions in the survey instrument for this study.

However, the NPS questions were developed specifically for the physicians and they covered a different set of domains. Further, the framing of the questions and associated scoring or ranking scales used in NPS are generally different from the selected patient-centred instruments. This required rephrasing of some questions to make them relevant for both patients and physicians. Some of the NPS questions were added to the study instruments that were only relevant for physicians. This is to get a distinct physician's perspective on, for example, things such as the technical quality of care and the use of information technology.

Table 2.4 lists the final set of attributes included in the survey instrument and their relationship with the conceptual model, the Delphi set of attributes, and the validated instruments. This table also lists an additional attribute - the overall quality of care - that has been adapted from the CSE-PHC. The process of selecting or designing the subscale questions and the associated scoring mechanism has been elaborated in the next section.

Table 2.4 Key features of the of selected attributes

Selected attribute	Included in conceptual framework	Primary domain /sub-domain in conceptual framework	Delphi domain	Used in validated instruments	Included in CSE-PHC	Covered in NPS
1. Accessibility	Yes	Performance /HCS	Core	PCAS, PCAT-S	Yes	Yes
2. Interpersonal communication	Yes	Performance /HCS	Core	PCAS Comm., EUROPEP-I	Yes	No
3. Comprehensiveness	Yes	Performance /HCS	Core	PCAT-S, CPCI Comp. Care	Yes	No
4. Relational continuity	Yes	Performance /HCS	Core	PCAS Context, PCAT-S, CPCI Accumulated Knowledge	Yes	No
5. Managerial continuity	Yes	Performance /HCS	Core	PCAS Integration, PCAT-S Coordination	Yes	Limited
6. Respectfulness	Yes	Performance /HCS	Person Oriented	PCAS Inter-personal, IPC-II	Limited	No
7. Technical quality of care	Yes	Performance/TACC	Core	N/A	Yes	Yes
8. Clinical information management	Yes	Structural /HCS, OTP	Core	N/A	No	Yes
9. Overall quality of care	N/A	N/A	N/A	N/A	Yes	No
<p><i>Notes</i> C.F.: Conceptual Framework HCS: Health Care Service Delivery TACC: Technical Quality of Clinical Care HCS: Health Care System OTP: Organization of The Practice N/A: Not applicable</p>						

Chapter 3: Methodology

3.1 Design of the survey instrument

Initial screening of the validated instruments against the core attributes indicated that for many attributes selected for this study, there were multiple instruments from which questions could be picked. The final set of questions was selected based on the following criteria:

(a) Questions for a particular attribute should adequately cover all dimensions of the definition of that attribute as provided in Table 2.1;

(b) The number of questions should be limited to no more than six per attribute (this is to keep the total number of questions below 50);

(c) To the extent possible, choose most of the questions from the same 1-2 instruments that are most suitable (so that the validity of the instrument is maintained);

(d) Given that the validated instruments were designed for patients or physicians (but not for both groups), questions for the other group should be drafted by minimally rephrasing the original questions;

(e) When none of the instruments have relevant questions, or the questions do not meet the above criteria, draft new ones meeting the applicable conditions mentioned above.

Responses to the selected questions will be captured using a Likert response format (and Likert Scale at the attribute level) that allow the respondents to indicate their preference or degree of agreement, which may typically range from "Poor" to "Excellent" or "Strongly disagree" to "Strongly agree," by way of an ordinal scale. Each level on the scale was assigned a numeric value starting at 1 and incremented by 1 for subsequent levels [63]. Use of a Likert response format is very common in perception based studies and health-study participants (patients) "overwhelmingly prefer Likert response scale with levels adapted to the context of the study" [64].

This study employed a set of questions ("Likert items") to assess a respondent's perception about each attribute. Further, the median of these ratings was taken as the attribute level rating for that respondent. This approach is preferred over using the sum of sub-scale level rating as a measure of the attribute level rating because that would require making additional assumption about the *additionality* of ordinal rating or the linearity of the Likert Scale.

This study adopts to offer an even number of choices. This is because all of the validated instruments from which the questions for this study have been adopted (or adapted) are based on either a 6-point or a 4-point ordinal scale. An even number of choices forces the respondents to take a side by focusing on the strengths and weaknesses of the system being investigated and it does not allow the respondents to settle for a non-committal middle ground. For the sake of maintaining analytical consistency, this study converted the 4-point response options (there are three such cases) to 6-point response options.

Following the guidelines outlined above, the survey instrument designed for this study included 36 perceptive questions for patients and 31 for physicians; it also included 10 specific questions for patients and 15 for physicians. The reason that patients and physicians had a different number of questions was because the perceptive questions came from instruments that were primarily designed to explore the patient perspective and most of the technical questions (pertaining to Technical Quality of Care and Clinical Information Management) came from NPS, which was designed for physicians. As a result, some questions were only relevant for patients and other for physicians.

Key features of this survey instrument are summarized in Table 3.1. The final set of subscale questions were taken from four instruments: PCAS (including various subsets), PCAT-S, CSE-PHC and NPS. Further, typically only one instrument contributed most or all of the subscale questions for a

particular attribute. This is a desirable feature which is likely to impart the validity of the parent instruments onto the instrument designed for this study.

Table 3.1 Key features of the survey instrument

Attribute	No. of perceptive questions (PT/PH) ^[1]	Ordinal subscale range	Source of verified subscale questions	Number of specific questions (PT/PH) ^[1]	Source of specific questions
1. Accessibility	6/6	1 – 6	PCAS (5) PCAS/CSE-PHC (1) ^[2]	2/2	NPS (1) CSE-PHC (1)
2. Interpersonal communication	6/5	1 – 6	PCAS Comm. (5) CSE-PHC (1) ^[2]	2/2	NPS/CSE (1) New (1)
3. Comprehensiveness	2/2	1 – 4 ³	CSE-PHC	1/1	PCAT-S/ CSE-PHC
4. Relational continuity	5/4	1 – 6 (5) 1 – 4 (1) ^[3]	PCAS Context (5) PCAT-S (1)	4/1	CSE-PHC
5. Managerial continuity	6/6	1 – 6	PCAS Integration (6)	none	none
6. Respectfulness	5/2	1 – 6	PCAS Interpersonal (6)	none	none
7. Technical quality of care	5/5	1 – 6	CSE-PHC (5)	1/2	NPS
8. Clinical information management	none	none	none	0/7	NPS
9. Overall quality of care	1/1	1 – 6	CSE-PHC ^[2]	none	none

Notes:
^[1] PT: for patients; PH: for physicians
^[2] Subscale question is adapted (not directly adopted) from one or more sources
^[3] Scale adjusted to make it a 1-6 Likert item

The study instrument also includes a few questions to determine the demographic characteristics of the respondents. This information was collected to ensure that the samples were representative of the respective populations, especially in terms of age and gender, and to examine their relative influence on the overall quality of care.

3.2. Data collection

3.2.1 Data sources and mode of data collection

This study required both primary and secondary data on patients' and physicians' perceptions about various attributes of the quality of healthcare offered through the PHCs in Manitoba. Since the study looked into attributes such as access, comprehensiveness, as well as relational and managerial continuity of care, only patients seeing their regular family physicians were included in the survey.

A list of practicing family physicians in Winnipeg was used to identify 24 PHCs that were approached for participating in this study. Then the six participating healthcare clinics were surveyed based on their willingness to participate in this study (only a fourth of the clinics approached agreed to participate). Figure 3.1 shows the location of the clinics approached (red) and the clinics participated (green). As can be seen from Figure 3.1, the participating clinics are situated across the city from north to south, east to west and the downtown area. The data collection started in June 2013 and completed in February 2014.

Once permissions to conduct the survey were obtained from the participating clinics, physicians and patients from the participating clinics were requested to participate in the study. The patients were approached by the researcher when they presented themselves at reception. Physicians were approached directly by the researcher. This process was repeated till the required number of participants was recruited. According to the 2010 NPS [65], the average national practice size for a family physician in Canada is around 1700. Additional clinics had to be visited to secure the required sample size for physicians than would be needed to secure the required sample size for patients.

The primary data was gathered through a structured questionnaire filled out by the patients who agreed to participate in this study while visiting a primary healthcare clinic. A short introduction about the study was given to the patients consenting to participate in the study while they waited to see their physicians. After the introduction, the survey form (questionnaire) was provided to the

patients along with some guidance on how to complete the form. Patients were allowed to complete the form before or after seeing the physician depending on the waiting time. Physicians were surveyed at their convenience at the PHCs where they provide services. All data were collected anonymously and only the clinics were identified via a code on each survey to check for any unforeseen issues that may bias the information gathered from a particular primary care clinic.

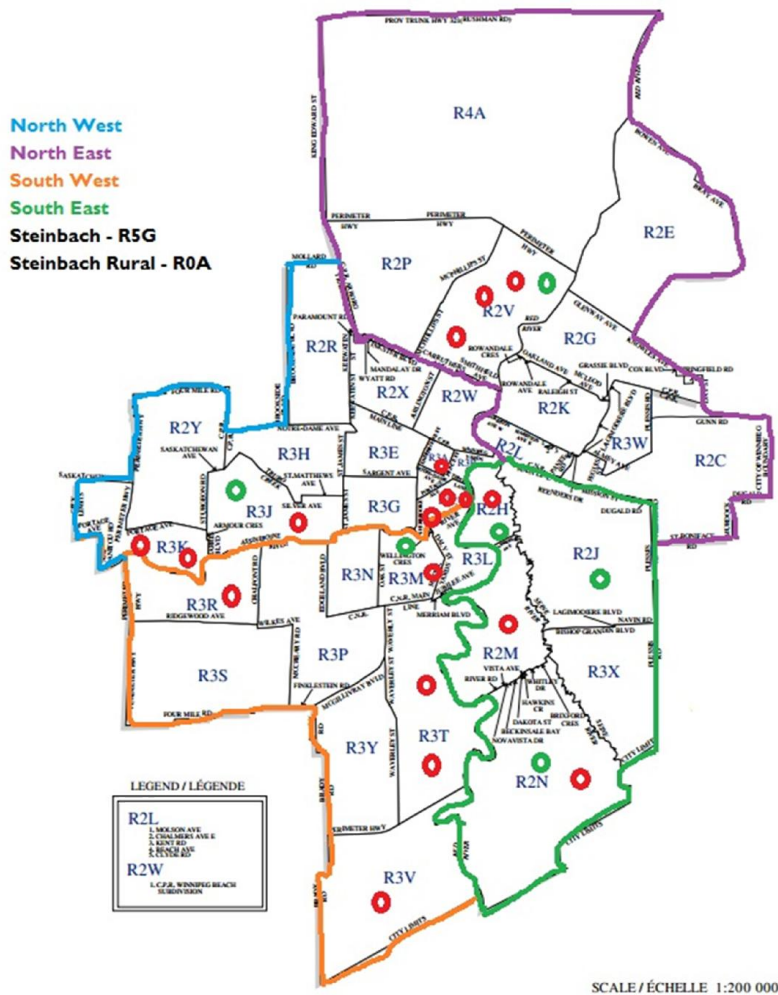


Figure 3.1 Geographic distribution of participating healthcare clinics (red= approached & green= participated)

3.2.2 Data management and quality assurance

A coding manual was used to code and enter data into the SPSS data sheet. 10% of the information was cross-checked by a third party to ensure accuracy of the recording process.

3.2.3 Sample size

Due to the ranked or ordinal nature of the data sets, this study used non-parametric descriptive statistics and tests. Specifically, comparison of central tendencies (using medians) of two unrelated samples of ordinal data requires using the Mann-Whitney U-test (the choice of tools and tests will be elaborated in the next section) [66][67].

Because nonparametric tests, such as the Mann-Whitney *U*-test, are distribution independent, there is no formula for calculating the required sample size directly. Lehmann [66] recommends computing the sample size required for an appropriate t-test (e.g., t-test for comparing means of two independent samples) and then adding 15% to arrive at the required sample size for the Mann-Whitney *U*-test. This approach is based on the lower bound for the Asymptotic Relative Efficiency (ARE) of the Mann-Whitney *U*-test versus the t-test, which is 0.864 for a broad class of probability distributions. Therefore, to achieve equal power as the t-test, the sample size for the Mann-Whitney *U*-test should be 1.157 (inverse of 0.864) times the sample size for the t-test [67].

The process still requires making assumptions about the underlying distribution of the data set in order to determine the sample size for the t-test for a desired level of significance (α) and power ($1-\beta$) to control the amount of Type I and Type II errors [68][69]. It is customary to begin the sample size calculation for comparing means of two independent groups by assuming that the groups exhibit normal distribution, homogeneous variance and equal sample size. The resulting equation for calculating n , the per-group sample size (for the conventional values of $\alpha=0.05$ and $\beta=0.2$ is given by [70][71]:

$$n = \frac{16}{\left(\frac{\Delta}{\sigma}\right)^2} = \frac{16}{(\delta)^2} \quad [1]$$

Where,

Δ = absolute difference between population means;
 σ = homogeneous standard error; and,
 δ = effect size defined as (Δ/σ) .

It is evident from Equation 1 that the required sample size is inversely related to the effect size. When the effect size is large, that is the difference between the populations means is relatively large compared to the average variance, a smaller sample size will be needed to carry out the *U*-text with sufficient significance and power. On the other hand, when the difference in population means is small, a larger sample will be needed to detect that difference. Table 3.2 shows the required sample sizes based on Equation 1 for a range of effect sizes for parametric and nonparametric tests.

Table 3.2 Relation between effect size and sample size

Type of test	Effect Size				
	0.3	0.4	0.5	0.6	0.7
Parametric	176	100	64	45	33
Nonparametric*	202	115	75	52	38
*Nonparametric sample size is estimated as 1.15 times the parametric sample size (rounded off) [67].					

A number of earlier studies indicated that patients' perceptions about the quality of care offered through different types of healthcare facilities may be significantly different from that of health service providers (e.g., physicians, nurse practitioners, managers) [39][**Error! Bookmark not defined.**][**Error! Bookmark not defined.**]. This suggests that initially a relatively large difference in population means could be assumed for the purpose of estimating the sample size, which may be equivalent to using an effect size which is "medium" ($\delta = 0.5$) or larger ($\delta = 0.6$).

The Mann-Whitney *U*-test is also available for comparison of means of groups of unequal size (which is the case in this study). Empirical evidence suggests that as the sample size gets bigger, the power of the Mann-Whitney *U*-test asymptotically converges towards the same for the equivalent t-

test and satisfactory levels of significance and power can be achieved by maintaining $n > 30$ [72] [73]. Note the Mann-Whitney U -test is carried out on the “pooled” or combined data from both the groups. Thus, $n=30$ means a total of 60 observations will be needed to carry out the test.

Based on the discussion above, it appears that a medium effect size ($\delta = 0.5$) should be used to estimate for the sample size. However, this study adopted a conservative approach for estimating the sample size by assuming $\delta = 0.4$, which suggest $n=115$ per group (if equal sample size was used for both groups) or a total of $N=2n=230$ observations for both groups. By rounding off, this study initially wanted to use a pooled sample size of **250**, to be comprised of **200 patients** and **50 physicians**. Given that most physicians were unwilling to participate in the study, this composition was later changed to 210 patients and 22 physicians.

3.2.4. Study design:

Design of the sample, all patients included in this study were adults (18 years of age and older) and had at least a one-year history of attending to a particular healthcare facility. A random stratified sampling was carried out to approximately match the gender and age distributions of the patients with the adult (18+) population of the province. Since different age groups and sexes have different propensity to visit physicians [74], the age-group based distributions for both sexes was further adjusted by the ambulatory visit rates for different age groups of male and female patients in Winnipeg. This approach made the samples of male and female patients more representative of the population of patients who actually visited different types of physicians in the recent past.

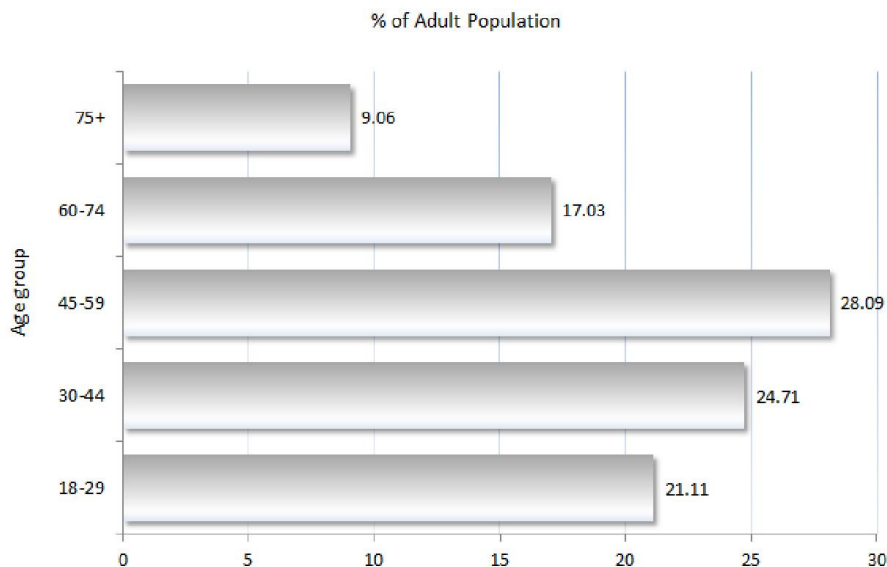


Figure 3.2 Age distribution of the adult population in Manitoba [75]

According to Statistics Canada's Census 2011 data [75], the population of Manitoba is approximately evenly split based on gender: 49.21 percent male and 50.79 percent female. The age distribution of the adults (18+) of this population is shown in Figure 3.2. This distribution was adjusted by weighting factors that have been estimated based on the expected number of visits to physicians by female and male patients of different age groups who reside in Winnipeg. This adjustment is needed to accommodate the fact that visitation rates per person for both sexes increase with age, and females typically make more visits to physicians compared to males for all age groups except for the last one [74]. Thus, the adjusted sample design includes more females compared to males and more elderly patients than suggested by the age distribution of the adult population in Manitoba. Based on the discussion above, the age and gender distributions of the patients to be surveyed have been provided in Table 3.3.

Table 3.3 Sample design by age and gender for patients

Age group	AVR/P* Female	AVR/P male	% of males in adult population	% of females in adult population	Female weighting factor	Male weighting factor	Number of females for N=200	Number of males for N=200	Total for age group
18-29	4.89	2.65	21	21	0.0847	0.0460	17	9	26
30-44	5.47	3.58	25	25	0.1128	0.0739	23	15	38
45-59	6.83	5.39	28	28	0.1578	0.1245	32	25	57
60-75	8.63	8.42	17	17	0.1211	0.1181	24	23	47
75+	10.61	11.10	9	9	0.0788	0.0824	16	16	32
SUM=	36.44	31.15	100	100	0.5551	0.4449	112	88	200

*AVR/P=Annual Visit Rate per Person to all physicians

Physicians, they were affiliated with the participating clinics for at least one year (this condition was relaxed if a physician previously worked at a similar facility in Manitoba). However, population age and gender distributions were not relevant for the physician respondents. For the purpose of this study, physicians were treated as homogeneous professional group as further discrimination of the views of the physicians based on demographic or other criteria is beyond the scope of this study.

3.3 Analysis of data

3.3.1 Descriptive statistics

Due to the ordinal nature of the data, this study used median, inter-quartile range, box plots and frequency distribution plots to look into the central tendencies and distributional aspects of the data. These statistics and plots were generated using SPSS and MS Excel.

3.3.2 Hypothesis testing for comparison of central tendencies

One of the specific objectives of this study is to test whether patients' and physicians' perceptions about the quality of healthcare provided through the PHCs in Manitoba are statistically similar or not. The traditional approach to test such a question using parametric data sets would be to use the following null hypothesis (H_0) and alternative hypothesis (H_a):

$$\begin{aligned} H_0: \mu_1 &= \mu_2 \\ H_a: \mu_1 &\neq \mu_2 \end{aligned}$$

where, μ_1 and μ_2 are the means of the two populations being compared.

However, for ranked data this approach is not applicable and is replaced by an equivalent two-tailed test called the Mann-Whitney U -test.

In the Mann-Whitney U -test, the two samples are combined and rank ordered together. The strategy is to determine if the values from the two samples are randomly mixed in the rank ordering or if they are clustered at opposite ends when combined. A random rank order would mean that the two samples are not different, while a cluster of one sample's values would indicate a difference between the samples. The Mann-Whitney U -test can be performed for two samples of equal or different size and even when one or both of the sample sizes are relatively small [68][76]. For this study, the U -statistic was determined using SPSS.

3.3.3 Analyzing the influence of demographic factors

The influence of the demographic factors on the overall quality of care was formally examined using an ordinal regression model (also called a proportional odds model). In this model, the OLQC was treated as the ordinal dependent variable and the demographic factors were included as nominal or categorical independent variables. Using this statistical approach requires meeting two pre-conditions [77]:

- (a) There is no multicollinearity among the independent variables; and,

(b) The proportional odds assumption is met. In theory, this means each independent variable has an identical effect at each cumulative split of the ordinal dependent variable.

Before attempting to estimate the model parameters, validity of these two assumptions would have to be tested.

The first assumption was tested by running a simple linear regression model using the same variables and choosing to generate only the “Collinearity statistics.” SPSS reports collinearity statistics in terms of “Tolerance” or “VIF” values (Variance Inflation Factor, which is the inverse of tolerance). A predictor (independent variable) with a tolerance < 0.1 or VIF > 10 is potentially strongly correlated with one or more other predictors. Independent variables with strong multicollinearity can be dropped based on their VIF values and other theoretical considerations and the test can be repeated.

The second assumption can be tested by generating the “Test of parallel lines” statistics in the Ordinal Regression option of SPSS. The null hypothesis for this test is that the location parameters (slope coefficients) are the same across response categories (in other words, they are not statistically different). A p -value $> .05$ would indicate that the null hypothesis is not rejected, and therefore, the assumption of proportional odds is met.

Once both the pre-conditions are met, the ordinal logistic model can be estimated using the “Generalized Linear Regression” tool of SPSS. This process generates a number of overall goodness-of-fit statistics including the Omnibus (likelihood ratio) statistic, Pearson and Deviance statistics for goodness-of-fit as well as parameter estimates and odds ratios.

3.4 Ethical considerations

Conducting an ethical research project involves taking into account moral imperatives during the course of a study to ensure that the subjects of the study are treated fairly. Any investigation must be done with full consent of the participants and compensation is made when appropriate.

For this study, participant consent was sought before providing the participants with the questionnaire. The survey was anonymous and it did not subject the participants to any physical, clinical or psychological tests. Confidentiality was maintained by not collecting any information that can be used to identify the participating individuals or clinics (other than indicating their general locations on a map).

The study involved completing a questionnaire voluntarily and therefore participants did not receive any compensation. However, they were thanked for their time and efforts.

Findings of this study were be attributed to the participating clinics, patients or doctors and information specific to the clinics were be shared or kept on permanent records.

In addition, the study was approved by the Health Research Ethics Board (HREB) of University of Manitoba.

Chapter 4: Analysis and Results

4.1 Introduction

This chapter presents the analysis of the data collected from both primary and secondary sources and associated results (interpretation of the results and comparative discussion are presented in the next chapter).

The chapter begins with a comparative look at the overall quality of care (OLQC) as perceived by the patients and physicians surveyed for this study. This is followed by detailed analysis of patient and physician responses including their responses to specific questions. This is followed by an analysis of the potential influence of the demographic factors on the perception of the overall quality of care (for patients only) based on ordinal logistic regression. The statistical comparison of the patient and physician responses is presented next. The final section compares select results from this study with results from previously conducted national level surveys.

4.2 Overall quality of care

The Overall Quality of Care (OLQC) has been measured in two different ways. Firstly, the respondents (patients and physicians) were directly asked to rate the OLQC base on their long term experience. In addition OLQC has also been estimated based on the respondents' median ratings for the seven core attributes that constitute the OLQC. These two different measures of the OLQC are shown in Table 4.1.

A number of observations can be made from Table 4.1. First, both the patients and physicians surveyed seem to have better than average perception (median rating 4 or 5 on a 1-6 scale) about the overall quality of primary healthcare system in Manitoba.

Second, based on the perception about the OLQC, the median rating turned out to be 5 for both patients and physicians; and based on the median ratings of the constituent attributes, the OLQC

was found to have a rate of 4 for patients and 5 for physicians. While these measures are not the same, they are both above average.

Table 4.1 Perception of OLQC between patients and physicians

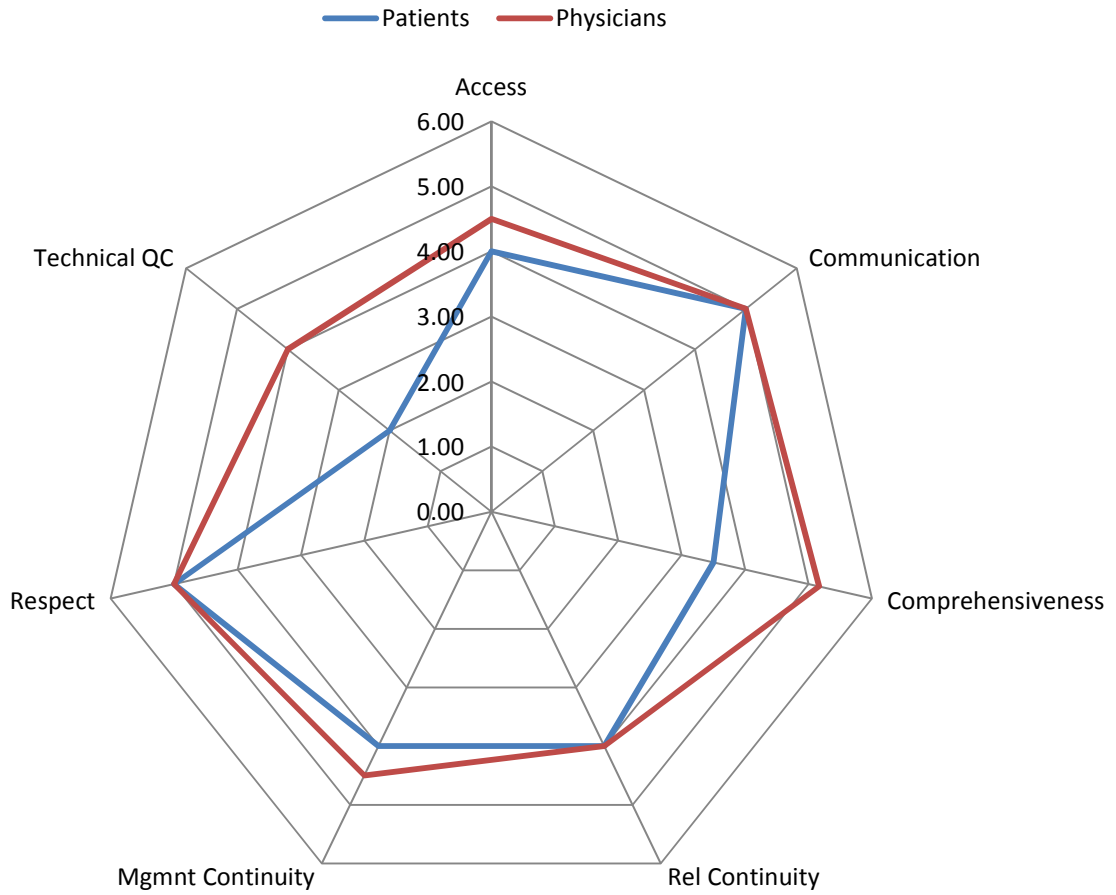
Attributes of OLQC	Median rating (patients)	Median rating (physicians)
Access	4 (2-6)	4.5 (3.5-5.5)
Communication	5 (2-6)	5 (4-6)
Comprehensiveness	3.5 (1.84-6)	5.2 (4.3-6)
Relational Continuity	4 (1-6)	4 (3-6)
Management Continuity	4 (1-6)	4.5 (3-6)
Respect	5 (2-6)	5 (2-6)
Technical Quality of Care	2 (1-6)	4 (3-6)
Median rating =	4	5
Overall Quality of Care (OLQC) (median from Q8) =	5	5
Legend: 1=Very poor; 2=Poor; 3=Fair; 4=Good; 5=Very good; 6=Excellent		

Second, for comparative and policy purposes, ratings for individual attributes provide more information and insights regarding which aspects of the OLQC the patients are not happy with, and therefore, may need more attention in the future. These rates provide additional insights when compared to the corresponding ratings provided by the physicians as shown in Figure 4.1.

It is evident from both Table 4.1 and Figure 4.1 that the patients rated two of the attributes relatively poorly – Comprehensiveness and Technical Quality of Care. The former refers to the provision of a range of services including timely referrals, and the latter to the long term health management including health promotion and primary prevention. Patients also appear to have less favourable views on two other aspects – Access and Management Continuity – compared to the physicians.

Finally, the median rates assigned by the physicians are in all cases equal to or better than the rates assigned by the patients. Thus, the physicians seem to have a better view about the OLQC and its

constituents, and therefore, about the quality of the primary care system in Manitoba compared to the patients.



Legend: 1=Very poor; 2=Poor; 3=Fair; 4=Good; 5=Very good; 6=Excellent.

Figure 4.1 Comparative plot of the quality of care attributes

4.3 Quality of care attributes: patients' perspective

This section examines the sub-scale level ratings assigned by the patients in order to gain insights on which sub-scale questions were of particular concern to them and how those concerns influenced the associated attributes and the rating for the overall quality of care.

4.3.1 Median ratings for core attributes

Given that the survey required the respondents to indicate their perception in terms of an ordinal scale (Likert Scale), the appropriate measure of central tendency is median rather than mean. The distribution about the median can be shown by including the inter-quartile range (IQR) and the extreme values. The Box-whisker plot below (Figure 4.2) shows these measures visually for the core quality of care attributes.

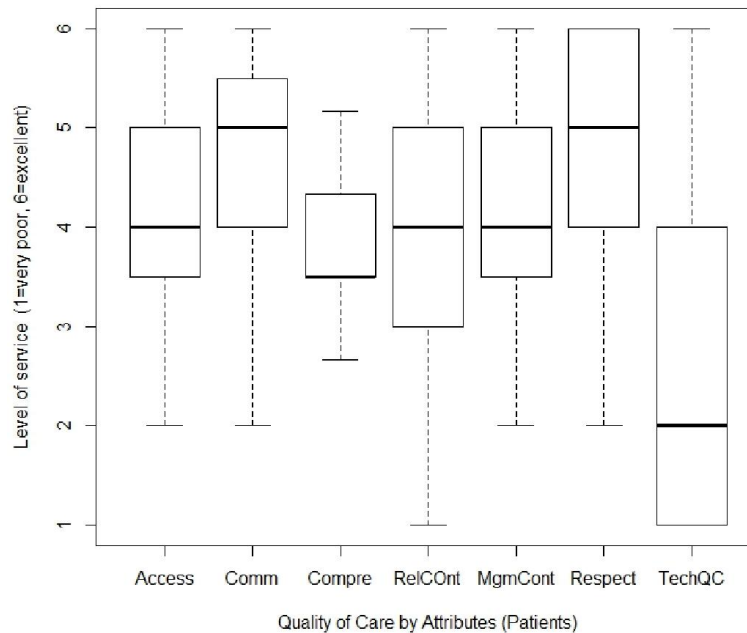


Figure 4.2 Box-whisker plots of ratings core attributes (patient)

Figure 4.2 visually demonstrates the key observation made earlier that the overall quality of care as perceived by the patients is very good. In particular, the patients have generally positive (good) perception about access and continuity of care (both relational and management). Their perceptions about Communication and Respect are very good with a median rating of 5 for both. Also, their perception about Respect is in sharp contrast with the same for Technical quality of care. The entire IQR for Respect is above 4 (with many 6's) indicating that the patients are very satisfied with how they are treated by their physicians. On the other hand, data points for Technical Quality of Care are mostly

below 3 indicating that patients believe that more could be done to improve the technical quality of care.

4.3.2 Distribution of ratings for core attributes

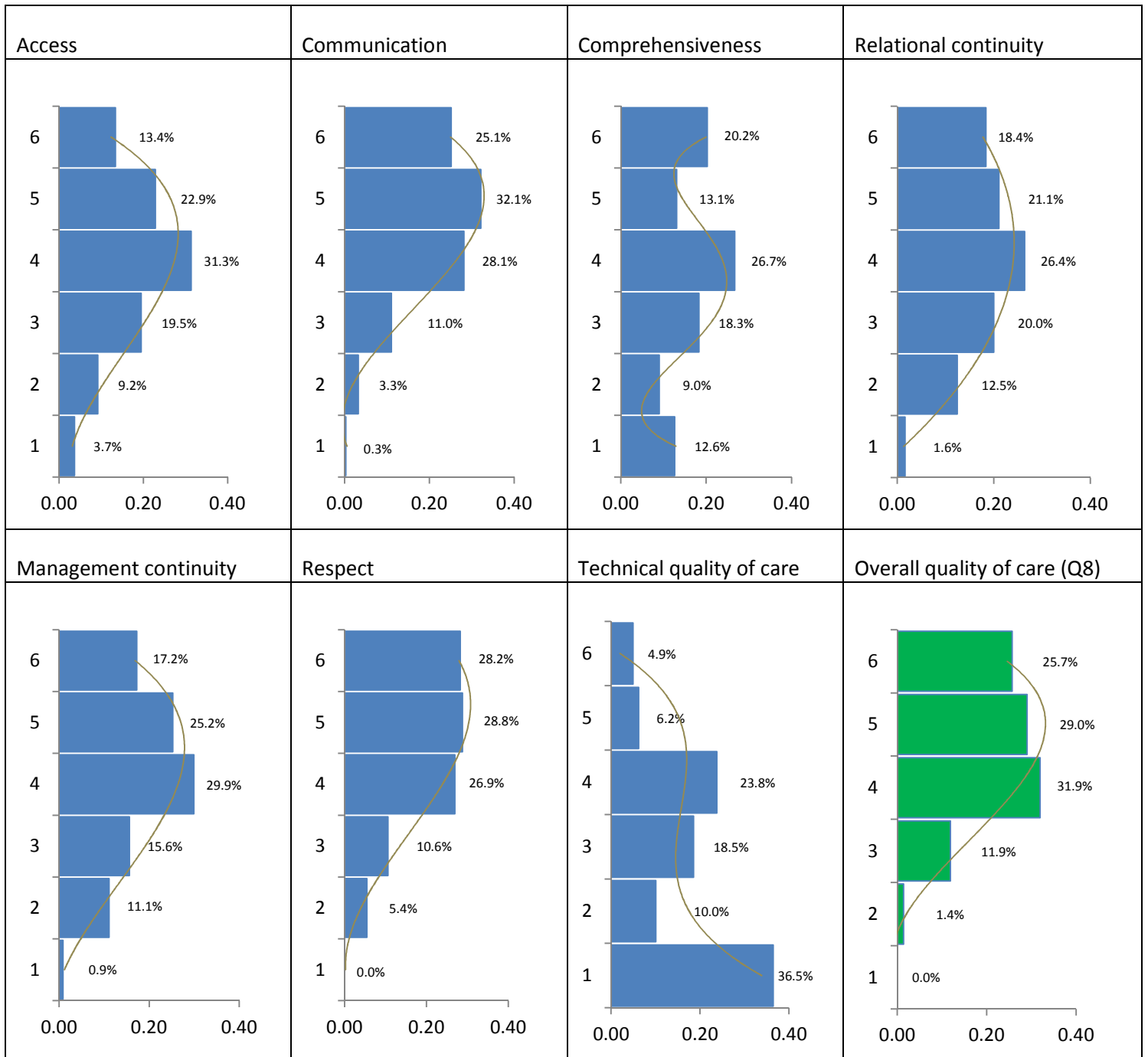
Whereas the median response pattern is clearly evident from Figure 4.2, the underlying distributions can be seen in Figure 4.3 for the core attributes and the overall quality of care. These relative frequency plots are based on the actual number of responses (counts) for different levels of satisfactions for the attributes, aggregated from the sub-scale level counts.

These plots exhibit a number of characteristics. First, the distributions are not all the same, nor are they symmetric (such as the normal probability density function). The fact that most responses are generally positive is reflected in the skewed nature of these distributions (towards better ratings such as 4 or above). In fact, except for Technical quality of care, more than 60% of the ratings for all other attributes were 4 or higher indicating the generally positive perception about the quality of care.

Also, some of these distributions (e.g., for comprehensiveness and technical quality of care) appear to be multimodal indicating that the patients felt strongly (positively or negatively) about some of the sub-scale questions defining those attributes. It is particularly noticeable that a significant 46.5% of the ratings for the Technical quality of care were poor or very poor, making it the weakest performer of the group.

Finally, the last plot of Figure 4.3 shows the distribution for the overall quality of care, which is clearly very positive – in fact, 86.6% of the responses were good, very good or excellent (with a median rating of 5=very good).

Figure 4.3 Distribution of patient responses for core attributes and the overall quality of care.



Legend: 1=Very poor; 2=Poor; 3=Fair; 4=Good; 5=Very good; 6=Excellent.

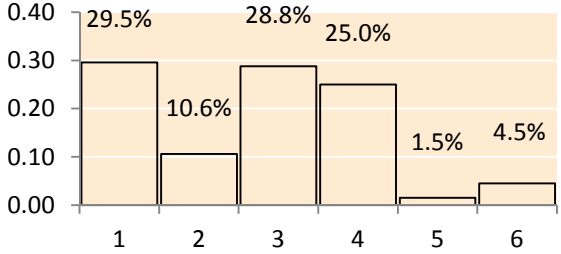
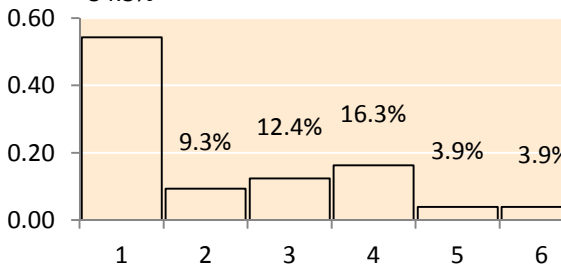
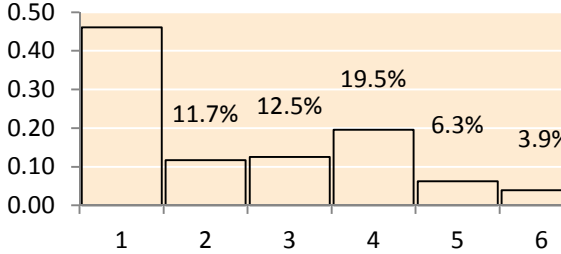
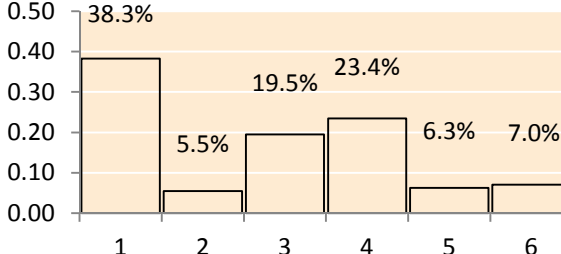
4.3.3 Distribution of sub-scale level ratings

The relative frequency diagrams of Figure 4.3 are based on the ratings assigned to the sub-scale questions (the number of sub-scale questions ranged from two to six per attribute). Examining the frequency histograms of these sub-scale questions (as shown in Appendix 1) further illustrates how responses to individual sub-scale questions eventually contributed to determining the median ratings for the respective attributes and the overall quality of care.

As can be seen from Appendix 1, most of the sub-scale questions were assessed positively by the respondents. The exceptions were related to the two weaker attributes already identified – “Comprehensiveness” and “Technical quality of care.” In addition, one “Access’ related sub-scale question also received predominantly negative ratings. These sub-scale questions and the associate histograms have been separately listed in Table 4.2.

Table 4.2 Sub-scale questions for frequency histograms with predominantly negative ratings

Sub-scale question	Relative frequency histogram														
<p>Access-6: Thinking about the times you needed to see or talk to your doctor, how would you rate the <u>ability to speak to your doctor</u> by phone when you have a question or need medical advice?</p>	<p style="text-align: center;">Access6</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <caption>Relative Frequency Data for Access6</caption> <thead> <tr> <th>Rating</th> <th>Relative Frequency (%)</th> </tr> </thead> <tbody> <tr><td>1</td><td>17.6%</td></tr> <tr><td>2</td><td>24.4%</td></tr> <tr><td>3</td><td>19.7%</td></tr> <tr><td>4</td><td>18.7%</td></tr> <tr><td>5</td><td>11.9%</td></tr> <tr><td>6</td><td>7.8%</td></tr> </tbody> </table>	Rating	Relative Frequency (%)	1	17.6%	2	24.4%	3	19.7%	4	18.7%	5	11.9%	6	7.8%
Rating	Relative Frequency (%)														
1	17.6%														
2	24.4%														
3	19.7%														
4	18.7%														
5	11.9%														
6	7.8%														
<p>Comprehensiveness-2: In the last 12 months, how often did you talk with your physician about specific <u>things you could do to improve health or prevent illness</u> such as smoking cessation, limiting alcohol consumption and exercise?</p>	<p style="text-align: center;">Compre2</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <caption>Relative Frequency Data for Compre2</caption> <thead> <tr> <th>Rating</th> <th>Relative Frequency (%)</th> </tr> </thead> <tbody> <tr><td>1</td><td>25.2%</td></tr> <tr><td>2</td><td>13.8%</td></tr> <tr><td>3</td><td>28.1%</td></tr> <tr><td>4</td><td>16.7%</td></tr> <tr><td>5</td><td>8.1%</td></tr> <tr><td>6</td><td>8.1%</td></tr> </tbody> </table>	Rating	Relative Frequency (%)	1	25.2%	2	13.8%	3	28.1%	4	16.7%	5	8.1%	6	8.1%
Rating	Relative Frequency (%)														
1	25.2%														
2	13.8%														
3	28.1%														
4	16.7%														
5	8.1%														
6	8.1%														

Sub-scale question	Relative frequency histogram														
<p>Technical QC-2: In the past 12 months, were you given a <u>written list of things you should do</u> to improve your health?</p>	<p style="text-align: center;">TechQC2</p>  <table border="1" data-bbox="776 373 1333 625"> <thead> <tr> <th>Category</th> <th>Relative Frequency (%)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>29.5%</td> </tr> <tr> <td>2</td> <td>10.6%</td> </tr> <tr> <td>3</td> <td>28.8%</td> </tr> <tr> <td>4</td> <td>25.0%</td> </tr> <tr> <td>5</td> <td>1.5%</td> </tr> <tr> <td>6</td> <td>4.5%</td> </tr> </tbody> </table>	Category	Relative Frequency (%)	1	29.5%	2	10.6%	3	28.8%	4	25.0%	5	1.5%	6	4.5%
Category	Relative Frequency (%)														
1	29.5%														
2	10.6%														
3	28.8%														
4	25.0%														
5	1.5%														
6	4.5%														
<p>Technical QC-3: In the past 12 months, were you <u>encouraged to go to a specific group or class</u> such as an education seminar to help cope with your chronic condition?</p>	<p style="text-align: center;">TechQC3</p>  <table border="1" data-bbox="776 751 1333 1014"> <thead> <tr> <th>Category</th> <th>Relative Frequency (%)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>54.3%</td> </tr> <tr> <td>2</td> <td>9.3%</td> </tr> <tr> <td>3</td> <td>12.4%</td> </tr> <tr> <td>4</td> <td>16.3%</td> </tr> <tr> <td>5</td> <td>3.9%</td> </tr> <tr> <td>6</td> <td>3.9%</td> </tr> </tbody> </table>	Category	Relative Frequency (%)	1	54.3%	2	9.3%	3	12.4%	4	16.3%	5	3.9%	6	3.9%
Category	Relative Frequency (%)														
1	54.3%														
2	9.3%														
3	12.4%														
4	16.3%														
5	3.9%														
6	3.9%														
<p>Technical QC-4: In the past 12 months, were you <u>encouraged to attend programs in the community</u> such as support groups or exercise classes that could help you?</p>	<p style="text-align: center;">TechQC4</p>  <table border="1" data-bbox="776 1150 1333 1402"> <thead> <tr> <th>Category</th> <th>Relative Frequency (%)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>46.1%</td> </tr> <tr> <td>2</td> <td>11.7%</td> </tr> <tr> <td>3</td> <td>12.5%</td> </tr> <tr> <td>4</td> <td>19.5%</td> </tr> <tr> <td>5</td> <td>6.3%</td> </tr> <tr> <td>6</td> <td>3.9%</td> </tr> </tbody> </table>	Category	Relative Frequency (%)	1	46.1%	2	11.7%	3	12.5%	4	19.5%	5	6.3%	6	3.9%
Category	Relative Frequency (%)														
1	46.1%														
2	11.7%														
3	12.5%														
4	19.5%														
5	6.3%														
6	3.9%														
<p>Technical QC-5: In the past 12 months were you told <u>how your visits with other types of doctors (e.g., specialist or surgeon) helped your treatment</u>?</p>	<p style="text-align: center;">TechQC5</p>  <table border="1" data-bbox="776 1535 1333 1787"> <thead> <tr> <th>Category</th> <th>Relative Frequency (%)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>38.3%</td> </tr> <tr> <td>2</td> <td>5.5%</td> </tr> <tr> <td>3</td> <td>19.5%</td> </tr> <tr> <td>4</td> <td>23.4%</td> </tr> <tr> <td>5</td> <td>6.3%</td> </tr> <tr> <td>6</td> <td>7.0%</td> </tr> </tbody> </table>	Category	Relative Frequency (%)	1	38.3%	2	5.5%	3	19.5%	4	23.4%	5	6.3%	6	7.0%
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1	38.3%														
2	5.5%														
3	19.5%														
4	23.4%														
5	6.3%														
6	7.0%														

Sub-scale questions in Table 4.2 share a common characteristic – 60% or more of the ratings for those questions are negative ranging from “fair” to “very poor.” In addition, close to 50% or more respondents rated sub-scale questions 3 and 4 of “Technical quality of care” to be “very poor.”

4.3.4 Insights from specific questions and comments

In addition to the questions related to the seven core attributes, the patients answered a number of specific questions related to Access and Interpersonal communications. Responses to these questions were given either as yes/no or quantitatively instead of using a Likert Scale. As such, those responses have been analysed separately and are summarized in this section.

Figure 4.4 shows patient response to a question on average wait time for an appointment with the family physician for urgent (but non-life threatening) and non-urgent (routine) appointments. Figure 4.4 clearly shows that even for urgent situations, less than half (43%) of the patients were able to get a same-day appointment though most got an appointment within 2-5 days. About 6% of the patients who needed to see a doctor urgently had to wait for six or more days.

For non-urgent situations, getting a same-day appointment was relatively rare – only 2% appeared to have had this privilege. About half of the patients (54%) got an appointment within 2-5 days but a significant 44% had to wait for six or more days to see their family physicians.

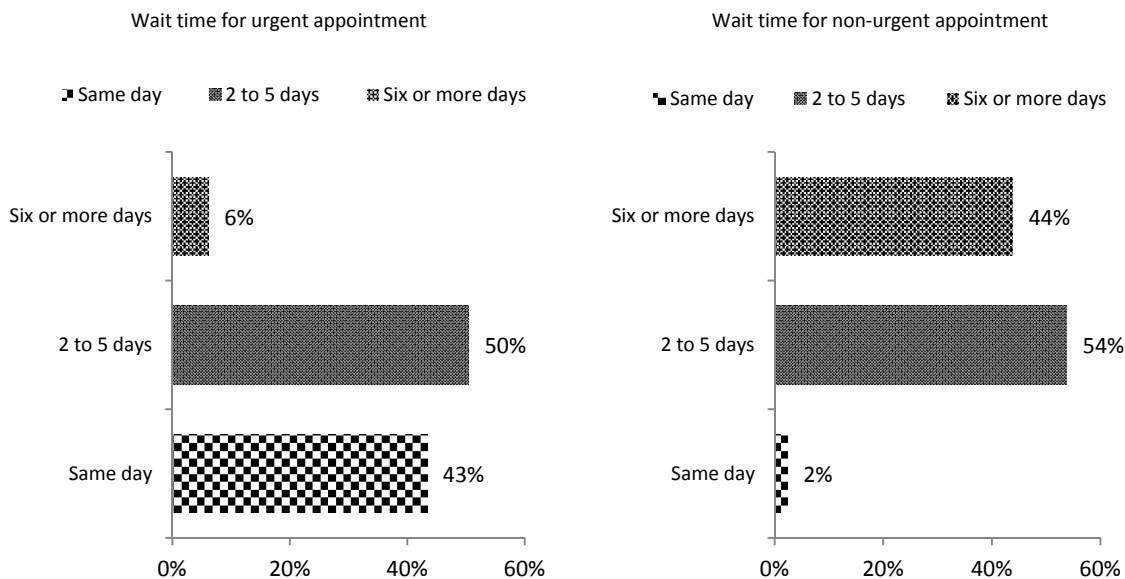


Figure 4.4 Average wait time for an appointment with the family physician responses from patient

This study also asked whether the patients had encountered a number of specific problems in the last twelve months while trying to contact the family physician. These questions were taken from the Canadian Survey of Experiences with Primary Health Care (CSE-PHC) [36] and the results from this study and the national survey are shown in Table 4.3.

Table 4.3 Specific difficulties patients faced while trying to contact family physicians

Type of difficulty faced	Response (%)		
	Winnipeg (this study)	Manitoba (CSE-PHC)	Canada (CSE-PHC)
Question (8): <i>In the last 12 months, what type of difficulties did you experience when you tried to contact your doctor's office (you may select more than one choice from the list below)?</i>			
Faced difficulty contacting a physician or nurse	40	39	34
Did not have a phone number handy	12	0	1
Could not get through (i.e., no answer)	30	11	7
Waited too long to speak to someone	48	26	27
Did not get adequate info or advice	8	31	34

The last specific question was whether the patients faced a language barrier while communicating with a physician (as part of interpersonal communications related issues). Table 4.4 summarizes the responses to the three related specific questions.

Table 4.4 Language barriers faced by patients while communicating with physicians

Interpersonal communications (specific questions)	Response (%) (rounded)
(7) What is your primary language?	
English	95%
French	3%
Other	2%
(8) Do you face any language related problems in terms of explaining your health concerns?	
Always	0%
Sometimes	3%
Never	97%
(9) Do you face any language related problems in terms of understanding your doctor’s explanations, instructions and advice?	
Always	0%
Sometimes	8%
Never	91%

The responses to the language related questions were overwhelmingly positive – over 95% of the patients communicated in English; 97% reported that they never had any difficulty explaining their health concerns; and 91% said they never had difficulty understanding their physicians’ instructions and advice. In short, language does not appear to be a major health concern within the primary care clinics in Winnipeg.

Finally, some of the patients shared their observations and suggestions in the form of additional written comments. Most of those comments centered on having difficulty getting through to the doctor’s office by phone and not being able to reach the doctor (doctor on leave, not available on weekends, does not call back even when left message etc.). The most common remedy for not

getting a same day appointment appeared to be going to a walk-in clinic and visiting the family physician to deal with chronic or long term health care issues.

4.3.5 Influence of demographic factors

This study collected information on the patients’ demographic characteristics that could have influenced the ratings for the overall quality of care. These factors include: age, gender, employment status, income, education, residence type, residence location (within or outside the City of Winnipeg), and status of general health. Table 4.5 below summarizes the sample distribution of these factors. In particular, it may be noted that the age distribution of the sample (patients) is very close to the desired or design distribution shown in Table 3.3.

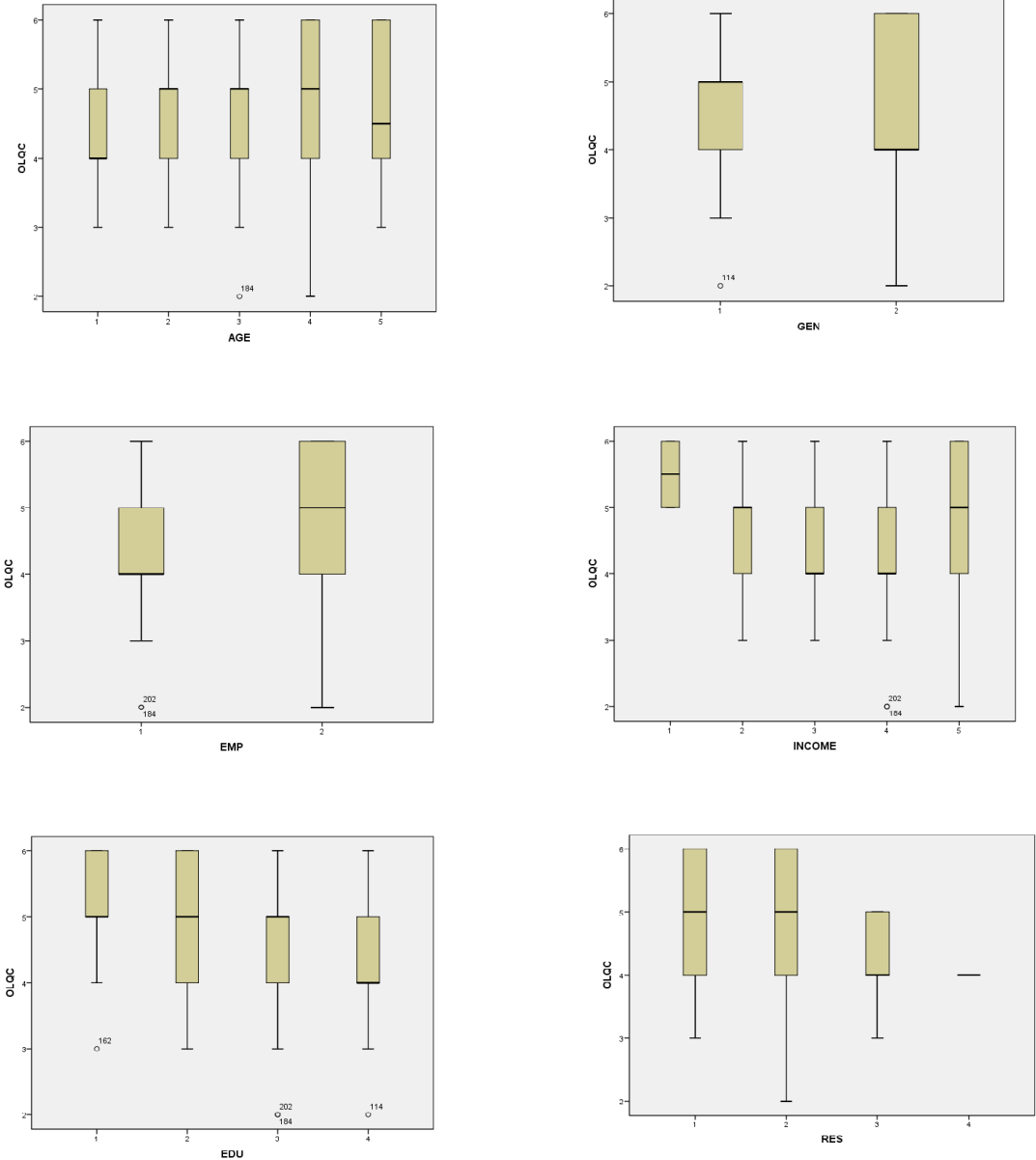
This section will examine the potential influence of these factors on the OLQC (in terms of the ratings assigned for Q8). The potential influence of the demographic factors will be examined in two steps: visually using box plots (Figure 4.5); and, using an ordinal logistic regression model.

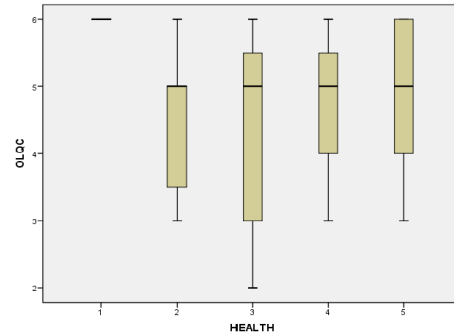
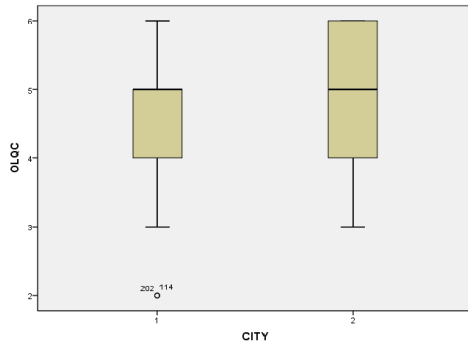
Table 4.5 Respondent profile (patients)

Profile attributes	Percent of sample	Profile attribute	Percent of sample
Sample size (patient): 210			
Age:		Education:	
18-29	11%	Did not finish high school	08%
30-44	17%	High School Diploma / GED	24%
45-59	31%	Post-secondary degree or diploma	52%
60-75	24%	Masters or higher level	15%
75+	16%	Residence:	
Gender:		Rent house/condo/apt	21%
Female	58%	Own house/condo/apt	76%
Male	42%	Live with parents	02%
Employment:		Other	00%
Employed(full/part)	70%	Winnipeg City residence:	
Not employed	30%	Yes (live within the City)	86%
Income:		No (live outside the City)	14%
Less than \$ 20K	04%	General health:	
\$20K to < \$40K	18%	Excellent	16%

\$40K to < \$60K	26%	Good	61%
\$60K to < \$80K	24%	Average	17%
\$80K or more	28%	Poor	05%
Not mentioned	01%	Very poor	00%

Figure 4.5 Overall quality of care against demographic and other variables





4.3.5.1 Box-whisker plots of demographic factors

It can be seen from Figure 4.5 that the OLQC ratings for different age groups range from 4 to 5 with most data points clustered within that range. This implies no strong influence of age as a factor on the perception of the OLQC.

In terms of gender, although females appear to have assigned a higher median rating (5=very good) compared to males (4=Good), most data points lie within 4 and 5 (inclusive). Several male patients have provided poor ratings as evident from the long tail of their box plot but they were few in numbers.

About 70% of the respondents were employed and they rated the overall quality of care more critically (median rating=4) compared to the unemployed group (median rating=5). However, this distinction was masked by the strongly negative assessments of some members of the unemployed group.

Ratings for the OLQC assigned by different incomes groups showed a declining trend as the income level increased except for the last (highest) income group (but this group had several very poor rates). This suggests a possible negative association between the OLQC and the income level.

The influence of the level of education on the OLQC is clearly displayed in Figure 4.5 - the most educated group (Masters or higher) appears to be more critical (rate=4) compared to the other educational groups. This is particularly evident in the position of the IQRs for different groups.

In terms of residence, respondents living in condos and in houses had the same median rating (4), which was better than the median rating for the group that lived with parents (5). But this latter group constituted only 2% of the sample. Overall, residence type does not appear to be associated with the rating assigned for the OLQC.

In terms where the patients lived (inside or outside the city), no clear association is evident from the box plot as both group gave the same median rating of 5 to the OLQC.

Finally, the general health status seems to have a slight positive association with the OLQC implying that people in good or excellent health appeared to be less critical compared to the people with average or poor health conditions.

4.3.5.2 Statistical analysis of the influence of demographic factors

The relationship between patients' perception of the OLQC and the demographic factors was statistically examined using an ordinal logistic regression model with the OLQC as the ordinal dependent variable and all eight demographic factors listed in Table 4.5 as the independent variables. This process was conducted in three steps: first, the demographic factors were tested for potential multicollinearity; second, the model was tested for the proportional odds assumption; and, third, the model parameters and goodness of fit statistics were estimated using the "Generalized Linear Regression" tool of SPSS [78][79].

The first step was accomplished by running a simple linear regression model using the same variables and choosing to generate only the "Collinearity statistics." The first round of the multicollinearity test identified "residence type" as the only predictor with a tolerance of less than 0.1

(VIF > 10). The model was run a second time excluding this factor and all the remaining (seven) attributes turned out to not be statistically correlated (tolerance values ranged from 0.397 to 0.829) as shown in Table 4.6.

Model*		Tolerance	VIF
1	AGE1	.600	1.667
	AGE2	.447	2.238
	AGE3	.405	2.469
	AGE4	.414	2.413
	GEN1	.829	1.207
	EMP1	.523	1.910
	INC1	.799	1.251
	INC2	.491	2.035
	INC3	.526	1.903
	INC4	.627	1.595
	EDU1	.513	1.948
	EDU2	.397	2.519
	EDU3	.430	2.326
	CITY1	.812	1.232
	HEAL1	.617	1.620
	HEAL2	.515	1.941
HEAL3	.482	2.073	

*Dependent Variable: OLQC

Next, the proportional odds assumption was tested by generating the “Test of parallel lines” statistics using the Ordinal Regression option of SPSS (the test statistics are shown in Table 4.7). In this case, $\chi^2(34) = 31.862$ and $p = .573$ (which is greater than .05) indicates that the null hypothesis was not rejected, and therefore, the assumption of proportional odds was met.

Table 4.7 Test of Parallel Lines

Model	-2 Log Likelihood	Chi-Square	df	Sig. (p-value)
Null Hypothesis	480.385			
General	448.524	31.862	34	.573

Finally, test statistics for the overall goodness-of-fit of the model (i.e., an overall measure of whether the model fits the data well) were generated along with the estimates for the model parameters and the odds ratios.

Three overall model fit statistics for the proposed model are shown in Table 4.8. The Omnibus test based on likelihood-ratio produced $\chi^2(17) = 38.327$ and $p = 0.002$ (< 0.05), which means that the independent variables add statistically significantly to the model or, at least one independent variable is statistically significant. Two other measures of goodness of fit are also reported in Table 4.8 – Pearson and Deviance statistics and the latter is thought to be more reliable [80]. Here the null hypothesis is reversed, and therefore, the Deviance p -value of 0.395 signifies a statistically significant model, whereas the Pearson p -value of 0.007 implies a relationship that is not statistically significant.

Table 4.8 Overall model fit statistics

Omnibus test (likelihood-ratio test)				
Model	-2 Log Likelihood	Chi-Square	df	Sig. (p-value)*
Intercept Only	518.713			
Final	480.385	38.327	17	.002
* $p < 0.05$ implies statistically significant relation between the predictors and the dependent variable.				
Goodness-of-Fit				
Statistic		Chi-Square	df	Sig. (p-value)**
Pearson		511.488	436	.007
Deviance		443.270	436	.395
** $p > 0.05$ signifies a good fit.				

Given that the Omnibus test is more reliable than the other two measures [81][82], it is concluded that there is a statistically significant association between the independent demographic factors and the OLQC. Further, the Cox and Snell pseudo-R-Square of 0.167 indicated that this relationship may not be very strong (for a pure linear regression model, an R-square of 0.167 would mean that the independent variables explain 16.7 per cent of the total variance).

The relative contributions of the independent variables to the model (model effects) are summarized in Table 4.9. It can be seen from Table 4.9 that only two of the independent variables – level of education (EDU) and status of general health (HEAL) have statistically significant model effects with p -values < 0.05 .

Table 4.9 Tests of Model Effects

Source	Wald Chi-Square	df	Sig. (p-value)*	Note
AGE	4.135	4	.388	Dependent Variable: OLQC Model: (Threshold), AGE, GEN, EMP, INC, EDU, CITY, HEAL *p <0.05 implies the predictor's contribution to the model is significant.
GEN	.027	1	.868	
EMP	.536	1	.464	
INC	8.160	4	.086	
EDU	12.207	3	.007	
CITY	1.448	1	.229	
HEAL	8.580	3	.035	

Additional insights into the nature of influence of the independent variables on the model can be gained by examining the parameter estimates presented in Table 4.10, where model coefficients are shown in column “B” and their p -values in column “Sig.” The odds ratios are reported in column Exp(B).

Table 4.10 shows that three of the four parameters associated with the different levels of education are statistically significant (p -value < 0.05). The values of these parameters along with the corresponding odds ratios confirm the observation made previously based on visual examination of the box-whisker plots that the higher the level of education, the poorer the rating assigned to the OLQC. Similarly, the poorer the health status, the poorer is likely to be the rating for the OLQC.

In conclusion, it can be said that two of the demographic factors, the level of educational and the status of general health, appear to have statistically significant influence over the rating for the OLQC. Moreover, educational level is inversely associated with the OLQC, whereas the status of health is associated directly.

Table 4.10 Parameter Estimates

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test			Exp(B)	95% Wald Confidence Interval for Exp(B)		
			Lower	Upper	Wald Chi-Square	df	Sig.		Lower	Upper	
Threshold	[OLQC=2]	-5.321	.9734	-7.229	-3.413	29.876	1	.000	.005	.001	.033
	[OLQC=3]	-2.873	.8030	-4.446	-1.299	12.798	1	.000	.057	.012	.273
	[OLQC=4]	-.981	.7821	-2.513	.552	1.572	1	.210	.375	.081	1.737
	[OLQC=5]	.442	.7789	-1.085	1.969	.322	1	.570	1.556	.338	7.162
[AGE=1]	-.749	.5156	-1.759	.262	2.109	1	.146	.473	.172	1.299	
[AGE=2]	.150	.5018	-.833	1.133	.089	1	.765	1.162	.435	3.106	
[AGE=3]	.029	.4318	-.817	.876	.005	1	.946	1.030	.442	2.400	
[AGE=4]	.262	.4602	-.640	1.164	.324	1	.569	1.299	.527	3.203	
[AGE=5]	0 ^a	.	.	.	.	.	.	1	.	.
[GEN=1]	.047	.2827	-.507	.601	.027	1	.868	1.048	.602	1.824	
[GEN=2]	0 ^a	.	.	.	.	.	.	1	.	.
[EMP=1]	-.282	.3849	-1.036	.473	.536	1	.464	.754	.355	1.604	
[EMP=2]	0 ^a	.	.	.	.	.	.	1	.	.
[INC=1]	.828	.7897	-.720	2.376	1.098	1	.295	2.288	.487	10.757	
[INC=2]	-.681	.4706	-1.604	.241	2.095	1	.148	.506	.201	1.273	
[INC=3]	-.806	.4005	-1.591	-.021	4.048	1	.044	.447	.204	.979	
[INC=4]	-.667	.3742	-1.401	.066	3.182	1	.074	.513	.246	1.068	
[INC=5]	0 ^a	.	.	.	.	.	.	1	.	.
[EDU=1]	2.043	.6724	.726	3.361	9.236	1	.002	7.717	2.066	28.824	
[EDU=2]	1.418	.4738	.489	2.347	8.958	1	.003	4.130	1.631	10.453	
[EDU=3]	.696	.3877	-.064	1.456	3.221	1	.073	2.005	.938	4.287	
[EDU=4]	0 ^a	.	.	.	.	.	.	1	.	.
[CITY=1]	-.491	.4078	-1.290	.309	1.448	1	.229	.612	.275	1.362	
[CITY=2]	0 ^a	.	.	.	.	.	.	1	.	.
[HEAL=2]	-1.484	.7056	-2.867	-.101	4.423	1	.035	.227	.057	.904	
[HEAL=3]	-1.217	.4754	-2.149	-.285	6.556	1	.010	.296	.117	.752	
[HEAL=4]	-.529	.3757	-1.265	.208	1.980	1	.159	.589	.282	1.231	
[HEAL=5]	0 ^a	.	.	.	.	.	.	1	.	.
(Scale)	1 ^b										

Dependent Variable: OLQC

Model: (Threshold), AGE, GEN, EMP, INC, EDU, CITY, HEAL

a. Set to zero because this parameter is redundant.

b. Fixed at the displayed value.

4.4 Quality of care attributes: physicians' perspective

This study surveyed 22 physicians from six clinics across Winnipeg to assess their perception about the quality of the primary care system and also to compare their views with that of the patients. This section summarizes the key features of the physicians' perspective using the same methods and tools used for examining the patients' perspective.

4.4.1 Median ratings for core attributes

The median rating for each of the core attributes along with the inter-quartile range for that attribute is shown in Figure 4.6.

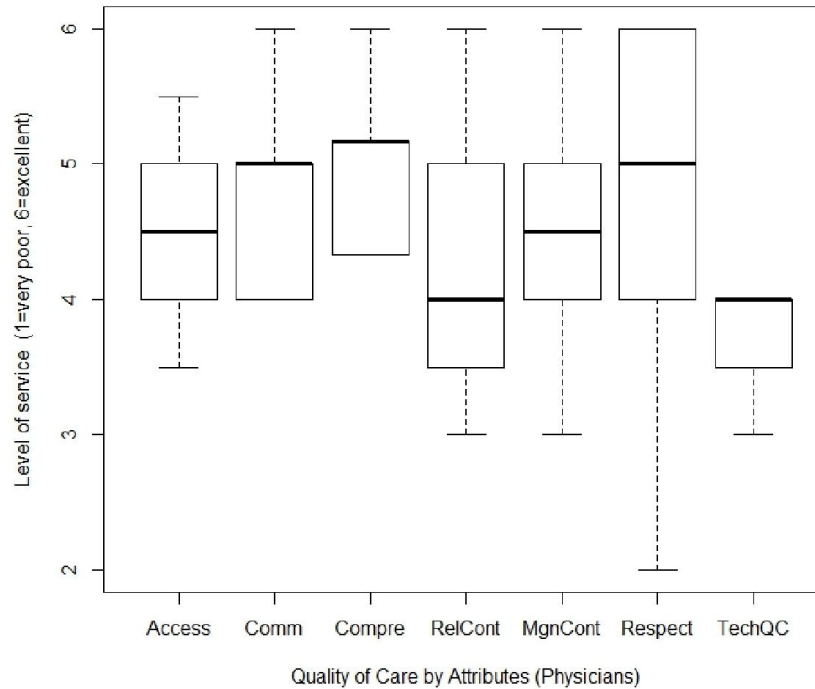


Figure 4.6 Box-whisker plots of ratings core attributes (physician)

Figure 4.6 shows that the physicians generally had a positive perception about the quality of care attributes as the median ratings range from 4 (good) to 5.2 (above very good). In fact five out of

the seven medians are above 4, which is a clear indication that physicians are generally satisfied with the quality of service being provided through the primary healthcare system.

4.4.2 Distribution of ratings for core attributes

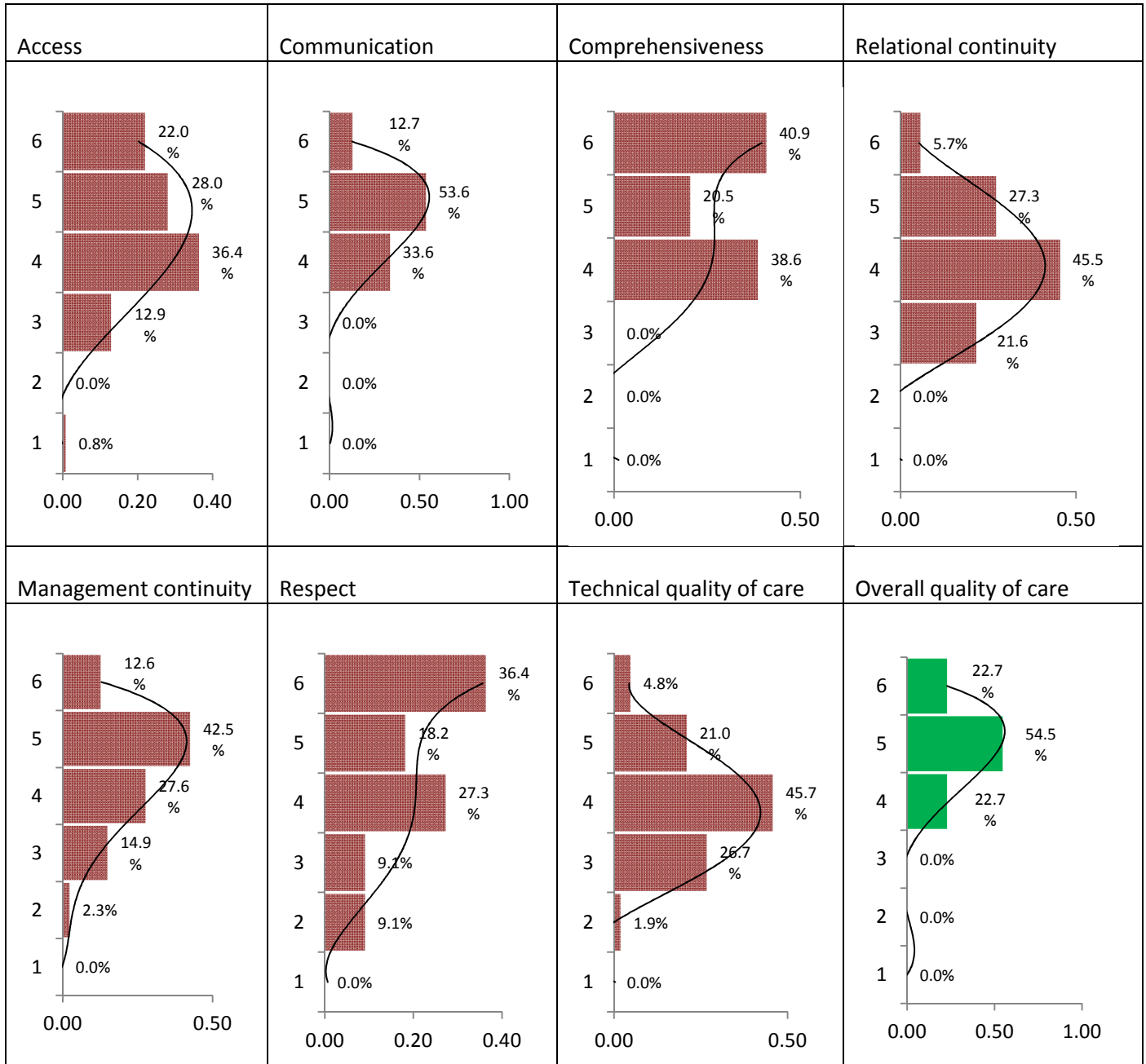
As before, the relative frequency plots for the core attributes, as shown in Figure 4.7, are based on the actual number of responses (counts) for different levels of satisfactions for those attributes, aggregated from the sub-scale level counts.

The first feature that is evident from Figure 4.7 is that the ratings assigned by physicians for different attributes are predominantly positive (4 or higher). In particular, except for Technical quality of care, more than 80% of the responses are in the good to excellent (4-6) range. In addition, practically 100% of the ratings for Communication and Comprehensiveness are above 4, which are noticeably different from the ratings assigned by the patients – 85.3% and 60% respectively.

As indicated before, the weakest attribute in the group is Technical quality of care that received approximately 30% of the ratings equal to or below 3 (fair to very poor). However, this is significantly better than the ratings assigned by the patients (65% equal to or below 3).

The ratings for the overall quality of care (Q8) is also exclusively positive – practically 100% of the ratings are 4 or better; for patients, this was 86.6%. Moreover, more than half the responses were 5 (very good), which determined the median rating for the OLQC to be 5.

Figure 4.7 Distribution of physician responses for core attributes and the overall quality of care



Legend: 1=Very poor; 2=Poor; 3=Fair; 4=Good; 5=Very good; 6=Excellent.

At this point, it may be interesting to compare percent of the ratings that are positive (4 or better) for both groups and this is shown in Figure 4.8. It is again evident that the physicians have a better perception about the overall quality of care and its attributes except for one, “Respect;” for this the patient rating is slightly more positive (83.9%) compared to the physician rating (81.9%).

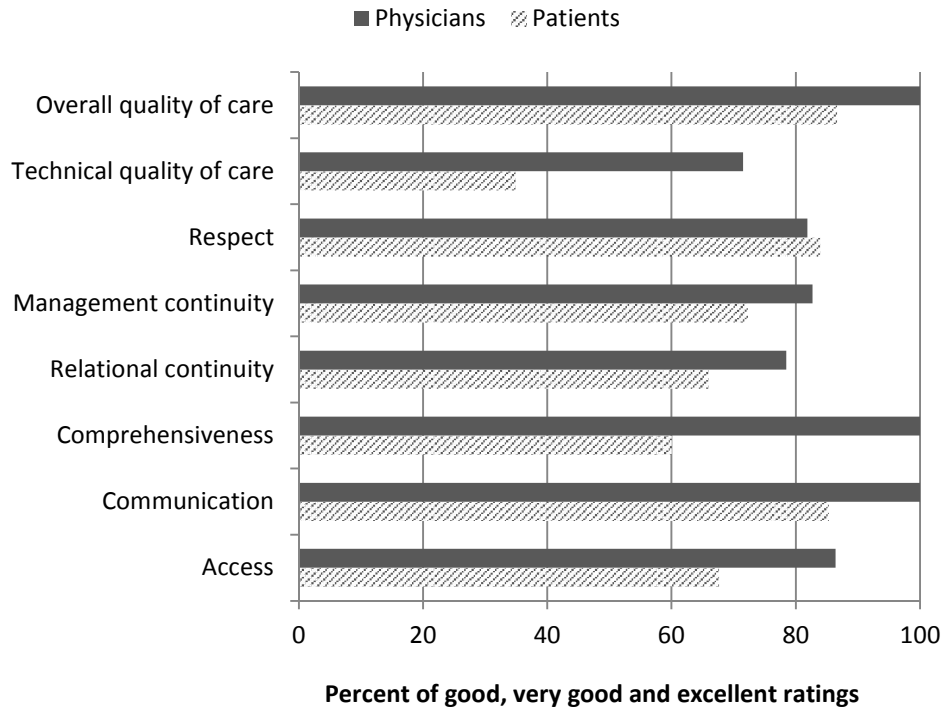


Figure 4.8 Percent of positive (4 or better) ratings for different attributes

4.4.3 Distribution of sub-scale level ratings

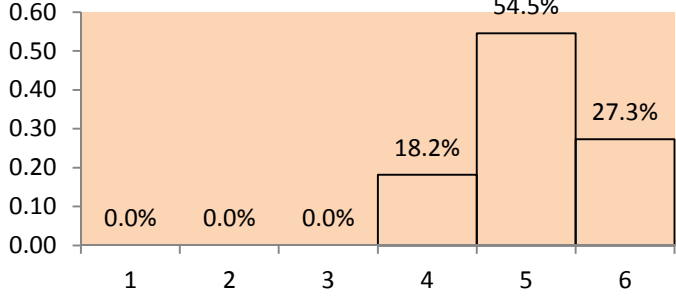
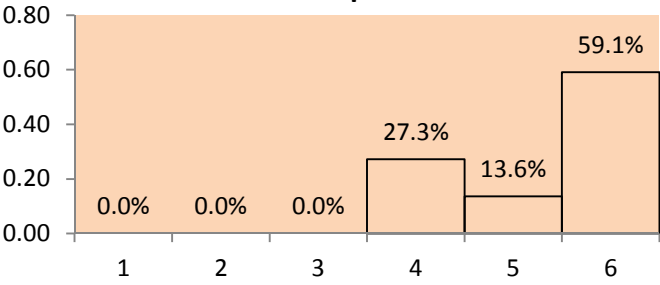
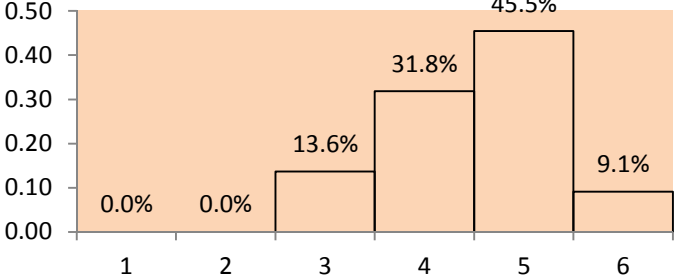
For the physicians, there were 27 sub-scale questions for the seven core attributes plus one question on the overall quality of care. The questionnaire for patients had the same 27 questions plus seven additional ones which are not relevant for the physicians. The frequency diagrams for the attribute level sub-scale questions are shown below in Appendix 2.

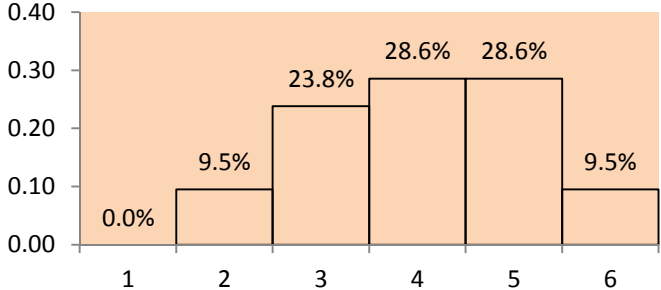
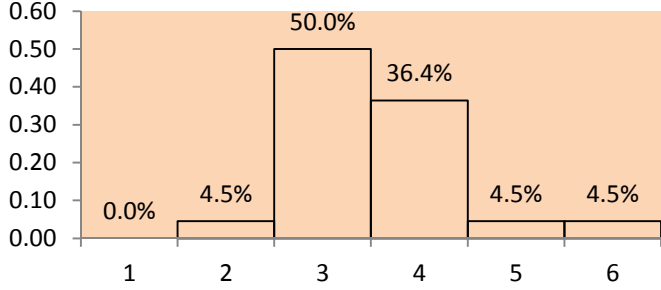
As can be seen from the above figures, most of the sub-scale questions for a particular attribute have similar patterns. The ones that are different have been shaded for further scrutiny and have been presented in Table 4.11.

For examples, on patients being able to call in and talk to their physicians (Access-5 & 6), about 23% to 35% responses ranged from fair to very poor. On the other hand, on providing follow up instructions to the patients (Communication-4), 27.3% of the ratings were excellent. Another more pronounced response was given to the question related to helping the patients receive a range of services (Comprehensiveness-1), which had 59.1% excellent ratings.

Table 4.11 Sub-scale questions for frequency histograms with noticeable patterns

Sub-scale question	Relative frequency histogram														
<p>Access-5: Thinking about the times your patients needed to see or talk to you (doctor), how would you <u>rate the ability of your patient to get through to your office by phone?</u></p>	<table border="1"> <caption>Access5 Data</caption> <thead> <tr> <th>Rating</th> <th>Relative Frequency (%)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.0%</td> </tr> <tr> <td>2</td> <td>0.0%</td> </tr> <tr> <td>3</td> <td>22.7%</td> </tr> <tr> <td>4</td> <td>40.9%</td> </tr> <tr> <td>5</td> <td>13.6%</td> </tr> <tr> <td>6</td> <td>22.7%</td> </tr> </tbody> </table>	Rating	Relative Frequency (%)	1	0.0%	2	0.0%	3	22.7%	4	40.9%	5	13.6%	6	22.7%
Rating	Relative Frequency (%)														
1	0.0%														
2	0.0%														
3	22.7%														
4	40.9%														
5	13.6%														
6	22.7%														
<p>Access-6: Thinking about the times your patients needed to see or talk to you (doctor), how would you <u>rate the ability of your patient to speak to you (doctor) by phone</u> when they had a question or need medical advice?</p>	<table border="1"> <caption>Access6 Data</caption> <thead> <tr> <th>Rating</th> <th>Relative Frequency (%)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>4.5%</td> </tr> <tr> <td>2</td> <td>0.0%</td> </tr> <tr> <td>3</td> <td>31.8%</td> </tr> <tr> <td>4</td> <td>40.9%</td> </tr> <tr> <td>5</td> <td>22.7%</td> </tr> <tr> <td>6</td> <td>0.0%</td> </tr> </tbody> </table>	Rating	Relative Frequency (%)	1	4.5%	2	0.0%	3	31.8%	4	40.9%	5	22.7%	6	0.0%
Rating	Relative Frequency (%)														
1	4.5%														
2	0.0%														
3	31.8%														
4	40.9%														
5	22.7%														
6	0.0%														

Sub-scale question	Relative frequency histogram														
<p>Communication-4: How would you <u>rate your instructions about symptoms to report and when to seek further care?</u></p>	<p style="text-align: center;">Comm4</p>  <table border="1" data-bbox="662 373 1333 667"> <thead> <tr> <th>Rating</th> <th>Relative Frequency</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.0%</td> </tr> <tr> <td>2</td> <td>0.0%</td> </tr> <tr> <td>3</td> <td>0.0%</td> </tr> <tr> <td>4</td> <td>0.182</td> </tr> <tr> <td>5</td> <td>0.545</td> </tr> <tr> <td>6</td> <td>0.273</td> </tr> </tbody> </table>	Rating	Relative Frequency	1	0.0%	2	0.0%	3	0.0%	4	0.182	5	0.545	6	0.273
Rating	Relative Frequency														
1	0.0%														
2	0.0%														
3	0.0%														
4	0.182														
5	0.545														
6	0.273														
<p>Comprehensiveness-1: Please tell me the extent to which you agree or disagree with the following statements: <u>you help your patients receive a range of services that meets most or all of their primary health care needs.</u></p>	<p style="text-align: center;">Compre1</p>  <table border="1" data-bbox="662 783 1317 1066"> <thead> <tr> <th>Rating</th> <th>Relative Frequency</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.0%</td> </tr> <tr> <td>2</td> <td>0.0%</td> </tr> <tr> <td>3</td> <td>0.0%</td> </tr> <tr> <td>4</td> <td>0.273</td> </tr> <tr> <td>5</td> <td>0.136</td> </tr> <tr> <td>6</td> <td>0.591</td> </tr> </tbody> </table>	Rating	Relative Frequency	1	0.0%	2	0.0%	3	0.0%	4	0.273	5	0.136	6	0.591
Rating	Relative Frequency														
1	0.0%														
2	0.0%														
3	0.0%														
4	0.273														
5	0.136														
6	0.591														
<p>Relational continuity-1: Thinking about how well you know your patients: how would you <u>rate your knowledge of your patients' entire medical history?</u></p>	<p style="text-align: center;">RelCont1</p>  <table border="1" data-bbox="662 1178 1333 1451"> <thead> <tr> <th>Rating</th> <th>Relative Frequency</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>0.0%</td> </tr> <tr> <td>2</td> <td>0.0%</td> </tr> <tr> <td>3</td> <td>0.136</td> </tr> <tr> <td>4</td> <td>0.318</td> </tr> <tr> <td>5</td> <td>0.455</td> </tr> <tr> <td>6</td> <td>0.091</td> </tr> </tbody> </table>	Rating	Relative Frequency	1	0.0%	2	0.0%	3	0.136	4	0.318	5	0.455	6	0.091
Rating	Relative Frequency														
1	0.0%														
2	0.0%														
3	0.136														
4	0.318														
5	0.455														
6	0.091														

Sub-scale question	Relative frequency histogram														
<p>Management continuity-2: How would you <u>rate your involvement in the care of your patients when they were being treated by a specialist or were hospitalized?</u></p>	<p style="text-align: center;">MgmCont2</p>  <table border="1" data-bbox="662 367 1318 655"> <caption>Data for MgmCont2 Histogram</caption> <thead> <tr> <th>Rating</th> <th>Relative Frequency (%)</th> </tr> </thead> <tbody> <tr><td>1</td><td>0.0%</td></tr> <tr><td>2</td><td>9.5%</td></tr> <tr><td>3</td><td>23.8%</td></tr> <tr><td>4</td><td>28.6%</td></tr> <tr><td>5</td><td>28.6%</td></tr> <tr><td>6</td><td>9.5%</td></tr> </tbody> </table>	Rating	Relative Frequency (%)	1	0.0%	2	9.5%	3	23.8%	4	28.6%	5	28.6%	6	9.5%
Rating	Relative Frequency (%)														
1	0.0%														
2	9.5%														
3	23.8%														
4	28.6%														
5	28.6%														
6	9.5%														
<p>Technical quality-2: In the past 12 months, have you given a <u>written list of things your patients should do to improve your health?</u></p>	<p style="text-align: center;">TechQC2</p>  <table border="1" data-bbox="662 787 1318 1075"> <caption>Data for TechQC2 Histogram</caption> <thead> <tr> <th>Rating</th> <th>Relative Frequency (%)</th> </tr> </thead> <tbody> <tr><td>1</td><td>0.0%</td></tr> <tr><td>2</td><td>4.5%</td></tr> <tr><td>3</td><td>50.0%</td></tr> <tr><td>4</td><td>36.4%</td></tr> <tr><td>5</td><td>4.5%</td></tr> <tr><td>6</td><td>4.5%</td></tr> </tbody> </table>	Rating	Relative Frequency (%)	1	0.0%	2	4.5%	3	50.0%	4	36.4%	5	4.5%	6	4.5%
Rating	Relative Frequency (%)														
1	0.0%														
2	4.5%														
3	50.0%														
4	36.4%														
5	4.5%														
6	4.5%														

Regarding the physician’s knowledge about her patients’ personal histories (Relational continuity-1), 55% of the respondents said they had very good or excellent knowledge. However, on being involved when the patients were seeing specialists or were hospitalized (Management continuity-2), the assessment was not as positive – about a third of the respondents assigned fair or poor ratings. Finally, “Technical quality of care” turned out to be the weakest attribute and in response to the sub-scale question on providing a written list of things to do to improve health (Technical quality-2), close to 55% of the respondents gave fair or poor ratings.

4.4.4 Insights from specific questions and comments

Specific questions related to “Access” and “Communications” posed to the physicians were similar to the questions posed to the patients. However, there were additional questions related to

comprehensiveness, relational continuity and technical quality of care that were not relevant for the patients.

Figure 4.9 shows the physicians' perception about waiting time for urgent and non-urgent visits. When compared with Figure 4.4, it appears that the physicians have significantly different views about how long it might take for a patient to get an appointment for urgent cases. About 82% of the physicians thought that patients were able to get a same-day appointment for urgent reasons; whereas only 43% of the patients thought so. The physicians thought that 100% of the urgent patients and 91% of the non-urgent patients were able to get an appointment within five days of contacting their office; these estimates for the patients were 93% and 56% respectively. For non-urgent cases, the physicians said about 9% of the patients had to wait six or more day; but 44% of the patients said they had to wait six or more days for non-urgent visits.

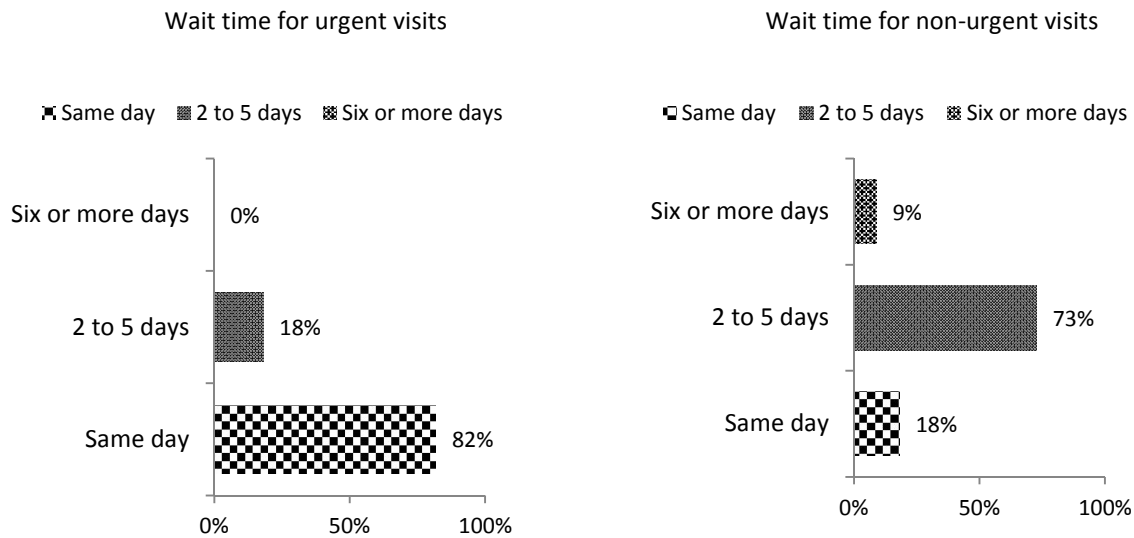


Figure 4.9 Average wait time for an appointment with the family physician responses from physician

In terms of the physicians' perception about specific difficulties encountered by their patients while trying to contact by phone, the physicians shared some written observation (due to the small sample size, percentages are not reported). The most common observations included patients having difficulty getting through to their offices due to "busy phone lines" or "complicated phone triage." Other issues mentioned included "patients calling outside of office hours," and "patients not waiting long enough" when put in a queue. Some physicians mentioned that the way messages left by patients are handled can be improved to better serve the patients. In addition some of the physicians mentioned "no show" as one of their difficulties.

In terms of language, 84% of the physicians spoke only English, about 8% spoke both English and French, and the rest spoke English and another (non-French) language. However, in terms of having any issues with either understanding the patients' concerns or giving them instructions or advice, about 73% of the physicians said they had some difficulties; this is in sharp contrast with over 90% of the patients saying that they "never" had any issues communicating with their physicians. This

is an indication of a clear gap in the area of interpersonal communication although this may not be entirely due to a language barrier.

In relation to comprehensiveness of care, physicians were asked about what other services were offered at the primary care clinic where they served. Figure 4.10 summarizes the responses to this question. It appears that most clinics surveyed provide services such as immunization, family planning and care for chronic health issues. Some also provide advice on diet and other services that include pre-natal care, nursing, respiratory services, minor surgical procedures, wound care, EKG, diabetic education, pharmacy and counselling.

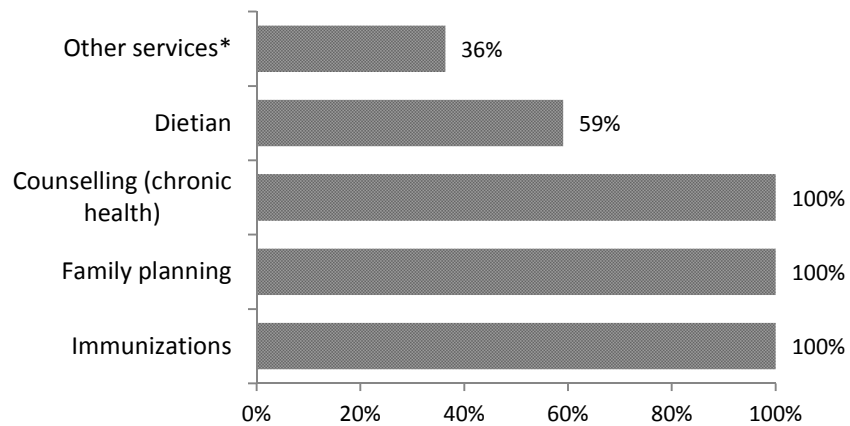


Figure 4.10 Ancillary services available at the primary care clinics

Physicians were also asked whether they were taking in new patients and 82% of the physicians surveyed indicated that they were not taking in new patients.

Regarding the technical quality of care, the physicians were asked additional questions on the use of checklist and other means for managing chronic diseases. As can be seen from Figure 4.11, most physicians (70% or more) used electronic records and written instructions and checklists for managing chronic health issues. However, 38% kept a summary of the patients (cohort groups) with a particular type of chronic condition. It may be noted that approximately 15% of the physicians still do

not have access to electronic data bases or they prefer to use paper patient files. The physicians surveyed also answered a number of questions related to the use of information technology for communication, record keeping and information management. Responses to these questions are summarized in Figures 4.12.

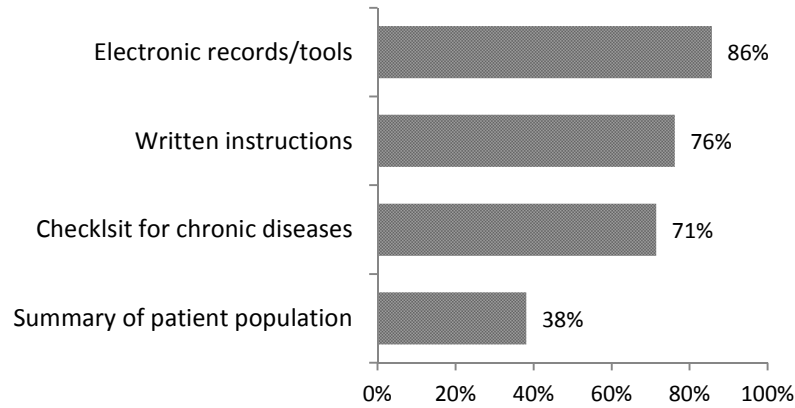


Figure 4.11 Means used for managing chronic diseases.

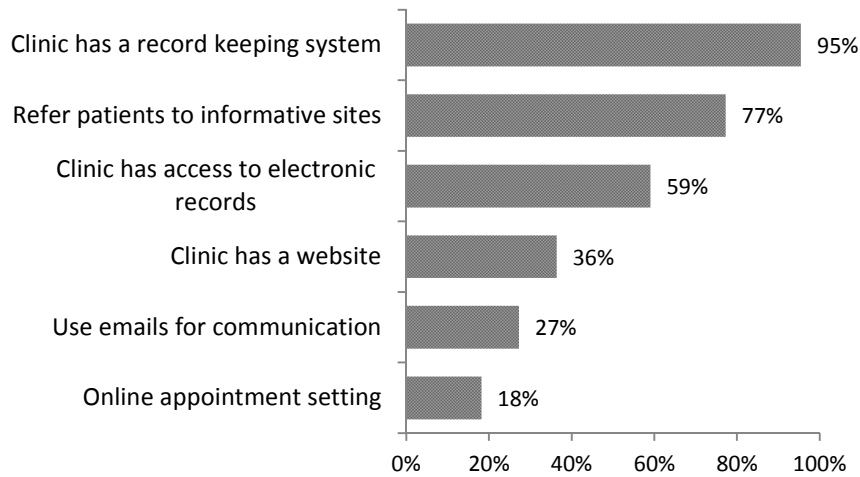


Figure 4.12 Use of information technology for case management.

Figure 4.12 shows an interesting pattern: while 95% of the clinics have a record keeping system, the use of the internet and electronic tools is not as impressive. Only 36% of the clinics have websites; 27% of the physicians use emails to communicate with patients and other service providers; and only 18% of the clinics allow setting an appointment via their webpages

Finally, as a follow-up to the questions on the use of information technology, a separate set of questions were asked on whether the primary care clinics had access to a variety of electronic tools for conducting their day-to-day business. Responses to these questions are summarized in Table 4.12.

Table 4.12 Access to electronic tools

No.	Access to electronic tools	% of clinics
1	Online access to journals and other medical data bases	100
2	Billing system	95
3	Clinical patient notes entry/retrieval system	91
4	Email	91
5	Electronic appointment/ Schedule system	82
6	Online CME	82
7	Electronic reminders for recommended patient care	68
8	Electronic interface to external laboratory/diagnosis imaging	59
9	Online disease management tools	59
10	Electronic warning for adverse side effects from prescription drugs electronic interface to external pharmacy/pharmacist	55
11	Electronic interface to other external systems for accessing or sharing patient information	45
12	Online discussion forums with other physicians for professional purposes	23

It appears that primary care clinics surveyed had access to a range of tools that they used for patient care. The area of improvement seems to be having access to: an electronic interface for accessing laboratory/diagnostic data and online disease management tools (59%); electronic warning for adverse side effects of prescription drugs (55%); and electronic interface for sharing patient information with external service providers (45%). Having online discussion forum is probably not as important as physicians are likely to have other avenues for learning from and sharing information with their colleagues.

4.4.5 Influence of demographic factors

In this study, physicians have been assumed to be a fairly homogeneous group and only a limited number of “profile” questions were posed to them that included age, gender, place where medical degree was completed (North America, Europe, other), patients load per week, and time of practice in Manitoba. Table 4.13 summarizes the physician profile based on these questions. Also, some of these factors might have influenced the ratings assigned to the OLQC, but no further analysis has been carried out to identify such influences due to the limited sample size.

Table 4.13 Respondent profile (physician)

Profile attributes	Percent of sample	Profile attribute	Percent of sample
Sample size (physicians): 22			
Age:		Number of patients served per week:	
25-44	36%	Less than 100	59%
45-54	23%	100 to less than 150	32%
55-64	41%	150 to less than 200	0%
>=65	0.00	200 or more	9%
Gender		Practicing in Manitoba for:	
Female	50%	1 to 5 years	9%
Male	50%	More than 5 to 10 years	46%
Medical degree from:		More than 10 years	
US/Canada	82%		
Europe	0%		
Other	18%		

4.5 Comparison of patient and physician perceptions

One of the specific objectives of this study is to examine whether the responses provided by the patients and physicians are statistically different or not. This, for ordered data, can be done by employing the Mann-Whitney *U*-test (also known as Wilcoxon rank-sum test). This test has been separately applied for all seven attributes and also for the final question on the overall quality of care.

For this test, patients and physician data points have been combined to create a pooled data set to conduct the Mann-Whitney *U*-test. The combined sample size for this test was 232 (210 patients

and 22 physicians). This sample size is adequate for an anticipated effect size of $\delta=0.5$ (as mentioned in Methodology chapter). There is no general rule on what the proportion of the samples to be compared should be (it depends on how similar or different they are). In this case, the physician sample size (22) is about 10% of the patients sample size, which turned out to be adequate for conducting statistically significant tests as summarized in Table 4.14.

As evident from Table 4.14, the difference in perception about the overall quality of care between the two groups is not statistically significant. However, there are statistically significant differences when ratings of individual attributes are compared. The patients have somewhat more complaints about “Access” compared to the physicians (p -value=0.01558). The difference between the perception of patients and physicians is very strong for “Comprehensiveness” (p -value=2.045e-07) and “Technical quality of care” (p -value=2.482e-05). It may be recalled that the median ratings for these two attributes were also noticeably different – 3.5 (patients) and 5.2 (physicians) for “Comprehensiveness”; and 2 (patients) and 4 (physicians) for “Technical quality of care.”

Table 4.14 Comparison of patient and physician responses

Attribute	Mann-Whitney		Significant at $\alpha=0.05$
	<i>U</i>	<i>p</i> value	
OLQC	1891.5	0.1455	No
Access	1597.5	0.01558	Yes
Inter-personal Communication	2281.0	0.9204	No
Comprehensiveness	788.5	2.045e-07	Yes
Relational Continuity	2222.5	0.7652	No
Management Continuity	1896.0	0.1889	No
Respect	2309.0	0.9972	No
Technical Quality of Care	674.0	2.482e-05	Yes

Thus, it can be concluded that even though no statistically significant difference could be detected between the perceptions of patients and physicians regarding the overall quality of care,

their perceptions about some of the underlying core attributes differ significantly, in particular, for “Access”, “Comprehensiveness” and “Technical quality of care.”

4.6 Comparison of study results with the national level survey findings

This study took a number of the sub-scale questions used in its survey instrument from various national level, validated survey instruments as indicated in Table 3.1. For some of these sub-questions, national level survey data was available, primarily from CSE-PHC (patients) and NPS (physicians). This section presents a comparative analysis of the findings of this study vis-à-vis the corresponding CSE-PHC and NPS findings.

4.6.1 Comparison with national patient survey results

Eight of the subscale questions for the core attributes used in this study, along with the question on the overall quality of care, were directly adopted from the 2008 CSE-PHC survey (these sub-scale questions are shown in Table 4.15). In this section, patients’ responses to these questions are compared with corresponding responses from Manitoba and Canada as reported by 2008 CSE-PHC using Mann-Whitney *U*-test.

It should be noted that the national level CSE-PHC survey had a broader scope – it included many different types of healthcare clinics and it had a much wider geographic scope. This study focused on the primary care clinics with family physicians located within the City of Winnipeg. Thus, the responses being compared are not expected to have a close match.

Second, CSE-PHC survey often used a five-point (1-5) Likert Scale whereas this study used a six-point (1-6) scale. Thus, individual data points from the national surveys had to be rescaled and regrouped in order to compare them with the responses from this study.

Specifically, two different schemes were used: first, all data points were categorized into two groups – positive (better than average) and negative (poorer than average); and, second, the data

points were grouped into three groups – positive, neutral and negative. In both cases, re-scaling and/or regrouping might have changed the underlying distribution or skewness. As a result, conclusions based on the Mann-Whitney *U*-test statistics as described below may not always be applicable to the original data sets.

A total of 36 Mann-Whitney *U*-tests were conducted (9 for the two-group case and another 9 for the three-group case for Winnipeg-Manitoba and Winnipeg-Canada comparisons) and the results are shown in Table 4.15.

The null hypothesis for these tests was that the two samples being compared had similar population characteristics. The null hypothesis would be rejected for $p\text{-value} < 0.05$, which would imply that the results being compared are statistically different. Therefore, $p\text{-value} > 0.05$ would imply that the results being compared are not statistically different.

It can be seen from Table 4.15 that out of the 36 cases, 26 cases have $p\text{-values} < 0.05$ implying that for most of the subscale questions, responses from Winnipeg were statistically different compared to the same from province-wide (Manitoba) or national level (Canada) responses. The remaining 10 cases, for which the responses were found to be statistically similar, are associated with the OLQC, Comprehensiveness and Technical quality of care.

Three specific observations can be made from the test results for the two-group case (when all the responses were divided into positive and negative groups), which was less affected by rescaling/ regrouping of data. First, the rating for the OLQC from CSE-PHC and this study turned out to be statistically similar. This result compares well with the observation that about 85% of the respondents from Canada, Manitoba and Winnipeg gave positive ratings to the OLQC (they were generally, almost always or always satisfied).

Second, responses to the 2nd comprehensiveness related sub-question also turned out to be statistically similar. This is consistent with the observation that approximately 65% of the respondents

from Canada, Manitoba and Winnipeg indicated that they only “sometimes,” “rarely” or “never” had any dialogue with their family physicians regarding things they could do improve health or prevent illness.

Finally, respondents also appear to be in agreement in response to the 2nd technical quality of care sub-question on having a written list of things to do to improve patient health. This is consistent with the fact that approximately 72% of the respondents from all categories indicated that they “sometimes”, “generally (did) not”, or “almost never” received such written lists.

Table 4.15 Comparison of national (CSE-PHC) and Winnipeg (patient survey) responses to common sub-scale questions

No	Attribute	Sub-scale question	Two-group ^a comparison (Winnipeg ^c & Manitoba)		Three-group ^b comparison (Winnipeg ^c & Manitoba)		Two-group ^a comparison (Winnipeg ^c & Canada)		Three-group ^b comparison (Winnipeg ^c & Canada)	
			U-statistic	p-value	U-statistic	p-value	U-statistic	p-value	U-statistic	p-value
1	Overall quality of care	Not application	80549	0.519	66589.5	0.0	829535	0.938	65078.6	0.0
2	Comprehensive-ness	Your primary care provider delivers a range of services that meets most or all of your primary health care needs.	97081	0.001	101577	0.523	1066102	0.0	1068067	0.038
3	Comprehensive-ness	In last 12 months, how often did you talk with your physician about specific things you could do to improve health or prevent illness such as smoking cessation, limiting alcohol consumption and exercise?	77803.5	0.268	79987.5	0.725	888841	0.892	820967	0.025
4	Relational continuity	When you go to your primary care provider, you are taken care of by the same doctor or nurse each time?	73272	0.0	61801	0.0	792179	0.0	657473	0.0
5	Technical quality of care (long term care)	In the past 12 months, were you asked to talk about your goals in caring for your <i>chronic condition</i> ?	31450	0.03	32979	0.237	328303	0.027	345941	0.298
6	Technical quality of care	In the past 12 months, were you given a <i>written list</i> of things you should do to improve your health?	33901	0.224	28938.5	0.0	351198	0.18	300946	0.0
7	Technical quality of care	In the past 12 months, were you encouraged to go to a specific group or class such as an <i>education seminar</i> to help cope with your chronic condition?	30234.5	0.0	27313	0.0	317413	0.0	289745	0.0
8	Technical quality of care	In the past 12 months, were you encouraged to attend <i>programs in the community</i> such as support groups or exercise classes that could help you?	29126	0.0	26890	0.0	305800	0.0	283543	0.0
9	Technical quality of care	In the past 12 months were you told how your <i>visits with other types of doctors</i> (e.g., specialist or surgeon) helped your treatment?	29250	0.006	26606.5	0.0	309215	0.009	284196	0.0

a: Ratings were grouped into positive and negative. b: Ratings were grouped into positive, neutral and negative categories. c: Winnipeg refers to this study.

This study has employed some specific questions adopted from the CSE-PHC survey. Figure 4.13 shows what types of difficulty the patients faced in the last 12 months while trying to contact the doctor’s office. The main complaint of the patients from Winnipeg was that they had to wait too long to speak to someone. Generally, close to 40% of all respondents (Winnipeg, Manitoba and Canada) indicated that they had difficulty contacting a physician or a nurse.

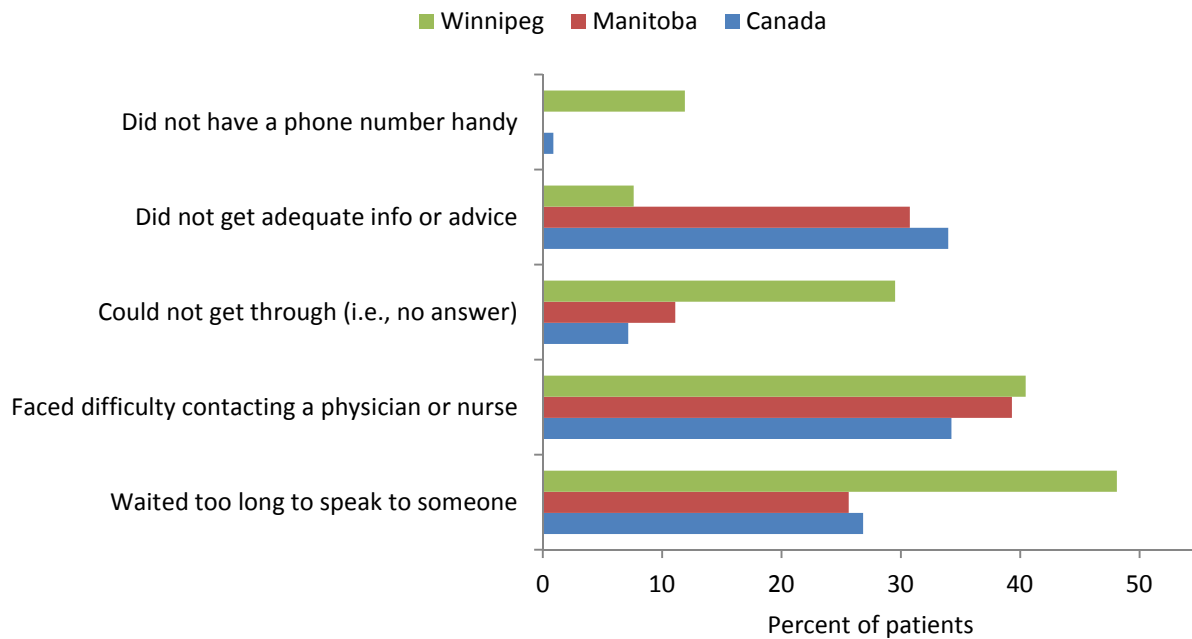


Figure 4.13 Patients reporting difficulty while trying to contact doctor’s office

Finally, in terms of whether the patients faced any language barriers, the results from this study are practically identical to the CSE-PHC results – over 91% of the respondents from all groups said that they did not face any language issues while communicating their problems or understanding their doctor’s instructions (see Figure 4.14).

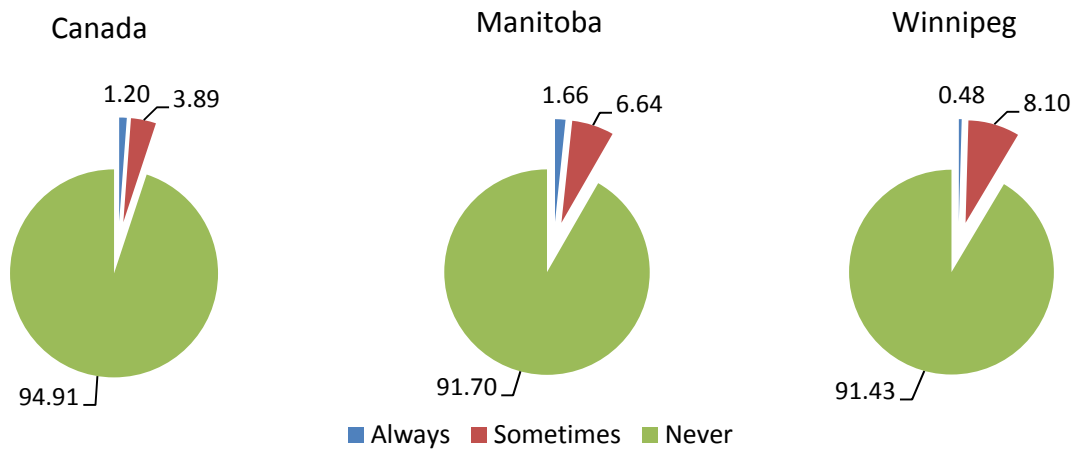


Figure 4.14 Percent of patients who had language related issues

4.6.2 Comparison with national physician survey results

The sub-scale questions adopted from the National Physician Survey (NPS) were mostly related to the use of various tools including the use of modern information technology by the physicians. Only aggregate level data were readily available so no statistical tests were conducted to compare the results.

Tables 4.16 and 4.17 present these questions for a side-by-side comparison.

Table 4.16 Physicians (in percent) who use various tools for patient care

No	Tools	Canada NPS 2010	Manitoba NPS 2010	Winnipeg 2014
1	Summary information (for follow ups)	25.9	21.1	38.1
2	Checklist (for chronic diseases)	46.2	35.7	71.4
3	Written instruction (on managing patient care at home)	20.3	23.6	76.2
4	Electronic tools (for managing chronic conditions)	27.0	24.0	86.0

It is evident from Table 4.16 that the physicians in Winnipeg in 2014 use more professional tools compared to what was being used about four years ago both in the province and across Canada. The rate of use of electronic tools has clearly seen a substantial increase – from 24% (Manitoba) in 2010 to 86% (Winnipeg) in 2014.

Table 4.17 Physicians (in percent) who use various information technology tools

No	Tools	Canada NPS 2010	Manitoba NPS 2010	Winnipeg 2014
1	Web site	17.5	13.9	36.36
2	Appointment setting via website	13.7	18.5	18.2
3	Online website on disease information, treatment and support	62.6	69.2	77.3
4	Emails to communicate with patients AND colleagues	16.3	13.6	27.3
5	Access electronic records from different locations	25.4	9.8	59.0

Regarding the use of information technology, Table 4.17 shows that the most substantial change has taken place in terms of accessing electronic records from different locations. This statistic has jumped from 9.8% (Manitoba) in 2010 to 59% (Winnipeg) in 2014. The number of clinics with their own websites has also increased almost three folds. However, only 18% of the clinics in Winnipeg allowed patients to set appointments using a web-based tool and this statistic does not appear to have improved over the last four years. The last comparison is about the percent of physicians taking in new patients. As can be seen from Figure 4.15, fewer physicians are accepting new patients now (18%) compared to 2010 when close 34% physicians in Manitoba were accepting new patients.

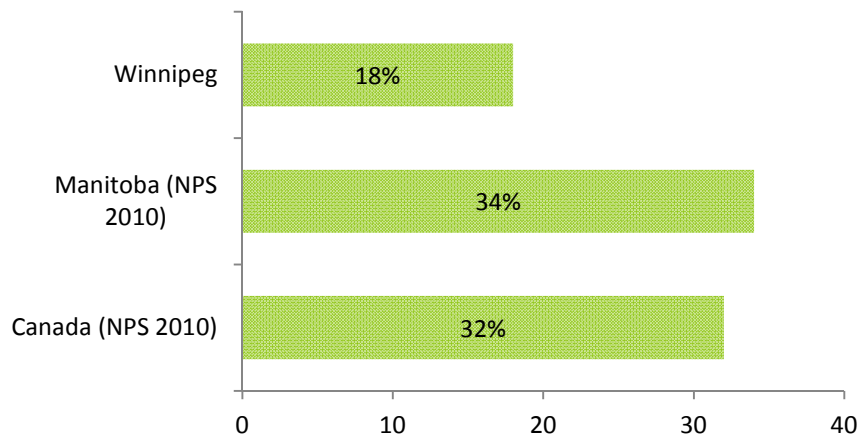


Figure 4.15 Percent of physicians accepting new patients

Chapter 5: Discussion

5.1 Introduction

This chapter will discuss the key findings of this study within the context of associated literature. It will also highlight the policy implications of those key findings when applicable.

The chapter will first discuss the results regarding the overall quality of care. Next it will pick up the three core attributes that have been found to be of concern by the patients – Access, Comprehensiveness and Technical quality of care. Findings related to the use of information technology and other tools will be discussed next. Finally, potential influence of the demographic factors on the patient perception of the overall quality of care will be discussed.

Topics mentioned above will be discussed by drawing up on both the patient and physician perspectives and national level results as appropriate.

5.2 Overall quality of care

This study has found that the patients and physicians who participated in the survey are generally happy with the overall quality of care as revealed by their better than average ratings. Approximately 87% of the patients and 100% of the physicians surveyed assigned a positive rating (“good,” “very good” or “excellent”) to the overall quality of care attribute. The median rating for the overall quality of care assigned by both patients and physicians assigned was 5 on a 1 (very poor)-6 (excellent) scale.

The overall quality of care imputed from the attribute level median ratings turned out to be the same (5=“very good”) for the physicians but one level below (4=“good”) for the patients. This latter rating is probably more reliable because it is based on detailed assessment of the underlying attributes (the patients had a chance to reflect on their attribute specific experiences).

Canadians have high opinions about the quality of healthcare they receive and the healthcare system in general. According to the Health Council of Canada [83], most adults (73%) who visited a family or general practitioner at least once in the previous 12 months reported that the quality of care they received from the primary care provider was either excellent or very good. This observation is consistent with the results presented above.

But opinions turned less favourable when patients were asked to rate the underlying attributes of the overall quality of care. Attribute level results from this study (e.g., Figures 4.1, 4.2, 4.9) suggest that patients are concerned about “Comprehensiveness,” “Technical quality of care” and “Access” aspects of the primary care system. They want to receive well-coordinated, comprehensive care supported by information technology. They also want to take a more active part in health management, especially in the management of long term chronic health issues. Patients also have a particular concern about not having timely access to healthcare (both for urgent and non-urgent purposes).

These sentiments were echoed in a Health Council of Canada report that says, “Many feel that not all health care providers offer the comprehensive, patient-centered care that they need: many patients don’t always receive explanations about test results, the side effects of medication, or information about how to change their lifestyles to prevent illness or disease.” [84]

Further, according to a report on the attributes of a high-quality healthcare, “Canada’s primary health care system lags behind those in similar Western countries in measures such as after-hours care, wait times, chronic disease management, mental health, quality improvement, and electronic medical records” [85].

Findings of this study are very much in line with such national level results. Additional commentaries are presented below on the core attributes and other characteristics of the primary care system that can significantly enhance the patient perception about the overall quality of care.

5.3 Core attributes needing additional attention

5.3.1 Access to care

Having difficulty in securing a timely appointment with a family physician is a long-standing complaint in Canada. It was noted earlier that in 2010, only 45% of Canadians could have a same or next day appointment when they needed to see a doctor. The most recent data on this was released in January of 2014 according to which, “Fewer than half of Canadians surveyed, ranging from 31% to 46%, could get a same-day or next day appointment when needed (not including ED visits)” [86]. The same source mentioned that for Manitoba, this estimate was 38%.

The results from this study regarding wait time are consistent with the national level results. About 43% of the patients reported that they were able to secure a same-day appointment when they needed to see a doctor (this is slightly better than the Manitoba statistic mentioned above and may reflect somewhat better access within the City of Winnipeg). For non-urgent visits, only 2% of the patients were able to secure a same-day appointment.

According to a 2013 report [87], Canada showed no significant improvements over the past six years on a number of factors related to access to healthcare. The report found Canadian physicians as the least likely to offer their patients same-day or next-day appointments. They were also “among the least likely to have arrangements for shared care or flexible hours to help reduce the inappropriate use of hospital emergency departments for after-hours care.”

The physicians in Canada need to play a more active role in addressing those issues in light of the ongoing initiatives in other OECD and Commonwealth countries. Long wait time is a long-standing concern among Canadians that deserves more attention from the healthcare service providers and the policy makers.

This study also asked a number of specific questions regarding issues the patients faced in the last twelve months while trying to contact the doctor's office (Table 4.3 summarizes the responses from Winnipeg alongside the responses from Manitoba and Canada). While not all the results in Table 4.3 are comparable (possible reasons being different sample size, time of survey and geographical scope), one general observation can be made – 39% of the Manitobans (CSE-PHC) and 40% Winnipeggers (this study) faced some kind of difficulty when they attempted to contact a physician or a nurse.

This particular patient concern is also reflected in the ratings provided to the sub-scale questions related to "Access." As shown in Figure 4.3, close to 33% of the actual responses to various sub-scale questions were negative ("fair" to "very poor"). In particular, over 60% of the patients reported that they had difficulty trying to speak to their doctor by phone when they had a question or needed medical advice. This view was also supported by the physicians (who generally had a very positive view about most of the core attributes) – about 36% of them indicated that patients might have had experienced such difficulties due to "busy phone lines" or "complicated phone triage." Other issues mentioned included "patients calling outside of office hours," and "patients not waiting long enough" when put in a queue.

The study has identified another linked issue based on the feedback from the physicians and previous NPS surveys. Only around 18% of the doctors in the Winnipeg area were accepting new patients in 2014; whereas 34% of the doctors in Manitoba were accepting new patients in 2010. This suggests that the physicians in Winnipeg are now dealing with more caseloads than what they used to deal with four years ago. As well, this statistic highlights the particular difficulty new patients (including new immigrants) are facing in Manitoba while trying to find a family physician. However, this comparison is subject to the limitation that it is based on a small sample of physicians and initiatives

(e.g., the Family Doctors Finder) introduced since 2010 across the province may have changed percent of doctors accepting new patients in 2014.

Given the strong evidence that people who have timely access to a regular primary care provider are less likely to use emergency rooms or to be hospitalized, and generally receive higher levels of care [88], various interventions have been suggested by healthcare experts to address such issues. These measures include establishing new quick care centres (where needed) and mobile clinics (in rural areas), providing 24/7 access to healthcare or advice (through help lines), and offering basic services through nurse practitioners. Other strategies to improve access include after-hours clinics, shifts in physician work hours and a well-functioning online appointment setting system [89]. Last but not least, the potential information gap must be addressed by ensuring that all *ad hoc* services provided to a patient are properly documented and incorporated in the patients' health records.

As well, more primary care clinics could implement the *Advanced Access* initiative introduced by Manitoba Health [90] for reengineering clinic practices so patients can see a physician or other primary care practitioner at a time and date that is convenient for them. In fact, the *Advanced Access* model, which is a comprehensive approach to effective patient care delivery, can be used to address some of the other primary care related issues identified in this study.

Having timely access to a regular source of primary healthcare would reduce hospital admissions, avert inappropriate use of emergency departments, improve patients' experience with care, and enhance their perception about the overall quality of care.

5.3.2 *Comprehensiveness*

This study focused on two key aspects of comprehensiveness of care – the primary care provider's ability to deliver a range of services to meet all of the patient healthcare needs; and assisting patients with preventive or health improvement measures (the so called whole-person care aspects).

This is a difficult attribute to assess especially for the patients as their ability to assess will be limited by their knowledge of the facility and personal experience.

This attribute has been identified as an area of improvement by the patients with a median rating of 3.5, which is less than the rating for the overall quality of care (5="very good"). The patient response was generally positive regarding the range of services being offered – 87.17% thought the service they received was good or better. This is comparable to national and provincial level statistics for Canada (94.21%) and Manitoba (93.85%) [91].

However, regarding whether they received adequate advice on preventive health management, 67% of the patients felt that they did not. This perception is consistent with the national level findings that about 78% of the Canadians and 75% of the Manitobans felt the same way [90]. Interestingly, the physician responses to these questions were in sharp contrast with the patient responses from all sources - 100% of the physician responses were on the positive side (ranged from "good" to "excellent"). It appears that physicians need to take more time to engage with their patients on a personal level and help them on with preventive health management.

Further, research shows that team-based care is one way to improve the quality of care in terms of making it more comprehensive, since teams can offer better access to a range of services, shorten wait times, and achieve better coordination of care. A team approach can also result in the delivery of more comprehensive care, particularly for people with chronic conditions [92].

5.3.3 Technical quality of care

This attribute focused on the management of long term health issues such as chronic health problems through a participatory approach or gradual patient self-management and engagement. The subscale questions probed the doctor's involvement in helping the patients understand long terms issues and pro-actively management those through education and better awareness. Such patient-

centered care improves health outcomes, and is a key component of a high-performing health care system [93].

Of all the attributes, technical quality of care received the worst median rating of 2 (“poor”) in this study. As can be seen from Figure 4.3, approximately 65% of all the patient responses related this attribute was negative. Moreover, about 40% or more of the ratings related to sub-scale questions 3 (patients advised to attend educational or awareness sessions), 4 (patients encouraged to attend support group or exercise classes) and 5 (how effective past visits with specialists had been) were “very poor.” These results are consistent with national results; in fact, for all five sub-scale questions, national level results were more critical compared to the patient response of this study.

Improving the quality of health promotion and disease prevention has been a major focus of health care reform efforts internationally since the early 1990s [94][95][96][97] and is viewed as an important part of primary care [98]. Clinical practice guidelines produced by the Canadian Task Force on Preventive Health Care recommend that primary care providers discuss healthy habits with their patients [99][100]. In 2005, the Public Health Agency of Canada released an integrated strategy for healthy living with the goal of achieving a 20% increase in the proportion of Canadians who engage in healthy eating, participate in physical activity, and have healthy weights by 2015 [101].

In 2010, the Integrated Pan-Canadian Healthy Living Strategy was strengthened through a greater focus on prevention of obesity, promotion of mental health, and prevention of injury [102]. Next year, the federal government followed this with an Integrated Strategy on Healthy Living and Chronic Disease in 2013, which is focused on healthy eating and physical activity [103].

A recent report from the Health Council of Canada [104] discusses how primary healthcare providers can better assume a support role for patients with chronic conditions. It suggests that “Self-management support can start at routine primary care visits where providers can empower patients to confidently ask questions and get involved in making decisions about their health.” The further suggests

that healthcare providers “can also improve aspects of their practice environment in order to better serve patients with chronic conditions. Making better use of all members of a health care team can ease time pressures on physicians and provide patients with the expertise and coaching they need.”

In summary, the initiatives and guidance discussed above in conjunction with the study suggest that Manitoba could use appropriate policy tools to motivate primary care physicians to actively seek patient feedback on the quality of care provided by their clinics and take appropriate actions.

Improving quality of care “with the patients and for the patients” is a shared responsibility and the regional and provincial authorities could promote such initiatives as has been done in other provinces in Canada. For example, the newly created *Primary Care Patient Experience Survey* introduced by Health Quality Ontario [105] is an evidence-based tool designed to develop an understanding of patients’ experiences of care as part of their annual Quality Improvement Plans (QIPs). Economic incentives have also been used to encourage the physicians to address some of the underlying issues. Ontario physicians in some practice models are financially rewarded if their patients meet certain quality of care targets. In British Columbia, the General Practices Services Committee— a partnership between the BC Medical Association and BC Ministry of Health – had used financial incentives for chronic illness management and changes to billing codes to encourage telephone and email consultation with patients [106].

Patient centered quality of care assessment is an important approach that several Canadian provinces are already benefiting from and it is an opportunity for Manitoba to incorporate this approach in future healthcare reforms.

5.4 Use of information technology and other tools

Given that we live in an information era, there is an expectation that the primary care providers would use modern technology to their advantage and provide more timely and efficient services to their clients. With this in mind, a range of information technology related questions were presented to the physicians who participated in the survey.

The results appear to be mixed: about 95% of the clinics use electronic tools for record keeping (internally) but 59% of the clinics have access to electronic medical records (EMRs) through a network. The use of EMRs has nearly doubled since 2006, with 57% of Canada's primary care physicians now using computerized patient charts (ranging from 26% to 74% across provinces). Manitoba appears to be slightly ahead of the national average in this regard [107].

Less impressive is the fact that 36% of the clinics have their own website and only 18% allow web-based online appointment setting. The last two statistics need to be improved given that hand-held mobile devices have become commonplace and the younger generation expect to do most of their business through apps installed on their cell phones and other mobile devices.

In terms of the use of professional tools (e.g., software) for patient care, the situation appears to have improved significantly since the NPS survey of 2010: presently 86% of the primary care providers use electronic tools for patient care (especially for managing chronic conditions); this rate was 27% for Canada and 24% for Manitoba in 2010. Similar improvements can be seen for other tools such as summary notes, checklist and written instructions as shown in Table 4.16.

The adoption of information technology in Canadian primary care settings has grown significantly in the past ten years, although with large variations among provinces. In a 2010 report, the Health Council of Canada highlighted electronic health and medical records as essential tools to facilitate decision-making by physicians [108]. Manitoba has made some good progress in this area but it needs to do more in terms of using web-based tools. However, the uptake of new information technology for

health management is likely to be a slow process because it involves significant investments in procuring new tools and training staff, and ensuring the security of confidential patient information.

5.5 Influence of demographic factors

This study tested the potential influence of seven demographic factors: age, gender, employment, income, education, residence type, residence location (within or outside the City of Winnipeg), and status of general health on the perception of the overall quality of care. Based on an ordinal logistic regression analysis, two of those factors, the level of education and the status of general health, were found to be statistically significant. Moreover, people with higher education appeared to be more critical and so were people with a poor general status of health.

The results seem to make sense – people who are more educated (and have higher income) are likely to have higher expectations about the quality of care and the range of services provided through the primary care system. They are also likely to be more aware of the services offered in other provinces or countries. Similarly, people who are in good health would make only occasional visits to the primary care clinics and would have no major concerns other than the long wait time. People with multiple chronic diseases, however, would require a lot of support from the healthcare system and would likely have had experienced more difficulties in the process and the end result would be poorer ratings for the overall quality of care.

In a recent study on the mediating effect of patient satisfaction in the patients' perceptions of healthcare quality, Alrubaiee and Alkaa'ida [109] provided a comprehensive summary of past studies on the effects of socio-demographic characteristics on the perception of care. Quoting Naidu [110], they noted that, “Socio-demographic variables showing positive association with patient satisfaction Include: age; education; health status; race; marital status; and social class.” Alrubaiee and Alkaa'ida [107] further mentioned that, “Individual factors positively associated with patient satisfaction are health

status and education. Younger, less educated, lower ranking, married, poorer health and high-service use were associated with lower satisfaction.”

However, such results are not consistent across different studies and sometimes may be contradictory. One finding that has been supported consistently is that older patients tend to report higher levels of satisfaction than do younger ones [111]. Nguyen Thi et al. found that men tended to be more satisfied than women and women tended to complain more often than men do [112]. Priporas et al. found that males and young patient tend to rate satisfaction a little higher than females and older patients [113].

It is difficult to draw general conclusions from the past studies. This study did not find age, gender or income to be statistically significant in terms of their association with the rating for quality of care. Regarding education, the conclusion of this study contradicts previous findings. On the other hand, the positive association between the status of health and the rating for quality of care is supported by the results of this study.

The potential influence of demographic factors is likely to be affected by the socio-economic and cultural contexts of the population being surveyed. In this study, only education and status of health appeared to be statistically associated with the quality of care. It is possible that this conclusion would change if the demographic profile of the sample was changed or if it focused on a particular segment of the population such as the First Nations or the new immigrants.

5.6 Study limitations

The key findings of this study are based on the data collected from the primary care clinics located within the City of Winnipeg. Thus, the results may not be representative of the views of rural and northern communities.

Only a limited number of physicians participated in this study, which was a major challenge for the researcher. Views expressed by this group may not be representative of the wider community of physicians who practice in Manitoba.

Also, the gap between the patient and physician perceptions regarding some aspects of the overall quality of care may have been exacerbated due to the fact that it was not possible to match the individual physicians to their respective patients.

Comparison with national results was less reliable because the latter had a wider geographical scope, used much bigger samples, and was conducted several years ago. As such, results from the comparisons should be treated as indicative and should not be used to make generalized conclusions.

Chapter 6: Conclusions

6.0 Introduction

This study has generated policy relevant observations and conclusions that can be used to enhance the quality of healthcare delivered through the primary healthcare clinics in Manitoba. This section will summarize such key observations and conclusions.

This chapter will first present the key conclusions regarding the relative performance of the overall quality of care and its seven core attributes, which will be followed by conclusions drawn from patient and physician responses to specific questions. Next, conclusions from Mann-Whitney *U*-tests regarding how similar or different the perceptions of the patients and physicians are will be mentioned. This section will also cover the potential influence of demographic factors on the perception of care. The last set of conclusions will be drawn from the comparison of the results of this study with the previously conducted national level surveys such as CSE-PHC and NPS.

This chapter will end with a number of recommendations for future studies and an outline of how knowledge generated through this study will be shared.

6.1 Overall Quality Care and its attributes

This study has found that the patients and physicians affiliated to the primary care clinics in Winnipeg are generally happy with the overall quality of care as revealed by their better than average ratings. Approximately 87% of the patients and 100% of the physicians assigned a positive rating (“good,” “very good” or “excellent”) to the overall quality of care attribute.

Of the seven core attributes, “Comprehensiveness” and “Technical Quality of Care” were rated poorly by the patients. These are also the two core attributes for which the patient and physician responses differed most visibly. Based on the sub-scale level counts, 40% of the ratings for “Comprehensiveness” assigned by the patients were negative (“fair,” “poor” or “very poor”) compared

to 0% negative ratings assigned by the physicians. Also, 65% of the patient ratings for “Technical quality of care” were negative compared to the 29% negative ratings from the physicians.

These discrepancies indicate the need for an in-depth investigation of these attributes because enhancing the service quality related to these attributes could significantly enhance the outcome of care as well as the patient perception about the quality of care. Specific areas of enhancement may include: being more involved when patients are seeing specialists or are hospitalized, providing advice on how to improve and maintain good health, and helping them with long-term, preventive health management.

The patients also had concerns about some aspects of “Access” – about a third of the patient ratings for “Access” were negative compared to about 14% of the physician responses being negative. This was due to the difficulty reaching the doctor’s office by phone and the relatively long wait-time for both urgent and non-urgent visits.

In general, the physicians seemed to have a better perception about the overall quality of care and its attributes (as expressed by the median ratings assigned to those attributes), and therefore about the quality of primary care in Manitoba, compared to the patients.

6.2 Conclusions from specific comments

The patients and physicians seemed to have different perceptions about the average wait-time for both urgent and non-urgent visits. About 43% of the patients reported that they were able to secure a same-day appointment when they needed to see a doctor urgently. In contrast, 82% of the physicians surveyed thought that patients were able to get a same-day appointment for urgent reasons.

For non-urgent visits, only 2% of the patients were able to secure a same-day appointment whereas the physicians thought 18% of the patients got a same-day appointment. National level data regarding average wait-time were found to be similar to the patient perception identified in this study.

Both patients and physicians recognized that patients face a variety of difficulties while trying to contact the doctor's office. The most common issue was dealing with a "complicated phone triage," which meant waiting too long on the phone or not being able to get through to the doctor, among others.

On the positive side, over 95% of the patients said they never had any language barrier in terms of explaining their health concerns and 91% said they never had difficulty understanding their physician's instructions and advice.

The physicians surveyed provided a number of feedbacks regarding the use of information technology and other tools for better case management. Specifically, they report that 59% of the clinics had access to electronic medical records (EMRs); 45% of the clinics had electronic interface to access external systems for accessing or sharing patient information; 36% had websites; and only 18% had provision for making online appointment.

The physicians were also asked whether they were taking in new patients and only 18% of them said yes; this implies that 82% of the physicians are not accepting new patients.

6.3 Conclusions from statistical analysis

This study used Mann-Whitney *U*-test to compare patient and physician ratings for the overall quality of care and its attributes. It was concluded that the ratings were not significantly different for the overall quality of care. But the patient and physician ratings turned out to be statistically different for "Access," "Comprehensiveness," and "Technical quality of care."

The study used an ordinal logistic regression model to test the potential influence of various demographic factors on the perception of the overall quality of care. Of the seven factors included in the model, the level of education and the status of general health were found to be statistically significant.

Specifically, people with higher educational level appeared to be more critical (gave poorer ratings) and people with better health appeared to be less critical.

6.4 National level comparisons

For a select number of subs-scale questions, results from national level surveys have been compared with the corresponding study results. For most of the cases, the results from this study turned out to be statistically different from the national level results (based on Mann-Whitney *U*-test). This is not unexpected given that the CSE-PHC survey was conducted about six years ago and had a different geographic scope.

Despite that, the ratings for the overall quality of care were found to be statistically similar, which is consistent with the observation that about 85% of the respondents (patients) from Canada, Manitoba and Winnipeg indicated that they were “generally,” “almost always” or “always” satisfied with the overall quality of care. National results also indicated that the patients had concerns about aspects of “Comprehensiveness” and “Technical quality of care,” which is consistent with the observations of this study.

When physician responses from this study were compared with the results from the NPS 2010 survey, significant improvements were noted in terms of the use of checklist (from 46% to 71%), written instructions (24% to 76%), and electronic tools (from 27% to 86%).

6.5 Future research directions

This study has identified three areas of improvement – “Comprehensiveness,” “Technical quality of care,” and “Access.” Future studies can be focused on identifying specific opportunities for improvement in these areas based on new survey and review of initiatives in other Canadian provinces or abroad (say in other OECD countries).

This study focused only on family care clinics with which a patient had an affiliation for one year or more. Due to the longer wait-time for non-urgent appointments, patients often go to walk-in clinics for immediate relief from common ailments. Future studies could investigate how to “confront” physicians with their patients’ perceptions and to see if this results in some objective measure of improvement..

This study collected responses from only urban clinics located within the City of Winnipeg. A future study could examine the quality of care delivered through the rural health centres and compare that with the findings of this study. The impact of clinic size and type can also be an interesting topic to explore.

The patients who participated in this study were representative of the population of Manitoba (adjusted for their visitation pattern). However, segments of the population such as immigrants and members of the First Nations may experience some issues on a regular basis that would not be captured in this study. Thus, a future study could focus on a particular population sub-group to identify such issues. If specific interventions (e.g., public engagement or health literacy education) were introduced, future studies could also look at the impact of such interventions on the gap between specific experiences.

6.6 Knowledge translation activities

knowledge translation (KT) is defined as a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically-sound application of knowledge to improve the health of Canadians, provide more effective health services and products, and strengthen the healthcare system [114].

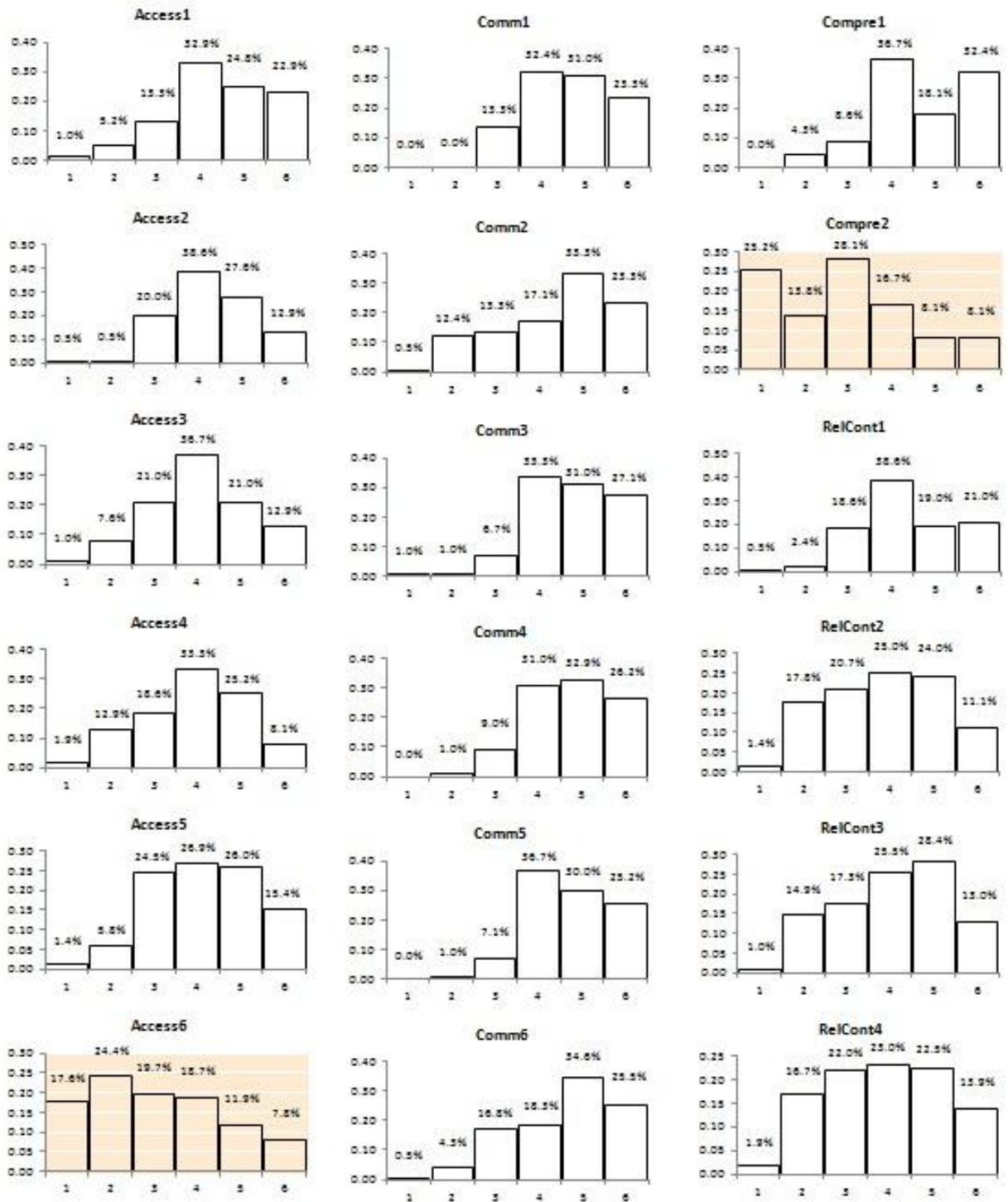
The primary knowledge outputs from this study will be a Master of Science Thesis. It is anticipated that a number of research papers will be prepared and shared at professional forums

attended by academics as well as policy makers. The preliminary results have already been shared at the 2014 Canadian Association for Health Services and Policy Research (CAHSPR) conference. It is anticipated that the final results will be published in a referred journal of significant professional impact.

In the spirit of participatory learning and performance improvements, key research outputs will be shared with the participating clinics.

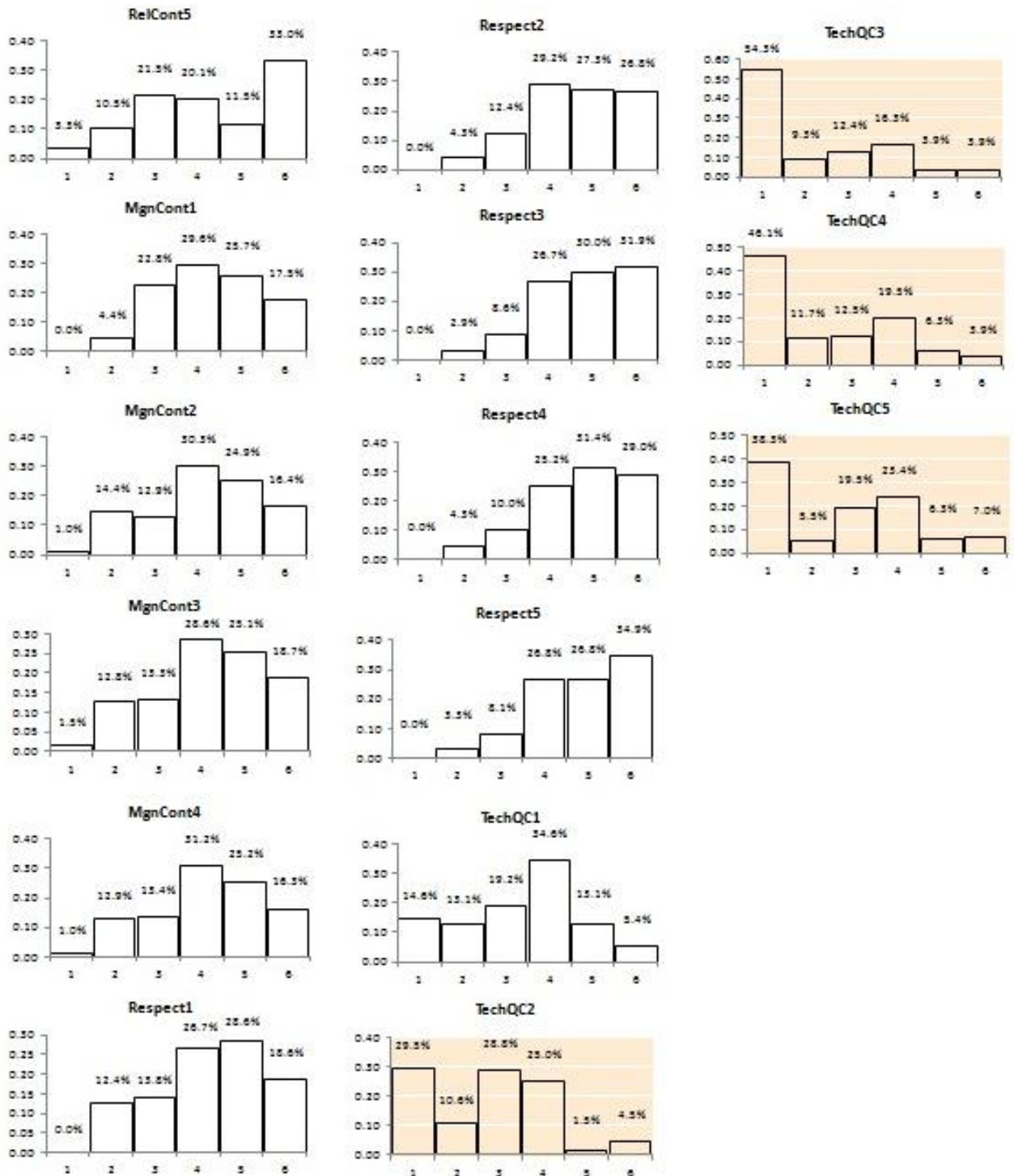
Finally, important policy implications presented in the previous chapter (Discussion) will be communicated with the policy makers by way of sharing research papers and giving seminars as and when the opportunities arise.

Appendix 1:
Figure 1a Frequency histograms for sub-scale questions.



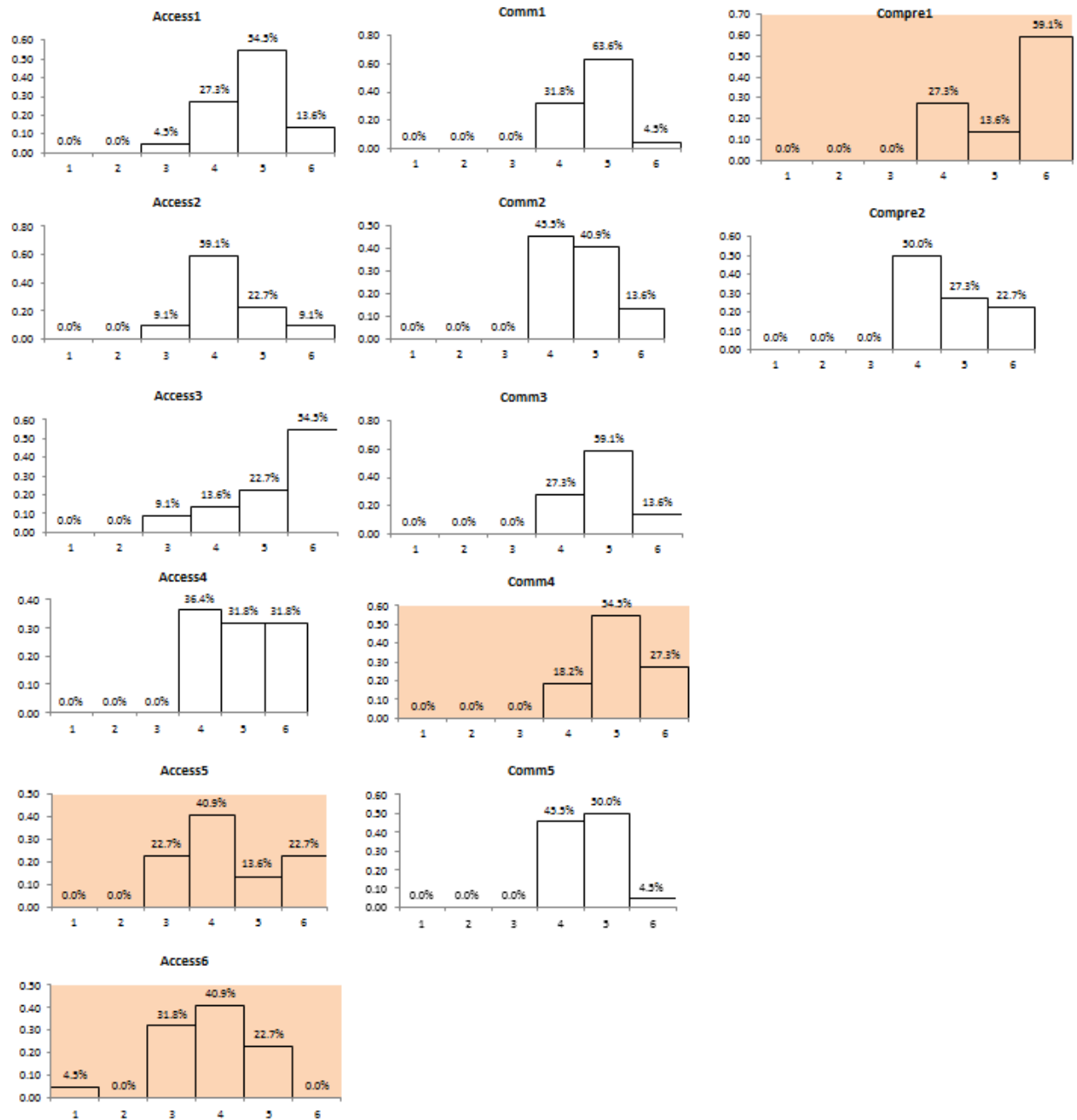
Legend: 1=Very poor; 2=Poor; 3=Fair; 4=Good; 5=Very good; 6=Excellent.

Figure 1b Frequency histograms for sub-scale questions.



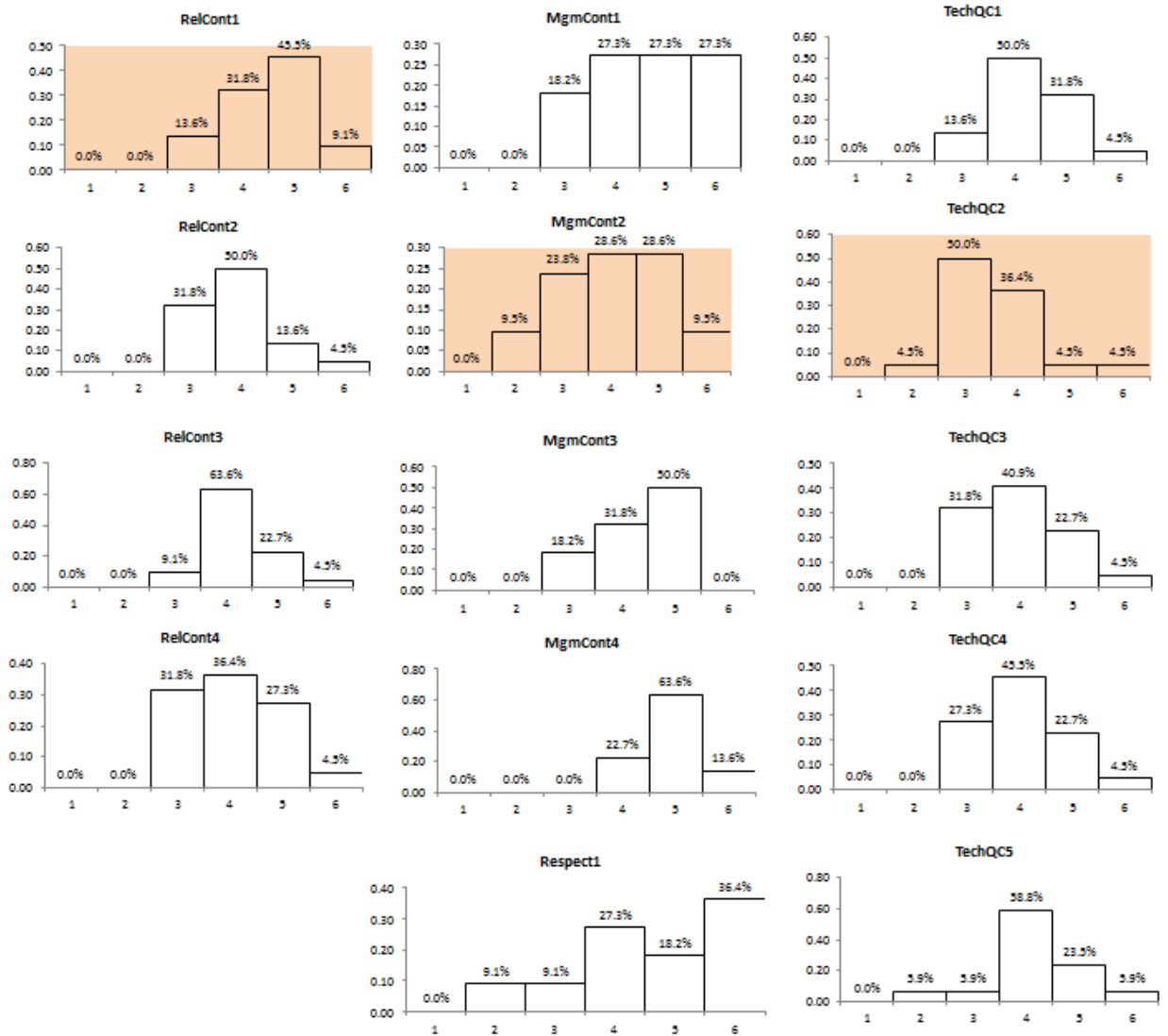
Legend: 1=Very poor; 2=Poor; 3=Fair; 4=Good; 5=Very good; 6=Excellent.

**Appendix 2:
Figure 2a Frequency histograms for sub-scale questions.**



Legend: 1=Very poor; 2=Poor; 3=Fair; 4=Good; 5=Very good; 6=Excellent.

Figure 2b Frequency histograms for sub-scale questions.



Legend: 1=Very poor; 2=Poor; 3=Fair; 4=Good; 5=Very good; 6=Excellent.

**Appendix 3:
Questionnaire for patients**

Date: --/ --/ 2013

Record number: _____

Questionnaire for the " **Quality of Care in Primary Healthcare Clinics in Manitoba: A Comparative Study**" – Patient Survey.

- Please check the box on the left to indicate that you have read the attached Informed Consent Form and agreed to voluntarily participate in this study.

Important notes for respondents

For each question, circle the most appropriate option, or write in your answer on the line provided. Please answer every question (unless you are asked to skip questions because they don't apply). When you finish completing the questionnaire, please return it to the investigator.

Part A: Attributes of Quality of Care

1. Accessibility

No	Questions for patients	1= <i>Very poor</i>	2= Poor	3= Fair	4= Good	5= Very Good	6= Excellent
1	How would you rate the convenience of your regular doctor's office location ?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
2	How would you rate the hours that your doctor's office is open for medical appointments?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
3	How would you rate the usual wait for an appointment when you are sick and call the doctor's office asking to be seen?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
4	How would you rate the amount of time you wait at your doctor's office for your appointment to start?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
5	Thinking about the times you needed to see or talk to your doctor, how would you rate the ability to get through to the <u>doctor's office</u> by phone ?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
6	Thinking about the times you needed to see or	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

	talk to your doctor, how would you rate the ability to speak to your doctor by phone when you have a question or need medical advice?						
--	--	--	--	--	--	--	--

No	Questions for patients
7	<p>Typically if you contacted your regular doctor's office, how long did you have to wait until the first available appointment with your doctor?</p> <p>Urgent:</p> <p><input type="checkbox"/> Same day</p> <p><input type="checkbox"/> More than a day (indicate number of days) ____</p> <p>Non-urgent:</p> <p><input type="checkbox"/> Same day</p> <p><input type="checkbox"/> Same week</p> <p><input type="checkbox"/> More than a week (indicate number of days) ____</p>
8	<p>In the last 12 months, what type of difficulties did you experience when you tried to contact your doctor's office (you may select more than one choice from the list below)?</p> <p>1= Faced difficulty contacting a physician or nurse,</p> <p>2= Did not have a phone number handy</p> <p>3= Could not get through (i.e., no answer)</p> <p>4= Waited too long to speak to someone</p> <p>5= Did not get adequate info or advice</p> <p>6= Other (please specify): _____</p>

2. Interpersonal communication

No	Questions for patients	1=Ver y poor	2= Poor	3= Fair	4= Good	5= Very Good	6= Excellent
1	Thinking about Talking with your regular doctor: how would you rate the thoroughness of your doctor's questions about your symptoms and how you are feeling?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
2	How would you rate the amount of time your family physician (or general practitioner) allows you to discuss your feelings, fears and concerns about your health?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

3	How would you rate doctor's explanations of your health problems or treatments that you need?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
4	How would you rate doctor's instructions about symptoms to report and when to seek further care?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
5	How would you rate the doctor's advice and help in making decisions about your care?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
		1= never	2= very seldom	3= seldom	4= occasionally	5= often	6= very often
6	How often do you leave your doctor's office with unanswered questions ?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

No	Questions for patients
7	What is your primary language: <input type="checkbox"/> English <input type="checkbox"/> French <input type="checkbox"/> Other (specify) _____
8	Do you face any language related problems in terms of explaining your health concerns? <input type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never
9	Do you face any language related problems in terms of understanding your doctor's explanations, instructions and advice? <input type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never

3. Comprehensiveness

No	Questions for patients	1= strongly disagree	2= disagree	3= agree	4= strongly agree
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1	Please tell me the extent to which you agree or disagree with the following statements: <i>Your primary care provider delivers a range of services that meets most or all of your primary health care needs.</i>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
		1= never	2= some- times	3= usually	4= always
2	In last 12 months, how often did you talk with your physician about specific things you could do to improve health or prevent illness such as smoking cessation, limiting alcohol consumption and exercise?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>

4. Relational continuity

No	Questions for patients	1=Ver y poor	2= Poor	3= Fair	4= Good	5= Very Good	6= Excellent
1	Thinking about how well your doctor knows you: How would you rate doctor's knowledge of your entire medical history ?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
2	How would you, rate doctor's knowledge of your responsibilities at work or home ?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
3	How would you rate doctor's knowledge of what worries you most about your health?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
4	How would rate doctor's knowledge of you as a person (your values and beliefs)?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
		1= never	2= someti mes	3= Usually	4= always		
5	When you go to your primary care provider, you are taken care of by the same doctor or nurse each time? <i>1=never. 2=sometimes, 3=usually, 4=always</i>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>		

5. Management continuity

No	Questions for patients	1= <i>Very poor</i>	2= Poor	3= Fair	4= Good	5= Very Good	6= Excellent
1	How would you rate the help your regular doctor gave you in getting an appointment for speciality care you needed?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
2	How would you rate regular doctor's involvement in your care when you were being treated by a specialist or were hospitalized?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
3	How would you rate regular doctor's communication with specialists or other doctors who saw you?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
4	How would you rate the help your regular doctor gave you in understanding what the specialists or other doctor said about you?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

6. Respectfulness

No	Questions for patients	1= <i>Very poor</i>	2= Poor	3= Fair	4= Good	5= Very Good	6= Excellent
1	How would you rate the amount of time your doctor spends with you?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
2	How would you rate doctor's patience with your questions or worries?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
3	How would rate doctor's friendliness and warmth towards you?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
4	How would you rate doctor's caring and concern for you?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
5	How would you rate doctor's respect for you?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

7. Technical quality of clinical care

If you do not have any chronic health issues, please skip this section and go to Question number 8.

No	Questions for patients	1= <i>Never</i>	2= <i>Almost never</i>	3= <i>Generally not</i>	4= <i>Usually</i>	5= <i>Almost always</i>	6= <i>Always</i>
1	In the past 12 months, were you asked to talk about your goals in caring for your chronic condition?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
2	In the past 12 months, were you given a written list of things you should do to improve your health?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
3	In the past 12 months, were you encouraged to go to a specific group or class such as an education seminar to help cope with your chronic condition?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
4	In the past 12 months, were you encouraged to attend programs in the community such as support groups or exercise classes that could help you?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
5	In the past 12 months were you told how your visits with other types of doctors (e.g., specialist or surgeon) helped your treatment?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

8. Overall quality of care

All things considered, how **satisfied** are you as a patient with the overall quality of care provided by your family physician (please choose **ONLY ONE**):

1= Very poor	2= Poor	3= Fair	4= Good	5= Very Good	6= Excellent
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

Part B: Demographic and socio-economic questions

Please circle the appropriate response.

1. Please indicate your age group below:
 1. 18 - 29
 2. 30 - 44
 3. 45 - 59
 4. 60 - 75
 5. 75+
2. Please indicate your gender:
 1. Female
 2. Male
3. Please indicate your employment status:
 1. Employed (full- or part-time)
 2. Not employed
4. Approximately what was the total income of your household last year before taxes?
 1. Less than \$ 20,000
 2. \$20,000 to \$39,999
 3. \$40,000 to \$59,999
 4. \$60,000 to \$79,999
 5. \$80,000 or more
5. What is the highest level of formal education you have completed?
 1. Did not finish high school
 2. Got a high school diploma or Graduate Equivalency Diploma (GED)
 3. Have a post-secondary degree or diploma
 4. Have a Masters or higher level degree
6. You presently live in:
 1. A rented apartment, condo or house
 2. A house owned by you or your spouse
 3. Live with parents
 4. Other (please specify): _____
7. Do you presently live within the City of Winnipeg or outside?
 1. Within the city
 2. Outside the city
8. In general, how would you describe your health status:
 1. Excellent
 2. Good
 3. Average
 4. Poor
 5. Very poor

Thank you very much for participating in this survey!

**Appendix 4:
Questionnaire for physicians**

Date: --/ --/ 2013

Record number: _____

Questionnaire for the " **Quality of Care in Primary Healthcare Clinics in Manitoba: A Comparative Study**" – Physician Survey.

- Please check the box on the left to indicate that you have read the attached Informed Consent Form and agreed to voluntarily participate in this study.

Important notes for respondents

For each question, circle the most appropriate option, or write in your answer on the line provided. Please answer every question (unless you are asked to skip questions because they don't apply). When you finish completing the questionnaire, please return it to the investigator.

Part A: Attributes of quality of care

1. Accessibility

Definition: *The ease with which a person can obtain needed care (including advice and support) from the practitioner of choice within a time frame appropriate to the urgency of the problem.*

No	Questions for patients	1= <i>Very poor</i>	2= Poor	3= Fair	4= Good	5= Very Good	6= Excellent
1	How convenient is your office (clinic) location to your patients?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
2	How would you rate the hours that your office (clinic) is open for medical appointments?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
3	How would you rate the usual wait for an appointment when your patients are sick and call your office asking to be seen?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
4	How would you rate the amount of time your patients wait at your office for their appointments to start?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
5	Thinking about the times your patients needed	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

	to see or talk to you (doctor), how would you rate the ability of your patient to get through to your office by phone ?						
6	Thinking about the times your patients needed to see or talk to you (doctor), how would you rate the ability of your patients to speak to you (doctor) by phone when they have a question or need medical advice?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

No	Questions for physicians
7	<p>Typically if a patient contacts your office or is referred to you, how long would that patient wait until the first available appointment with you or your practice?</p> <p>Urgent:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Same day <input type="checkbox"/> More than a day (indicate number of days) ____ <p>Non-urgent:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Same day <input type="checkbox"/> Same week <input type="checkbox"/> More than a week (indicate number of days) ____
8	<p>In the last 12 months, what difficulties have your patients experienced while trying to contact your office?</p> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p> <p>4. _____</p>

2. Interpersonal communication

Definition: *The ability of the provider to elicit and understand patient concerns, to explain healthcare issues and engage in shared decision-making, if desired.*

No	Questions for patients	1= <i>Very poor</i>	2= Poor	3= Fair	4= Good	5=Very Good	6= Excellent
1	Thinking about Talking with your patients: How would you rate the thoroughness of your questions about patients' symptoms and how they are feeling?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
2	How would you rate the amount of time you (doctor) allow your patients to discuss their feelings, fears and concerns about their health?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
3	How would you rate the explanations provided by you of your patients' health problems or treatments that they need?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
4	How would you rate your instructions about symptoms to report and when to seek further care?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
5	How would you rate your advice and help in making decisions about your patients' care?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

No	Questions for physicians
6	What languages do you speak with your patients? Check all that apply. <input type="checkbox"/> English <input type="checkbox"/> French <input type="checkbox"/> Other (specify) _____
7	Do you face any language related problems while seeing your patients in terms of understanding their health concerns or providing explanations, instructions and advice to your patients? <input type="checkbox"/> Always <input type="checkbox"/> Sometimes <input type="checkbox"/> Never

3. Comprehensiveness

Definition: *The provision, either directly or indirectly, of a full range of services to meet patients' healthcare needs. This includes health promotion, prevention, diagnosis and treatment of common conditions, referral to other providers, management of chronic conditions, rehabilitation, palliative care immunization and, in some models, social services.*

No	Questions for patients	1= <i>strongly disagree</i>	2= <i>disagree</i>	3= <i>agree</i>	4= <i>strongly agree</i>
1	Please tell me the extent to which you agree or disagree with the following statements: <i>you help your patients receive a range of services that meets most or all of their primary health care needs.</i>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>
		1= never	2= sometime s	3= usuall y	4= always
2	In last 12 months, how often did you talk with your patients about specific things they could do to improve their health or prevent illness such as smoking cessation, limiting alcohol consumption and exercise?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>

No	Questions for physicians
3	Please indicate which of the following services are offered at this primary health care clinic? <ul style="list-style-type: none"> <input type="checkbox"/> Immunization (Shots) <input type="checkbox"/> Family planning or birth control methods <input type="checkbox"/> Counselling on the management of chronic health problems <input type="checkbox"/> Advice on diet and nutrition provided by a dietician <input type="checkbox"/> Other (please specify): _____

4. Relational continuity

Definition: *A therapeutic relationship between a patient and one or more providers that spans various healthcare events and results in accumulated knowledge of the patient and care consistent with the patient's needs.*

No	Questions for patients	1= <i>Very poor</i>	2= Poor	3= Fair	4= Good	5= Very Good	6= Excellent
1	Thinking about how well you know your patients: how would you rate your knowledge of your patients' entire medical history?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
2	How would you, rate your knowledge of your patients' responsibilities at work or home ?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
3	How would you rate your knowledge of what worries your patients most about their health?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
4	How would rate your knowledge of your patients on a personal level (e.g., being aware of their values and beliefs)?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

No	Questions for physicians
5	Are you accepting new patients who are looking for a primary health care provider (e.g., for a family physician)? <input type="checkbox"/> YES <input type="checkbox"/> NO

5. Management continuity

Definition: *The delivery of services by different providers in a timely and complementary manner such that care is connected and coherent.*

No	Questions for patients	1= <i>Very poor</i>	2= Poor	3= Fair	4= Good	5= Very Good	6= Excellent
1	How would you rate the help you provided to your patients in getting an appointment for speciality care they needed?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
2	How would you rate your involvement in the care of your patients when they were being treated by a specialist or were hospitalized ?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
3	How would you rate your communication with specialists or other doctors who saw your patients?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
4	How would you rate the help you provided to your patients in understanding what the specialists or other doctor said about your patients?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

6. Respectfulness

Definition: *The extent to which health professionals and support staff meet users' expectations about interpersonal treatment, demonstrate respect for the dignity of patients and provide adequate privacy.*

No	Questions for patients	1= <i>Very poor</i>	2= Poor	3= Fair	4= Good	5= Very Good	6= Excellent
1	Thinking about the personal aspects of the care you provide to your patients: how would you rate the amount of time you spend with your patients?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

7. Technical quality of clinical care

Definition: *Accuracy and timeliness for effective management of acute and chronic diseases (this is a proposed definition).*

No	Questions for patients	1= Never	2= Almost never	3= Generally not	4= Usually	5= Almost always	6= Always
1	In the past 12 months, have you asked your patients to talk about their goals in caring for their chronic conditions?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
2	In the past 12 months, have you given a written list of things your patients should do to improve their health?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
3	In the past 12 months, have you encouraged your patients to go to a specific group or class such as an education seminar to help cope with their chronic conditions?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
4	In the past 12 months, have you encouraged your patients to attend programs in the community such as support groups or exercise classes that could help your patients?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
5	In the past 12 months have you told how your patients' visits with other types of doctors (e.g., specialist or surgeon) helped their (patients') treatment?	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

Specific questions on technical quality of clinical care

No	Questions for physicians
6	<p>Do your use the following tools or methods?</p> <p>Summary information on patient population with chronic diseases (e.g., percent of diabetes patients due for eye exam)</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p> <p>Flow sheet or checklist for chronic diseases</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p> <p>Written instructions for the patients with chronic disease to help manage their own care at home</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p> <p>Electronic tools for recording and managing patients' chronic conditions (such as EMR, Web sites, Online CDM forms or programs)</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p>

8. Use of information technology (this is an additional attribute included only in the questionnaire for the physicians)

Definition: *Use of information technology for storing, retrieving and sharing patient information among health care provider.*

No	Questions for physicians
1	<p>Your practice (clinic) have web site:</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p>
2	<p>Patient can contact office to request an appointment through your websites:</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p>
3	<p>Refer patients to websites for disease information, treatment information, and patient support:</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p>

4	<p>Use email for communication with the colleagues and patients for both clinical and other purposes:</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p>
5	<p>Record keeping systems in your settings (use paper charts, combination of paper and electronic, only electronic records)</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p>
6	<p>Access electronic records in various locations (are the records in these locations electronically connected to each other to allow for access of the same electronic record from different settings)</p> <p><input type="checkbox"/> YES</p> <p><input type="checkbox"/> NO</p>
7	<p>Use or plan to use the following:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Electronic appointment/scheduling system <input type="checkbox"/> Billing system <input type="checkbox"/> Clinical patient notes entry/retrieval system <input type="checkbox"/> Electronic reminders for recommended patient care <input type="checkbox"/> Electronic warning for adverse side effects from prescription drugs Electronic interface to external pharmacy/pharmacist <input type="checkbox"/> Electronic interface to external laboratory/diagnosis imaging <input type="checkbox"/> Electronic interface to other external systems for accessing or sharing patient information <input type="checkbox"/> Online access to journals and other medical data bases <input type="checkbox"/> Email <input type="checkbox"/> Online CME <input type="checkbox"/> Online discussion forums with other physicians for professional purposes <input type="checkbox"/> Online disease management tools

9. Overall quality of care

Definition: This is an *overall assessment of quality of care taking into account the seven attributes considered above (accessibility, interpersonal communication, comprehensiveness of services, relational continuity, managerial continuity, respectfulness, and technical quality of clinical care).*

All things considered, how would you rate the overall quality of healthcare provided through the clinic where you provide your services:

1= Very poor	2=Poor	3= Fair	4=Good	5=Very Good	6=Excellent
1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

Part B: Background questions

Please circle the appropriate response.

3. Please indicate your age group below:

- 6. 25 - 44
- 7. 45 - 54
- 8. 55 - 64
- 9. 65+

4. Please indicate your gender:

- 4. Female
- 5. Male

6. Please indicate where you received your medical degree:

- 3. At a Canadian or US medical school
- 4. At a European medical school
- 5. Other than above

9. Approximately how many patients do you see each week?


- 6. Less than 100
- 7. 100 – less than 150
- 8. 150 – less than 200
- 9. More than 200

10. For how many years have you been serving as a physician in Manitoba?

- 5. Less than a year
- 6. 1 – less than 5 years
- 7. 5 – less than 10 years
- 8. More than 10 years

Thank you very much for participating in this survey!

Appendix 5: Ethics Board Approval Form

 UNIVERSITY OF MANITOBA	BANNATYNE CAMPUS Research Ethics Boards HEALTH RESEARCH ETHICS BOARD (HREB) CERTIFICATE OF FINAL APPROVAL FOR NEW STUDIES Full Board Review	P126 - 770 Bannatyne Avenue Winnipeg, Manitoba Canada R3E 0W3 Telephone 204-789-3255 Fax 204-789-3414
PRINCIPAL INVESTIGATOR: Ms. S. Parveen	INSTITUTION/DEPARTMENT: UofM / Community Health Sciences	ETHICS #: HS16315 (H2013:115)
HREB MEETING DATE: March 25, 2013	APPROVAL DATE: May 10, 2013	EXPIRY DATE: March 25, 2014
STUDENT PRINCIPAL INVESTIGATOR SUPERVISOR (If applicable): Dr. A. Katz		
PROTOCOL NUMBER: NA	PROJECT OR PROTOCOL TITLE: Quality of Care in Primary Healthcare Clinics in Manitoba: A Comparative Study	
SPONSORING AGENCIES AND/OR COORDINATING GROUPS: NA		
Submission Date(s) of Investigator Documents: March 10 and May 9, 2013		REB Receipt Date(s) of Documents: March 11 and May 9, 2013
THE FOLLOWING ARE APPROVED FOR USE:		
Document Name	Version(if applicable)	Date
Protocol:		
Proposal		March 10, 2013
Consent and Assent Form(s):		
Research Participant Information and Consent Form For Physician	3	May 13, 2013
Research Participant Information and Consent Form For Patients	2	May 8, 2013
Other:		
Patient Survey	2	May 8, 2013
Physician Survey	2	May 8, 2013
Permission to conduct an onsite survey	1	3/11/2013
CERTIFICATION The University of Manitoba (UM) Health Research Board (HREB) has reviewed the research study/project named on this Certificate of Final Approval at the full board meeting date noted above and was found to be acceptable on ethical grounds for research involving human participants. The study/project and documents listed above was granted final approval by the Chair or Acting Chair, UM HREB.		
HREB ATTESTATION The University of Manitoba (UM) Health Research Board (HREB) is organized and operates according to Health Canada/ICH Good Clinical Practices, Tri-Council Policy Statement 2, and the applicable laws and regulations of Manitoba. In respect to clinical trials, the HREB complies with the membership requirements for Research Ethics Boards defined in		
- 1 -		
www.umanitoba.ca/faculties/medicine/ethics		

Division 5 of the Food and Drug Regulations of Canada and carries out its functions in a manner consistent with Good Clinical Practices.

QUALITY ASSURANCE

The University of Manitoba Research Quality Management Office may request to review research documentation from this research study/project to demonstrate compliance with this approved protocol and the University of Manitoba Policy on the Ethics of Research Involving Humans.

CONDITIONS OF APPROVAL:

1. The study is acceptable on scientific and ethical grounds for the ethics of human use only. **For logistics of performing the study, approval must be sought from the relevant institution(s).**
2. This research study/project is to be conducted by the local principal investigator listed on this certificate of approval.
3. The principal investigator has the responsibility for any other administrative or regulatory approvals that may pertain to the research study/project, and for ensuring that the authorized research is carried out according to governing law.
4. **This approval is valid until the expiry date noted on this certificate of approval. A Bannatyne Campus Annual Study Status Report must be submitted to the REB within 15-30 days of this expiry date.**
5. Any changes of the protocol (including recruitment procedures, etc.), informed consent form(s) or documents must be reported to the HREB for consideration in advance of implementation of such changes on the **Bannatyne Campus Research Amendment Form.**
6. Adverse events and unanticipated problems must be reported to the REB as per Bannatyne Campus Research Boards Standard Operating procedures.
7. The UM HREB must be notified regarding discontinuation or study/project closure on the **Bannatyne Campus Final Study Status Report.**

Sincerely,

John, Arnett, PhD., C. Psych.
Chair, Health Research Ethics Board
Bannatyne Campus

Please quote the above Human Ethics Number on all correspondence.
Inquiries should be directed to the REB Secretary Telephone: (204) 789-3255/ Fax: (204) 789-3414

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