



**Canadian Community Health Survey, Cycle 2.1  
Iiyiyiu Aschii, 2003**

*Use and perceptions of health services*

**AUTHORS**

Ellen Bobet

Confluence research and writing, for the Cree Public Health Department

Josée Gauthier

Direction Systèmes de soins et services

Institut national de santé publique du Québec

**EDITING AND COORDINATION**

Gilles Légaré, Marie-Anne Kimpton and Mélanie Anctil  
Unité Connaissance-surveillance, direction Recherche, formation et développement  
Institut national de santé publique du Québec

**STATISTICAL ANALYSES**

Denis Hamel  
Unité Connaissance-surveillance, direction Recherche, formation et développement  
Institut national de santé publique du Québec

**WITH THE COLLABORATION OF**

Jill Torrie, Yv Bonnier-Viger, Marcellin Gangbè, Elena Kuzmina et Pierre Lejeune  
Public Health Department  
Cree Board of Health and Social Services of James Bay

**REVIEWER**

Lily Lessard  
Institut national de santé publique du Québec

**TRANSLATION**

Cogitco Inc.

**LAYOUT**

Line Mailloux  
Unité Connaissance-surveillance, direction Recherche, formation et développement  
Institut national de santé publique du Québec

**PUBLICATION**

Cree Board of Health and Social Services of James Bay &  
Institut national de santé publique du Québec

*The complete text of this document is available  
on the CBHSSJB's Web site at [www.creepublichealth.org](http://www.creepublichealth.org)  
and on the INSPQ's Web site at [www.inspq.qc.ca](http://www.inspq.qc.ca)*

*Reproduction for non-commercial purposes is permitted,  
as long as the source is acknowledged.*

Photo: courtesy of Dr. Darlene Kitty  
Design: Katya Petrov

Document deposited on Santécom (<http://www.santecom.qc.ca>)  
Legal deposit – 2<sup>nd</sup> trimester 2008  
Bibliothèque et Archives nationales du Québec  
Library and Archives Canada  
ISBN: 978-2-550-52888-3 (PDF)  
© Cree Board of Health and Social Services of James Bay (2008)

## TABLE OF CONTENTS

<b>FOREWORD</b> .....	<b>2</b>
<b>METHODOLOGY OF THE CANADIAN COMMUNITY HEALTH SURVEY (CCHS), CYCLE 2.1, IYIYIU ASCHII, 2003</b> .....	<b>2</b>
<b>INTRODUCTION</b> .....	<b>3</b>
Background .....	4
<b>METHODOLOGY</b> .....	<b>4</b>
Measures of use and perceptions of health care services .....	4
Explanatory variables .....	5
Scope and limitations of the analysis .....	5
<b>RESULTS</b> .....	<b>6</b>
<b>1. USE OF HEALTH SERVICES</b> .....	<b>6</b>
Use of medical care .....	6
Use of dental care .....	7
<b>2. UNMET NEEDS FOR CARE</b> .....	<b>8</b>
Unmet needs for health care .....	8
Unmet needs for dental care .....	9
<b>3. PERCEPTIONS OF HEALTH CARE AVAILABILITY AND QUALITY</b> .....	<b>10</b>
<b>4. EFFECTS OF HAVING A REGULAR MEDICAL DOCTOR ON HEALTH SERVICE USE AND PERCEPTIONS</b> .....	<b>11</b>
Proportion of residents reporting having a regular medical doctor .....	11
Effects of having a regular medical doctor on use of health services .....	12
Effects of having a regular medical doctor on perceptions of health services .....	12
<b>DISCUSSION AND INTERPRETATION</b> .....	<b>14</b>
Status with respect to use and perceptions of services .....	14
Perception of the presence of obstacles likely to hinder access to health services .....	14
improving service organization .....	15
<b>IMPORTANT POINTS</b> .....	<b>16</b>
<b>REFERENCES</b> .....	<b>17</b>
<b>APPENDIX</b> .....	<b>19</b>

## FOREWORD

This publication presents the findings of a health survey carried out in 2003 among households of Iiyiyiu Aschii<sup>1</sup>. A similar survey had been undertaken in the region by Santé Québec in 1991 (Santé Québec, 1994). Ten years later, the Public Health Department of the Cree Board of Health and Social Services of James Bay (CBHSSJB) urgently required a new picture of its population's state of health. The purpose of the 2003 survey was to gather up-to-date information on the region's main health problems and related factors in order to improve the planning, administration, and evaluation of various social and health programs.

According to the 2001 Public Health Act (*Loi sur la santé publique*), Quebec's public health departments must periodically assess the health of their respective populations. Since 2000-2001, the province's socio-sanitary regions – with the exception of Iiyiyiu Aschii and Nunavik – have participated in the Canadian Community Health Survey (CCHS) conducted by Statistics Canada.

In 2003 the Public Health Department of Iiyiyiu Aschii decided to take part in this vast project, which was already under way across Canada, and initiated a CCHS-type survey on its own territory (Statistics Canada, 2003). Because the CBHSSJB Public Health Department is connected to the network of Quebec's Department of Health and Social Services (*Ministère de la santé et des services sociaux*, MSSS), it was able to enlist the expert assistance of the *Institut national de santé publique du Québec* (INSPQ) in coordinating the analysis of the results. Professionals drawn from Quebec's health care community and the Public Health Department of Iiyiyiu Aschii, as well as academic experts in the field, were given the task of drafting the publications. The analyses include results on various aspects of health affecting residents of Iiyiyiu Aschii and they also provide comparisons with 1991 data from the region and 2003 data from the rest of Quebec (Santé Québec, 1994; Statistics Canada, 2003). These analyses are relevant for everyone concerned with the health of Iiyiyiu Aschii residents (professionals, administrators, planners, and researchers).

Ten publications were produced as part of this survey:

- *Demographic and social characteristics of the population living in Iiyiyiu Aschii*
- *Food habits, physical activity and body weight*

<sup>1</sup> Please note that the socio-sanitary region for the James Bay Cree Territory is referred to by its Cree name, Iiyiyiu Aschii, throughout this text.

- *Cigarette consumption*
- *Lifestyles related to alcohol consumption, drugs and gambling*
- *Preventive practices and changes for improving health*
- *Health status, life expectancy and limitation of activities*
- *Injuries and transportation safety*
- *Mental health*
- *Use and perceptions of health services*
- *Survey methods*

A final publication, *Survey highlights*, offers a rapid overall view of the health study's results.

Many people contributed to this study at every stage in its progress. Particularly deserving of mention are the roles played by Jill Elaine Torrie, Director of Specialized Services, and Yv Bonnier-Viger, Director of Public Health of the Cree Board, throughout the planning phase and during operations on the field. Above all, we wish to thank the Cree population for its remarkable level of collaboration.

## METHODOLOGY OF THE CANADIAN COMMUNITY HEALTH SURVEY (CCHS), CYCLE 2.1, IYIYIU ASCHII, 2003

The survey was conducted during the summer of 2003 using a representative sample of residents aged 12 and older from the nine communities in Iiyiyiu Aschii: Chisasibi, Eastmain, Mistissini, Nemaska, Oujé-Bougoumou, Waskaganish, Waswanipi, Wemindji, and Whapmagoostui.

The original 1,000-person sample was randomly selected from residents of private households in the region. The final sample thus included both Aboriginal and non-Aboriginal residents. Most interviews (85%) were conducted in person during the summer of 2003 using computer-assisted interview software. Individuals who were absent during the first data collection period were interviewed by telephone at the end of autumn 2003.

There was a high participation rate. Of the 646 households selected, 581 agreed to participate in the survey (90%). Within these households, 920 of the 1,074 eligible individuals (86%) agreed to answer the questionnaire, for a combined response rate of 78%. The survey results were then adjusted based on the number of people aged 12 and older from Iiyiyiu Aschii living in private households, excluding residents of institutions such as seniors' homes. This survey does not include

children under the age of 12. All data presented in this document have been weighted to allow inferences to be made for the population as a whole.

However, it must be noted that the data are from a sample and are therefore subject to a sampling error, which must be taken into account. A coefficient of variation (CV) was used to quantify how precise the estimates were, and Statistics Canada's cut-off points were used to describe the precision of these estimates. An asterisk (\*) next to an estimate indicates high sampling variability (CV between 16.6% and 33.3%). Estimates with unacceptable precision rates (CV > 33.3%) or based on fewer than ten respondents have been suppressed and replaced by the letter "U."

Statistical analyses of comparisons among the sexes, age groups and sub-regions were conducted at a threshold of  $\alpha = 0.05$ . Comparisons with the rest of Quebec were standardized to take into account the differences in age structure between the population of Iiyiyiu Aschii and that of the rest of Quebec, and were conducted at a threshold of  $\alpha = 0.01$  (Statistics Canada, 2003).

When the questions asked were similar, the results were compared to those of a 1991 survey carried out in the region (Santé Québec, 1994). In light of differences in the samples between the two surveys, these comparisons are only made among Cree aged 15 and older and have been standardized to compensate for changes in the population's age structure. Only unadjusted rates are presented in the text in order to avoid possible confusion with the standardized rates.

More details on data processing are given in the above-mentioned *Survey methods* report.

## INTRODUCTION

The use of health services by a given population depends on more than just its individual needs. The type of distribution system also plays a role in how easy or difficult it is for people to gain access to these services (Andersen, 1995; Aday et al., 1999; Ricketts & Goldsmith, 2005). The fact that vast territories must be taken into account in any offer of health and social services to the nine communities of the Iiyiyiu Aschii region also leads to organizational problems (Campbell, 2002; Gruen et al., 2002; Godden et al., 2004; Lemchuck-Favel & Jock, 2004; Nagarajan 2004). Data on accessibility to hospitals and specialized services<sup>2</sup> (Table A1, Appendix) show a number of geographical gaps in primary care services offered in remote and isolated areas.

As a result of the nature and extent of these differences, as observed in the Iiyiyiu Aschii region in comparison with the rest of Quebec as well as among the various Iiyiyiu Aschii communities themselves, use and perceptions of health services may vary greatly from community to community, unless the organizational methods in place are able to compensate. A study of such variations, supported by a recognized analysis model (Andersen, 1995; Aday et al., 1999; Ricketts & Goldsmith, 2005), could shed light on access to services as well as organizational methods that may improve delivery.

This document presents the results of an analysis of data from the Canadian Community Health Survey carried out in 2003 among the communities in the Iiyiyiu Aschii region. Taking into account certain methodological limitations, the data were used to:

- Describe the situation with respect to the use and perception of services by the members of the Iiyiyiu Aschii communities;
- Assess potential obstacles that may hinder access to health services;
- Shed light on the organizational options that could help improve the service distribution system for the Iiyiyiu Aschii communities.

<sup>2</sup> These indicators were developed to account for the geographical variations in the availability of services throughout Quebec; they do not necessarily reflect service distribution in the Iiyiyiu Aschii region. Thus, for example, the closest reference hospital is not necessarily that used by the residents of the region, but it at least gives an idea of the minimum distance to be covered to access the services of this category of hospital. The data in Table A1 (see Appendix) are intended to allow the reader to become more familiar with the scope of the observable differences in this particular context.

## BACKGROUND

The Cree Board of Health and Social Services of James Bay (CBHSSJB) provides health and social services to nine Cree communities, spread out over an extensive territory of approximately 350,000 km<sup>2</sup>, i.e. an area two-thirds the size of France, or as large as Newfoundland and New Brunswick combined. Five of those communities are located along the shores of James Bay and Hudson Bay, while the others are situated inland. The coastal communities are, traveling northward: Waskaganish, Eastmain, Wemindji, Chisasibi and Whapmagoostui. Whapmagoostui is the only community located on Hudson Bay and shares the same territory as Kuujjuarapik, the southernmost Inuit community. The inland (or continental) communities are Waswanipi, Oujé-Bougoumou, Mistissini and Nemaska.

Four groups of communities were also defined, according to the population of each village at the time of the survey. The two largest communities, Chisasibi, with about 3,500 inhabitants, and Mistissini (located about a thousand kilometres to the south), with nearly 3,000 inhabitants, make up one group each. The middle-size communities have populations of between 1,000 and 2,000 inhabitants. These are Wemindji, Waskaganish and Waswanipi, the southernmost community. The four smallest communities, Oujé-Bougoumou, Nemaska, Eastmain and Whapmagoostui, have fewer than 1,000 inhabitants each.

Such substantial geographical dispersion, as well as the communities' remoteness from major urban centres, requires particular care in the organization of its health services. One significant aspect is that the CBHSSJB relies much more on external services provided by other regions than other communities across Quebec. For example, Cree Patient Services – headquartered in Montreal and with offices in Chibougamau and Val-d'Or hospitals – transported 16,193 patients and escorts in 2002 and 2003, mostly to external facilities. The main service corridors outside the region are, in order of magnitude, Val-d'Or, Chibougamau and Montreal.

Within the region, each of the nine communities has a medical clinic that offers basic primary care services (plus a sub-regional hospital centre in Chisasibi offering very limited services), as well as other specific services such as Youth Protection. These clinics are mainly run by nurses. In fact, only the largest clinics had full-time doctors on staff, with regular rotations of doctors in the smaller clinics. A dental services department based in Chisasibi Hospital offers a wide range of preventive and curative dental care. Each community also has a dental clinic; at the time of the survey, the larger communities

had permanent dentists, while the smaller ones were served by visiting dentists<sup>3</sup>. To make up for the lack of medical personnel in a context where there are no private medical practices, the Cree Board often calls on contractual doctors and dentists who are better known in the local jargon as “dépanneurs” – a French term referring to a convenience service. Finally, to ensure continuity of care despite the high turnover of medical staff, CBHSSJB doctors do not have their own assigned patients; all patients from the same community are seen by the doctor on duty in that community.

## METHODOLOGY

---

It should be noted that the survey presented here was originally designed to measure the use of health care services in Canada in general. Since it was not possible to modify Statistics Canada's questionnaire, certain sections and questions on the organization of health care services were not particularly relevant to the Iiyiyiu Aschii region. Because of the lack of flexibility in using this measurement instrument, certain sections were simply not taken into consideration at the analysis stage.

### MEASURES OF USE AND PERCEPTIONS OF HEALTH CARE SERVICES

The “Health Care Utilization” section of the Canadian Community Health Survey questionnaire covers the various aspects of the use of health care services in the course of the year preceding the survey. In this section, we mainly retained data relative to the type of professional consulted (e.g. nurse, doctor, psychologist), and the intensity (e.g. quantity, frequency) of use of the services in question by the Cree. Some questions from the “Dental Visits” section were also used in the analysis, such as when the person last received dental care, and the reasons for not receiving care.

The data gathered in this section were also used to examine unmet needs for health services. Such data constitute complementary information relevant to anyone interested in access to health services (Carr & Wolfe, 1976; Chen & Hou, 2002; Sanmartin et al., 2002; Ricketts & Goldsmith, 2005; Starkes et al., 2005). For this section, respondents were asked to indicate if they had, at any point during the past year, not received the health care they needed. If applicable, respondents were then asked to describe the nature of the unmet need (mental or emotional problem vs. treatment for an illness or injury), and state why they did not receive the services (e.g. not available in the region, wait time too long, etc.).

---

<sup>3</sup> This situation has changed since the time of the survey. Each community now has a permanent dentist.

In addition to asking about use of health care services and unmet needs, the survey asked people aged 15 and over for their opinions on various aspects relating to health care. In the “Satisfaction with Availability” section, respondents were asked to rate the availability and quality of health care, first in the province of Quebec as a whole, then in their own communities. For analysis purposes, certain response categories were combined into “excellent/good” and “fair/poor.” Another question focused on actual experience rather than general perceptions: people who had received any form of health care in the previous year were asked to rate its availability and quality. Answers to the questions dealing with perceptions should be interpreted with some caution, as non-response rates tended to be high (12% to 23%) among younger people and those who had not had recent contact with the health care system.

#### EXPLANATORY VARIABLES

While health care needs remain the main factor determining the use of health services, other factors also influence care-seeking behaviour. A breakdown of the data relating to each of those factors was established to highlight the variations observed within the Iiyiyiu Aschii population.

Using Anderson’s model of access to health services, (Andersen et al., 1983; Andersen, 1995), it was possible to select six variables likely to influence use and perception of health services. In this case, the demographic variables (age and sex) as well as education level<sup>4</sup> were used to help assess the predisposition to use care and services. Questions about the person’s perceived state of health and the presence of one or more chronic health conditions diagnosed by a doctor (e.g. diabetes) were also taken into account to further define our understanding of the need for services.

In addition to these individual factors, two types of community groupings were considered in order to draw up a table of intra-regional variations for the use and perception of services. As their respective names indicate, the “coastal” and “inland” communities refer to the location of the communities on their territory.

The second type corresponds to the four-community grouping as defined by the population of each village at the time of the survey (i.e.: Chisasibi, with more than

3,000 inhabitants; Mistissini, with 2,000 to 3,000 inhabitants; middle-size communities, with 1,000 to 2,000 inhabitants; and small communities, with fewer than 1,000 inhabitants).

Finally, all respondents were asked to state whether they had a regular doctor and give the reasons if they did not have one (e.g. there wasn’t one available vs. did not try to get one). It has been shown that having a regular source of care facilitates the use of health services and promotes service availability and quality (Lambrew et al., 1996; Larson & Fleishman, 2003; Mendoza-Sassi & Beria, 2003; Litaker et al., 2005). The changes currently underway in the organization of Quebec’s primary care services are intended to improve the availability and quality of services by increasing the proportion of the population followed by a family doctor. It therefore seemed wise to further the analysis of the data available with respect to that strategy by taking into account the organizational model used for the Iiyiyiu Aschii communities. This variable is discussed in a separate section, where a cross analysis provides an assessment of the variable’s influence on the use and perception of services.

#### SCOPE AND LIMITATIONS OF THE ANALYSIS

The literature proposes several models to guide our analysis of the complex network of relationships that connect use and satisfaction levels with service organization parameters, while also taking individual factors into account (Andersen, 1995; Aday et al., 1999; Ricketts & Goldsmith, 2005). Because the size of the Iiyiyiu Aschii region sample does not allow for a multifactorial analysis, we limited ourselves to putting forth a small number of scenarios, using comparisons between various groups and regions. For example, we were able to compare the use and perception of services in the various parts of the Iiyiyiu Aschii region, as the two sub-regions (coastal vs. inland communities) and the four groups defined by community size are homogenous in several other respects<sup>5</sup>. Comparisons between Iiyiyiu Aschii and the rest of the province also made it possible to identify certain items of interest, particularly with respect to access to services in the Iiyiyiu Aschii region. We were also able to draw a parallel between some of our own observations and the results of the few studies previously carried out in Aboriginal communities. Finally, certain observations regarding the prevalence of unmet needs for services also shed some light on access to services.

It is important to note that beliefs and culture are also among the factors known to have an influence on service

<sup>4</sup> Education level was defined by the number of years of schooling. The category “low level of education” is equivalent to less than 7 years of school (stopped before Grade 7 or Secondary I). The category “intermediate level of education” corresponds to between 7 and 11 years of school (completed or partly completed secondary or high school). The category “high level of education” is equivalent to 12 years of school or more (i.e. one or more years of college or post-secondary schooling completed).

<sup>5</sup> No significant differences with respect to age, sex and education; see the Survey Highlights document.

use and perception. We know, for example, that the interpretation of symptoms and desirable treatments is eminently cultural (Van Sickle & Wright, 2001; Shah et al., 2003; Wardman et al., 2005). However, this survey does not allow us to discern how and to what extent Cree culture influences the use of health services or how it determines the perception of those services. It is therefore appropriate to consider that all the observations presented in this document are affected by that culture and should be interpreted accordingly.

## RESULTS

---

In the Background section, we mentioned that in order to ensure continuity of care despite the high turnover of medical staff, CBHSSJB doctors do not have their own assigned clientele; all patients in the same community are therefore seen by the doctor on duty in that community. This service structure may explain why certain people say they do not have a regular doctor. While access to a doctor is generally good, regular follow-up by the same doctor is often lacking. On the other hand, the longer a doctor remains in practice in the region, the more some people tend to consider that person as their regular doctor or family doctor. In addition, people living in communities near Val-d'Or, Chibougamau or Chapais can consult a doctor in those communities and therefore report that they have a regular doctor.

### 1. USE OF HEALTH SERVICES

---

#### USE OF MEDICAL CARE

A majority (87%) of Iiyiyiu Aschii residents had received some type of health care in the year prior to the survey. The most commonly consulted professionals were general practitioners, dentists or orthodontists, and nurses (Figure 1). Although almost as many people saw a doctor in the previous year as saw a nurse, there is a distinction in the intensity of use. On average, people seeking care saw a nurse six times per year, whereas they saw a doctor three times (Table A2, Appendix).

As Figures A1 and A2 (Appendix) show, the use of health services also varies depending on individual health care needs. A greater proportion of people who feel they are in fair or poor health (Figure A1, Appendix) and those who have at least one chronic health condition (Figure A2, Appendix) have consulted all types of professionals. Most of the observed differences are

statistically significant, but the most marked trend is with respect to consulting specialists. When the number of annual consultations is considered, only the frequency of use of nursing services presents significant deviations by the client's state of health: people who said they were in fair or poor health or who had at least one chronic condition consulted a nurse more often than others.

Demographic characteristics such as sex, age, and education level were found to be related to the use of health services. As in other populations, women in Iiyiyiu Aschii were more likely than men to have used medical care in the past year (91% vs. 84%). And although a person's age had little effect on their likelihood of consulting a professional at least once, it did affect the average number of visits: young people aged 12-19 made significantly fewer visits than older people to both nurses and doctors. People with a university education were more likely than others to have consulted most types of health professionals, except for nurses. They were also more likely to have been hospitalized (data not shown).

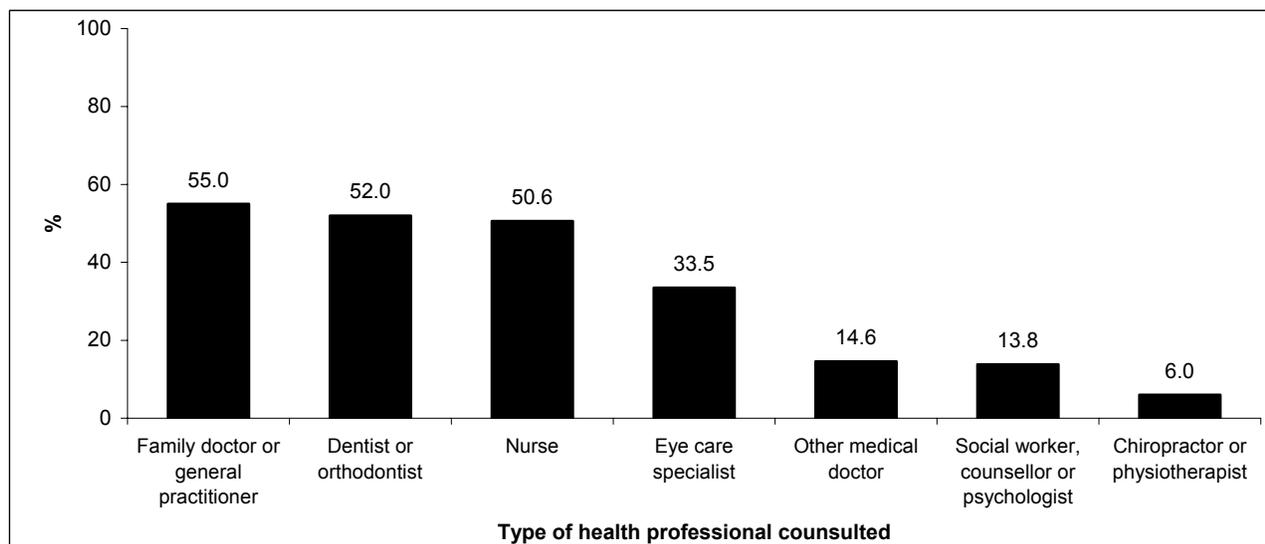
The survey data also show relatively substantial variations within the region with respect to the use of health services, as shown in Table 1. For the moment, we have no satisfactory hypotheses to explain these variations.

Unlike most other parts of the province, the health care system in Iiyiyiu Aschii relies heavily on nurses as the providers of primary care – a structure that is clearly reflected in the unusually large proportions of people who had consulted a nurse in the previous year (Figure 1). This greater use of nursing care explains the finding that territory residents see health professionals in the same proportions as other Quebecers, despite being significantly less likely to have consulted either a general practitioner or a specialist.

People in the territory were also significantly more likely than other Quebecers to have spent a night in the hospital in the year prior to the survey. This is probably a consequence of the communities' isolation and dependence on outside services, which may lead health care providers to err on the side of caution in deciding whether or not to hospitalize a patient. Similar situations are documented in the literature (Shah et al., 2003) and have also been noted in other remote regions of the province.

**Figure 1**

Proportion (%) of the population aged 12 and over who consulted various types of health professionals at least once in the year preceding the survey, Iiyiyiu Aschii, 2003



Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

**Table 1**

Proportion (%) of people aged 12 and over having received various forms of health care in the past year, by community size; Iiyiyiu Aschii, 2003

% of people who had...	Chisasibi (over 3,000 people)	Mistissini (2,000 to 3,000 people)	Middle-size communities (1,000 to 2,000 people)	Smaller communities (under 1,000 people)
Consulted a general practitioner	57.8	57.3	48.2 <sup>1</sup>	60.7
Consulted a nurse	31.7	64.6 <sup>1</sup>	49.8 <sup>1</sup>	61.2 <sup>1</sup>
Consulted a specialist	11.0*	14.6	13.7	21.2 <sup>1</sup>
Spent one or more nights in hospital	10.6*	12.3*	9.5*	18.3 <sup>1</sup>

<sup>1</sup> Superscript indicates that the number differs significantly from the value shown for the reference stratum (Chisasibi).

\* Imprecise estimate. Interpret data with caution (CV between 16.6% and 33.3%).

Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

### USE OF DENTAL CARE

Over 80% of residents had seen a dentist in the three years prior to the survey: 52% to 54%<sup>6</sup> had seen one in the past year, and 29% had done so in the previous one to three years. The proportion of people who reported having received dental care in the past year was only slightly lower than in other parts of Quebec, although the difference did reach statistical significance. Women were somewhat more likely than men (58% vs. 50%) to report that they had seen a dentist in the previous year, and

younger people were significantly more likely than those over age 45 to have received dental care (data not shown).

Use of dental services varied within the region in much the same way as use of medical care. Thus, people in the inland communities were significantly more likely than those in the coastal areas (59% vs. 50%) to have received dental care in the previous year, possibly reflecting the fact that, at that time, Mistissini had more dentists than the other communities. Table 2 shows that people living in Mistissini were more likely than those living in other communities to have recently received dental care.

<sup>6</sup> The survey contained two different questions on use of dental services, and they produced slightly different results.

**Table 2**

Most recent dental visit among population aged 12 and over, by community size (%); Iiyiyiu Aschii, 2003

Period	Chisasibi (over 3,000 people)	Mistissini (2,000 to 3,000 people)	Middle-size communities (1,000 to 2,000 people)	Smaller communities (under 1,000 people)
Within past year	54.4	64.9 <sup>1</sup>	48.3	50.8
Between 1 and 3 years ago	26.4	28.5	29.7	33.6
More than 3 years ago	19.2	6.7*	22.0	15.6*

<sup>1</sup> Superscript indicates that the figure differs significantly from the value shown for Chisasibi.

\* Imprecise estimate. Interpret data with caution (CV between 16.6% and 33.3%).

Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

## 2. UNMET NEEDS FOR CARE

### UNMET NEEDS FOR HEALTH CARE

Overall, 14% of Iiyiyiu Aschii residents mentioned unmet needs for health care services in the course of the previous year. Within this population, more women than men reported unmet needs (Table 3), while people with less education reported proportionally fewer unmet needs than those with a higher level of education (data not shown). These observations, as well as those associated with people in situations where services are required – i.e. those who believe that their health is average or poor or who report at least one chronic health condition (Figures A3 and A4, Appendix) – are fairly consistent with findings in comparable analyses (Chen & Hou 2002; Gauthier, unpublished).

The proportions of Iiyiyiu Aschii residents reporting unmet needs are comparable to the rest of Quebec. This held true for both men and women, as well as by state of health (good versus poorer). However, more specific variations are observed with respect to age. In particular, the extent of unmet needs in the young adult group cannot be explained by the age structure of the Cree population (Table 3). It is possible that the people in this age group implicitly included their need for services on behalf of their children.

**Table 3**

Proportion (%) of people aged 12 and over reporting an unmet need for health care in the past year, by sex and age group; Iiyiyiu Aschii, 2003

	%
<b>Sex</b>	
Men	11.5 <sup>1</sup>
Women	16.2 <sup>1</sup>
<b>Age Group</b>	
12-19 years	6.8*
20-29 years	21.4 <sup>2</sup>
30-44 years	13.4 <sup>2</sup>
45 years and older	13.3*

<sup>1-2</sup> Superscript indicates that the difference between the two estimates is statistically significant.

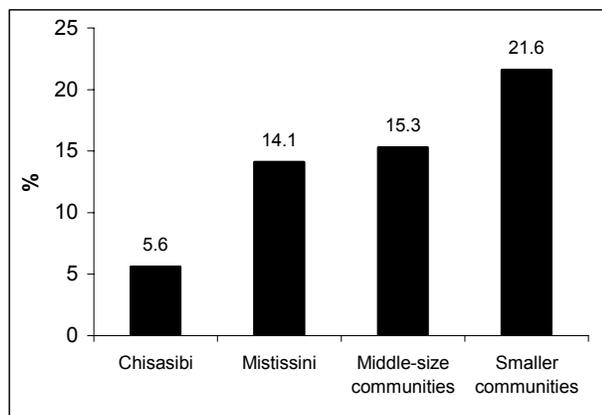
\* Imprecise estimate. Interpret data with caution (CV between 16.6% and 33.3%).

Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

Some of the biggest differences related to unmet health care needs were by community location: people living in the inland communities were twice as likely as those in the coastal areas to say that they had had an unmet need for health care (20% vs. 10%). There was also some indication that the size of the community and its distance from specialized services were associated with unmet needs (Figure 2).

**Figure 2**

Proportion (%) of people aged 12 and over with an unmet need for health care in the previous year by community size, Iiyiyiu Aschii, 2003



Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

What were these needs for care, and why were they unmet? Most respondents (69%) indicated that their unmet need was for treatment of a physical health problem. Another 14% mentioned the need for a periodic examination or prenatal consultation, while equal proportions (11% each) spoke of needing treatment for a mental health problem or an injury.

Interestingly, no one mentioned language barriers as a reason for not obtaining needed care. The top three reasons that people gave for not receiving care were that the service was not available in the region (24%), the waiting period was too long (20%), or the service was not available at the time required (17%). Even though these are also the reasons most often mentioned in other parts of Quebec (Table 4), the question of regional availability of services clearly stands out as a reason for unmet needs in the Cree communities. The fact that more than 16% of the Iiyiyiu Aschii population reporting unmet needs say that a doctor decided that care was not needed shows a notable difference compared to the rest of Quebec, as much in terms of proportion as in terms of its ranking compared to other reasons.

**Table 4**

Main reasons<sup>a</sup> health care was not received by people reporting an unmet need for health care in the previous year, among population aged 12 and over; Iiyiyiu Aschii and rest of Quebec, 2003

Main reasons	Comparison of population proportions	Rank in Iiyiyiu Aschii	Rank in the rest of Quebec
Service not available in region	Iiyiyiu Aschii > <sup>1</sup> Quebec	1	3
Waiting time too long	Iiyiyiu Aschii < <sup>1</sup> Quebec	2	1
Service not available at time required	Iiyiyiu Aschii ≈ Quebec	3	2
Too busy	Iiyiyiu Aschii ≈ Quebec	4	6
Doctor felt care not needed	Iiyiyiu Aschii > <sup>1</sup> Quebec	5	9
Felt care would be inadequate	Iiyiyiu Aschii ≈ Quebec	6	5
Transportation problems	Iiyiyiu Aschii > <sup>1</sup> Quebec	7	14

<sup>a</sup> Only the top seven of the sixteen choices put to the respondents are shown in this comparison.

<sup>1</sup> Superscript indicates that the difference between Iiyiyiu Aschii and the rest of Quebec is statistically significant.

Source: CCHS 2.1 – Iiyiyiu Aschii and rest of Quebec, 2003.

### UNMET NEEDS FOR DENTAL CARE

Some 17% of Iiyiyiu Aschii residents said that they had not received dental care in three or more years. This was almost double the proportion seen elsewhere in Quebec. The most common reason cited for not obtaining dental care was simply that the person did not see a need for it (40%; see Table 5). These results are surprising, considering that a proportionally greater number of residents in this region have a negative perception of their own dental health than elsewhere in Quebec (22%

vs. 14%). This contradiction seems to stem from the very concept of the need for dental care. Indeed, it appears that, for most residents of the region, dental care is only required in emergency situations, i.e. when the person is already suffering from an infection or other acute oral health problem – a long way from a situation in which individuals see a dentist on a regular basis to prevent the occurrence of such problems.

**Table 5**

Reasons for not seeing a dentist in three years or more<sup>a</sup> (%), among population aged 12 and over; Iiyiyiu Aschii, 2003

Reasons	%
Not necessary	40.0
Did not get around to it	24.5
Other	36.3
Waiting time too long	U

<sup>a</sup> Caution: non-response rate of 23.7% to this question.

Note: respondents could choose more than one of these options.

U: Unpublished data (CV > 33.3% or fewer than 10 respondents).

Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

### 3. PERCEPTIONS OF HEALTH CARE AVAILABILITY AND QUALITY

Just under two thirds (63%) of residents thought that health care availability in the province as a whole was excellent or good, while 65% felt that quality was good as well. Opinions about availability tended to be more positive among the people who were least likely to require care. Thus, people who said their health was excellent or good and those with no chronic conditions were significantly more likely than others to report that access was excellent or good in the province (Figures A5 and A6, Appendix). While respondents' health had an influence on their perceptions of the availability of services, it seemed to have slightly less influence on their perceptions of the quality of those services (Figures A5 and A6, Appendix)<sup>7</sup>.

Although most people had favourable opinions of health care in the province, they were less pleased with the services available in their own communities. Slightly less than half the residents of Iiyiyiu Aschii (47%) said that the health care availability in their community was excellent or good. This is well below the comparable proportion in the rest of the province. As was the case with perceptions of province-wide services, people in poor health (Figure A7, Appendix) and those with chronic conditions (Figure A8, Appendix) were significantly less likely to describe the availability of services in their home community as excellent or good.

Views of the quality of services were also less positive than elsewhere in Quebec: only half the population rated service quality as either excellent or good – a lower proportion than elsewhere in the province. Perceptions of quality were quite consistent across different groups. People's opinions were similar across all age groups, for both sexes, and in both coastal and inland communities. However, the results with respect to education were interesting: people with either a low or a high level of education rated both availability and quality more positively than did people with intermediate levels of education. Finally, there were some variations according to community size and remoteness. Residents of Chisasibi and Mistissini tended to be more satisfied with both the quality and availability of services than those living in middle-size or smaller communities, and many of these differences were statistically significant (see Figure A9, Appendix).

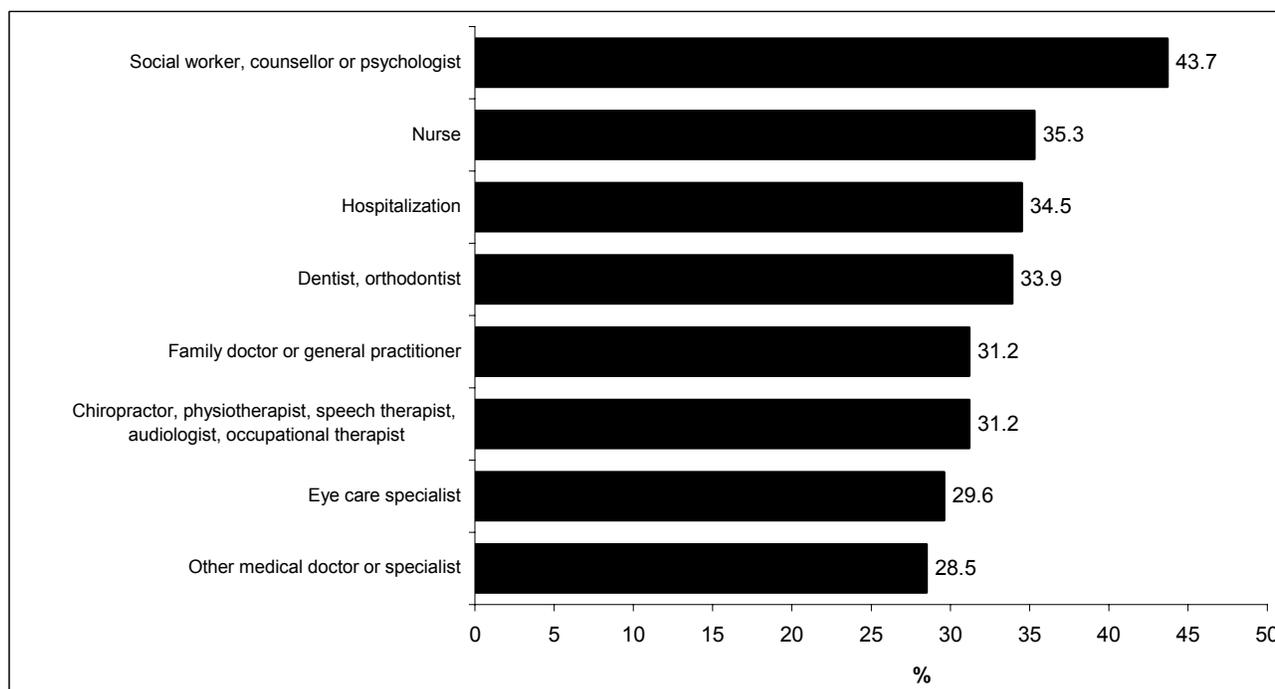
The survey also asked people who had actually received health care in the previous year how available they found it. Overall, 68% considered the availability of the services they had received to be excellent or good, and this applied to both men and women. People in poor health or with chronic conditions considered availability of services to be less satisfactory (data not shown). The results by education level show the same pattern as for the other two questions on perceptions of availability, namely that people with intermediate levels of education (moderate level of schooling) were less satisfied than those in the other two groups (data not shown).

Perceptions of availability also varied with the type of care used in the past year. Among all people who used any form of care, 32% rated availability as fair or poor. But this proportion rose to 44% (Figure 3) when only those who had sought counselling from a social worker, counsellor or psychologist were considered.

<sup>7</sup> There are a few differences by age and education level, but the high non-response rate among younger people prevents any interpretation.

**Figure 3**

Proportion (%) of the population aged 12 and over using health care services and reporting a fair or poor perception of availability, based on the nature of the services sought; Iiyiyiu Aschii, 2003



Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

#### 4. EFFECTS OF HAVING A REGULAR MEDICAL DOCTOR ON HEALTH SERVICE USE AND PERCEPTIONS

The literature shows that having a regular source of care, particularly a regular doctor, is a factor that makes it easier to access services, promotes their use and improves their quality, especially in terms of the relevance of those services (Lambrew et al., 1996; Larson and Fleishman 2003; Mendoza-Sassi & Beria, 2003; Litaker et al., 2005). That is why Quebec is now considering organisational models that will increase the proportion of people with family doctors by improving the division of primary health care activities between doctors and nurses.

The situation is very different in the Iiyiyiu Aschii region, where, with the exception of Chisasibi, a primary care services structure has been developed based on the contribution of nurses, who provide regular services and front-line care in each of the communities<sup>8</sup>. This means that, as with other professionals (e.g. psychologists or physiotherapists), on-site or visiting doctors are called

<sup>8</sup> In-service training helps widen the scope of intervention by nurses. That intervention is supported by care protocols that include the delegation of medical acts legally supported by Bill 90.

upon for the more serious, more complex or more specific health problems.

The next section examines what the survey data tell us about the effects of having a regular doctor in this kind of front-line organization.

#### PROPORTION OF RESIDENTS REPORTING HAVING A REGULAR MEDICAL DOCTOR

Since most people in Iiyiyiu Aschii receive front-line services from nurses, with doctors present perhaps one week a month, many people may be followed up regularly by a nurse without realizing that they are also benefiting – through the nurse – from the doctor’s services. Because of this, and given the substantial turnover of doctors dispensing services in the region, it is not surprising that a minority of residents – just 24% – report that they have a regular medical doctor. In fact, what is surprising is how many people say that they have a regular doctor even when they live in communities where there is no resident doctor. People seem to have different interpretations of what it means to have a regular doctor. It is possible that some respondents do not distinguish between doctors and nurses. Another possibility is that if a community has had the same visiting doctor for many years, residents tend to consider that person their regular doctor. Finally, residents of

some of the more southerly communities may see a regular doctor in adjacent towns such as Chibougamau or Val-d'Or.

The two main reasons territory residents give for not having a regular doctor are either that none are available in the region (56%) or that their regular doctor left or retired (21%). In contrast, elsewhere in Quebec the top two reasons for not having a regular doctor are that the person has not tried to contact one, or that local doctors are not taking any new patients (data not shown).

In a pattern also observed province-wide, the proportion of people with a regular doctor increases with age (data not shown) and with declines in perceived health status (Figure A10, Appendix). This trend is even greater among people who have been diagnosed with a chronic health problem (nearly twice the number of those with no chronic health problems; see Figure A11, Appendix) and is clearly higher than trends observed elsewhere in Quebec (data not shown). Overall, these observations show that the preferred method for organizing front-line care in this region is aimed at channelling the doctors' contribution toward people in situations of greater need.

Given the size of their populations, we expected the proportion of Chisasibi or Mistissini residents reporting that they have a regular doctor (23% and 24% respectively) to correspond to the proportion for the region overall. It is surprising to note, however, that the proportion observed for smaller communities (under 1,000 inhabitants) is much greater (36%) – nearly twice as much as that observed for the middle-size communities (1,000 to 2,000 inhabitants; 19%). The stability of the medical personnel over the last twenty years in Whapmagoostui could be responsible for these results. In the absence of a significant difference between the communities with respect to individual health care needs, we can even hypothesize that the increased use of services in the smaller communities is also due to this fact (see Table A1, in Appendix).

#### **EFFECTS OF HAVING A REGULAR MEDICAL DOCTOR ON USE OF HEALTH SERVICES**

Figure 4 shows a systematic trend whereby people having a regular doctor use each of the services considered by the survey to a greater extent<sup>9</sup>.

In addition, people with a regular doctor consulted a nurse on average nearly three times more often in the course of the past year than those who did not have a regular doctor (11.5\* visits vs. 4.3); this gap is statistically significant. It should be noted that the significance of these data goes beyond their most immediate interpretation. In fact, people who report having a regular doctor also show twice as many hospitalization days. This systematic trend of people with a regular doctor using more health services must also be compared with the previous observation that people in a situation of need report having a regular doctor more than others do.

#### **EFFECTS OF HAVING A REGULAR MEDICAL DOCTOR ON PERCEPTIONS OF HEALTH SERVICES**

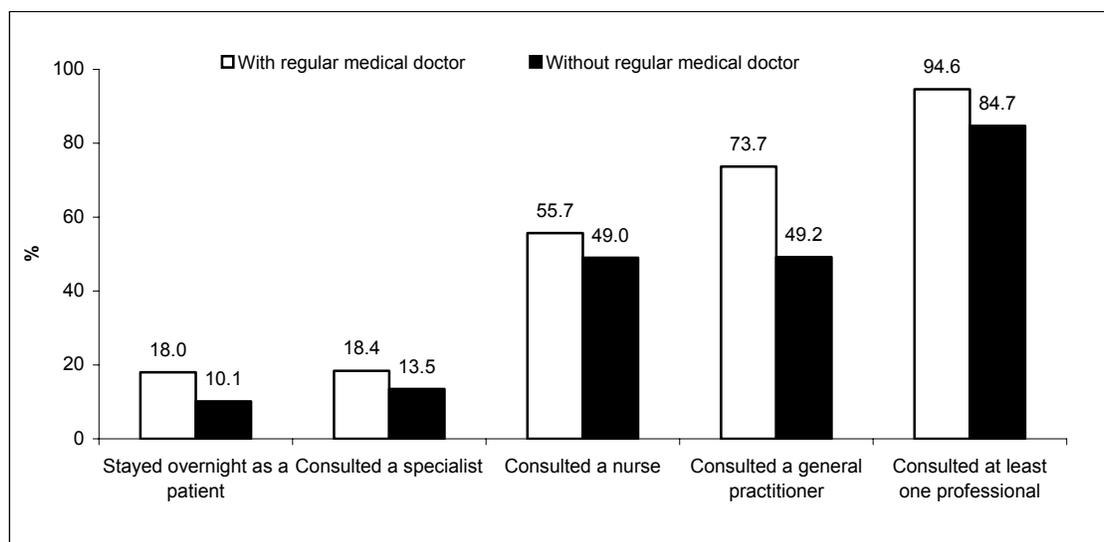
Having a regular medical doctor in the Iiyiyiu Aschii region is associated with a favourable perception of health services (Figure 5). The most significant difference between people with a regular medical doctor and others can be observed in terms of their perception of service availability in their community of residence, which is shown to be statistically significant. In addition, having a regular medical doctor seems to have a greater influence on the perception of service availability in the Iiyiyiu Aschii region than elsewhere in Quebec. In fact, while the residents of this region as a whole appear to have a much less favourable perception of service availability in their community of residence than other Quebecers, this difference disappears if we consider only those reporting that they have a regular medical doctor (data not shown).

---

<sup>9</sup> In the case of consultations with nurses and specialized doctors, the differences observed are not statistically significant.

**Figure 4**

Proportion (%) of the population aged 12 and over, with or without a regular medical doctor, who say they have used various health services over the past 12 months; Iiyiyiu Aschii, 2003

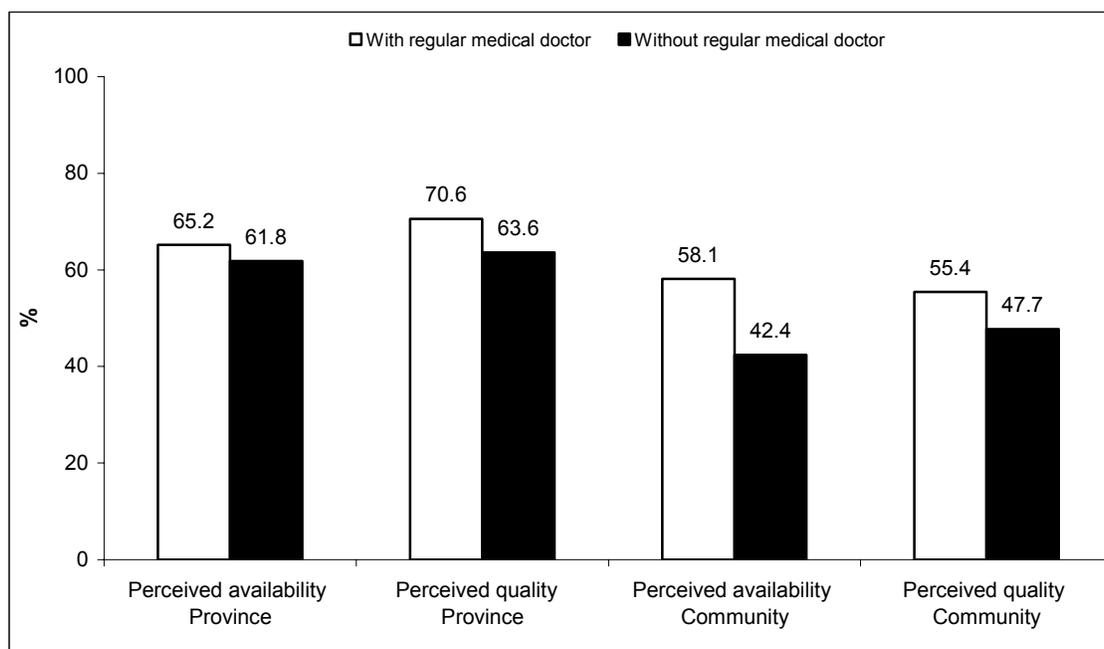


Note: For nurses and specialists, the differences observed are not statistically significant.

Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

**Figure 5**

Proportion (%) of the population aged 12 and over, with or without a regular medical doctor, who say they have a positive perception (excellent or good) of the availability and quality of services in the province versus in their community; Iiyiyiu Aschii, 2003

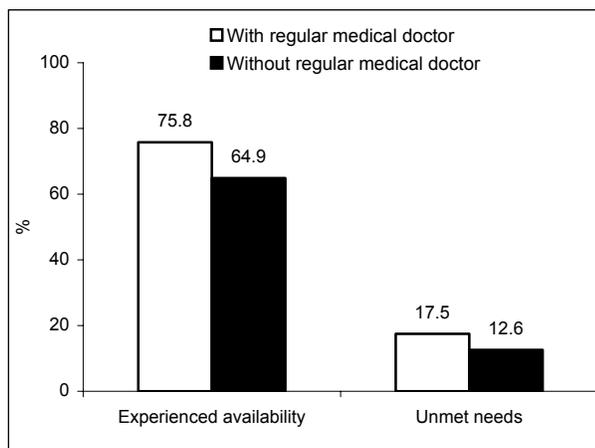


Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

Having a regular doctor increases the probability of having a positive perception of the availability of services actually used (although it is impossible to tell if those services are offered in the community or outside the region; see Figure 6). Having a regular medical doctor does not, however, significantly reduce the probability of reporting unmet needs. This probability is even increased in the Iiyiyiu Aschii region, although it remains essentially the same elsewhere in Quebec, among people reporting that they have a regular medical doctor. Does this mean that, in Iiyiyiu Aschii, doctors play a sort of “gatekeeper” role whereby their interventions with patients can contribute to reducing the overuse of more specialized resources? (Allen & Mor, 1997; Grumbach et al., 1999; Fairchild et al., 2000). This interpretation should not be made lightly, since the people most likely to report having a regular medical doctor are generally those in poorer health than the others (Figures A10 and A11, Appendix).

### Figure 6

Proportion (%) of the population aged 12 and over, with or without a regular medical doctor, having a positive perception (excellent or good) of the availability of services used versus those reporting unmet needs for services; Iiyiyiu Aschii, 2003



Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

## DISCUSSION AND INTERPRETATION

### STATUS WITH RESPECT TO USE AND PERCEPTIONS OF SERVICES

While 63% of Iiyiyiu Aschii residents believe that health care availability is good in the province as a whole, only 47% consider it good in their own community. Since each community has a clinic staffed by nurses, it can be argued that front-line care is in fact more available than in many areas to the south; however, high doctor turnover in the region and the distance to specialized

facilities affect access to medical and more specialized care. So it is not surprising that much higher proportions of Iiyiyiu Aschii residents think availability is poorer than in other parts of Quebec, and that residents of Chisasibi and Mistissini are more likely than those of other communities to report that services are readily available.

Having a regular medical doctor is associated with increased use and a more favourable perception of the availability of health services. In the Iiyiyiu Aschii region, this relationship appears to be even stronger than elsewhere in Quebec, which is consistent with observations in other areas of Quebec where specialized services are not close by (Gauthier, 2007). These observations lead us to believe that having a regular source of care helps palliate the region’s geographical barriers.

The relatively small differences observed in use of services compared to the rest of Quebec are somewhat reassuring when we consider the gaps in availability of health services that characterize the Iiyiyiu Aschii region (Table A1, Appendix). It would seem that the organization methods implemented in this region are useful in helping make up for the scarcity of front-line resources as well as the remoteness of hospital and specialized services.

Regardless of community of residence, the main factor determining the use of the various services remains individual health care needs. Some observations relating to intra-regional variations, however, indicate certain areas for improvement.

### PERCEPTION OF THE PRESENCE OF OBSTACLES LIKELY TO HINDER ACCESS TO HEALTH SERVICES

Recent research in the field generally agrees that the state of health and the presence of multiple risk factors within Aboriginal communities both contribute to significantly increasing their health services needs (Thouez et al., 1990; Tookenay, 1996; Martens et al., 2005; Wardman et al., 2005). This is no different for the Iiyiyiu Aschii population (Thouez et al., 1990; Campbell, 2002). Given the close follow-up required for Type 2 diabetes, for example (Harris et al., 1998; Meltzer et al., 1998), the high prevalence of this health problem among the Cree communities should lead to increased use of front-line services as well as more specialized services, particularly in ophthalmology. We cannot, however, assess the extent to which the local system has or has not adjusted to the needs of this population, as the available data unfortunately do not enable us to compare ophthalmology consultations of diabetics in the Iiyiyiu Aschii region with those in the rest of Quebec.

On the other hand, we also cannot completely disregard the possible/potential constraints with respect to service access for Iiyiyiu Aschii communities, especially considering that the reports regarding dental treatments were also surprising. The picture emerging from the survey is relatively positive: about half of all adults said that they had seen a dentist in the past year and few people cited the long waiting lists as a reason for not seeking care. In fact, the main reason for not seeking care – cited by 40% of those who had not seen a dentist in three years or more – was simply that none was required. Information from the dental program itself paints a very different picture. A 2002 report (Véronneau et al., 2002) found that the average waiting time for treatment in the region had risen to eleven months and that there were many unmet needs. Two complementary points of view can therefore be observed: the people seem to associate needs more with emergency situations while the specialists talk about programmed needs. The difference between these two points of views shows the extent of what remains to be done in terms of public health to encourage people to be more proactive with respect to their health and adopt a healthy lifestyle and preventive practices.

The apparent contradictions between the modest levels of unmet needs reported by respondents and the high needs perceived by some health professionals may be understandable. Some authors have reported that certain Aboriginal populations have different perspectives on health service use and its potential benefits (Campbell, 2002; Wardman et al., 2005). The substantial gap observed between perceived and actual needs is also consistent with recent research indicating that people tend to underestimate their need for health services, particularly in regions where such services are scarce and remote (Mayer et al., 2005). These two complementary hypotheses may help to explain some of the survey's results with respect to unmet needs.

The observation that area residents report no more unmet needs for health care than people in other parts of Quebec cannot be interpreted in terms of similar access for both populations. It is important to recall that almost a quarter of residents with unmet needs specified that the services they required were not available in the region. The fact that two groups, women and young adults between the ages of 20 and 29, are especially likely to report unmet needs also raises the possibility that there are needs for prenatal care that are not being met locally.

Aside from the few availability problems mentioned above, the current local systems seem to adjust well to the need for services by those who need them most, enabling these people to access the full range of services covered. In fact, people in poorer health and those who

have at least one chronic health condition more often receive ongoing professional attention, especially with respect to nursing services. In addition, the transition between front-line and specialized services appears to be easier for this portion of the population, since its coverage for such services is at least twice that observed for the rest of the regional population (Figures A1 and A2, Appendix). This observation leads us to believe that the implementation of service corridors and transportation facilities has been beneficial. However, the proportion of people covered by specialist services remains well below what is observed in the rest of Quebec. Even though this observation may reflect the expanded scope of practice of general practitioners and family doctors working in this territory, it nonetheless reminds us of the importance of continuing to seek additional improvements.

#### **IMPROVING SERVICE ORGANIZATION**

It is clear that many people are receiving primary care mainly from local nurses and via short-term arrangements such as visiting doctors or medical clinics and hospital emergency services in towns like Chibougamau. This leads to certain administrative implications for the region's health care system. First, it underlines the ongoing importance of ensuring good communication between visiting doctors and local health services staff, to assure continuity of care (Reid et al., 2002). Second, it confirms the importance of proper record-keeping systems, for the same reason.

It can be noted that certain intra-regional differences remain with respect to the use of services, which appear to be related to local availability. In fact, the least extensive coverage of dental services, at least at the time of the survey, was observed in the small communities where dentists were not available on a permanent basis, while use of the various types of professionals and services seems to be particularly facilitated in Whapmagoostui by the presence of a doctor who has been practising in that community for many years.

Reducing variations in the availability of primary care is likely to be more complicated. At present, the health care system in the region is built around nurses, with doctors legally delegating certain medical acts to them through health care protocols. Nurses working in the region are distinguished from those working elsewhere in Quebec only by a training program lasting a few weeks. This type of arrangement works best when doctors and nurses know and trust each other's skills – but the high turnover of nurses and doctors in northern areas is likely to impede the development of such trust. Assuming that the region will continue to rely on nurses as the main providers of primary care, access to services might be improved by formal legal recognition of their expanded

scope of practice and by enhanced training (as is the case for nurses in many First Nation communities in other parts of Canada) (MacLeod, Kulig et al. 2004; Kulig, Stewart et al., 2006). Access might also be improved by the integration of nurse practitioners into the regional system, such as is currently being considered in Quebec (Durand, 2006). In fact the literature on the subject leads one to believe that affiliation with such a regular source of care brings the same kind of benefits as affiliation with a regular doctor (Trella, 1989; Conway-Welch, 1991; Lee & O'Neal, 1994; Ryan, 1998; Ross, 1999; Way et al., 2001). Insofar as they are able to play a "gatekeeper" role similar to that of a family doctor, the addition of nurse practitioners might also be helpful in reducing the costs associated with numerous plane trips or the chartering of regularly organized shuttles, without compromising access to the services required by the residents.

Apart from interpretations regarding dental and medical services, the results of this survey also point to possibilities for improving availability of mental health services, which concords with observations made in other Aboriginal communities in Canada (Wardman et al., 2005). The survey results show that people who have used social and psychological services in the past year tend to rate the availability of health care as fair or poor. The majority of people who seek mental health assistance in the region seem to receive it from the nurse in their community, whereas these nurses do not necessarily have adequate training in that regard (Silverman et al., 2001).

The action plan proposed for Quebec provides that mental health intervention should be based on a set of primary care services supported by secondary and tertiary services (MSSS, 2005). The organization of mental health services in smaller communities therefore constitutes a sizeable challenge, given the scarcity of resources and their remote location, to which are added problems of the stigmatization of people with a mental health problem as well as other cultural barriers that may interfere with their use (Lessard, 2005). A research project currently underway will look into the situation prevailing in the Iiyiyiu Aschii region and could result in organizational improvements (Fournier, 2005-2009).

---

## IMPORTANT POINTS

---

- 87% of residents received some type of health care in the year prior to the survey. Use of health care was affected by factors such as age, sex, and education. It was also associated with need: people in poor health and those with chronic conditions were more likely to consult all types of health professionals (particularly specialists).
- Residents of inland communities were more likely than coastal residents to consult most types of health professionals, including dentists, and were also more likely to be hospitalized.
- 14% of respondents reported an unmet need for health care in the year prior to the survey. Women, younger adults, and people living in the inland communities were more likely to report unmet needs.
- People had more positive views of the availability and quality of care in the province as a whole than in their home communities. While close to two thirds of residents rated the availability and quality of services in the province as good, only half said this about their local health services.
- Perceptions of availability varied with the type of service required. People who had sought counselling (social worker, counsellor, or psychologist) were more likely than others to be dissatisfied with the availability of services in the region.
- 24% of residents declared that they had a regular medical doctor. In a pattern that is also observed province-wide, the proportion of people with a regular doctor increased with age and with the need for health care.
- Having a regular doctor was associated with more positive perceptions of the availability and quality of health services, and with a tendency to make better use of all types of health services.

## REFERENCES

- Aday, L.A., C.E. Begley, et al. (1999). A framework for assessing the effectiveness, efficiency, and equity of behavioral healthcare. *Am J Manag Care*, 5 Spec No: SP25-44.
- Allen, S.M. & V. Mor (1997). The prevalence and consequences of unmet need. Contrasts between older and younger adults with disability. *Med Care*, 35(11): 1132-48.
- Andersen, R.M. (1995). Revisiting the behavioral model and access to medical care: does it matter? *J Health Soc Behav*, 36(1): 1-10.
- Andersen, R.M., A. McCutcheon, et al. (1983). Exploring dimensions of access to medical care. *Health Serv Res*, 18(1): 49-74.
- Campbell, A. (2002). Type 2 diabetes and children in Aboriginal communities: the array of factors that shape health and access to health care. *Health Law J*, 10: 147-68.
- Carr, W. & Wolfe, S. (1976). Unmet needs as sociomedical indicators. *Int J Health Serv*, 6(3): 417-30.
- Chen, J. & Hou, F. (2002). Unmet needs for health care. *Health Rep*, 13(2): 23-34.
- Conway-Welch, C. (1991). Issues surrounding the distribution and utilization of nurse nonphysician providers in rural America. *J Rural Health*, 7(4 Suppl): 388-401.
- Durand, S. (2006). *L'infirmière praticienne spécialisée : une pratique infirmière avancée en émergence au Québec*. Montreal: Direction de santé publique de Montréal. Conférence donnée dans le cadre des activités scientifiques du GRÉAS 1.
- Fairchild, D.G., Sussman, A.J., et al. (2000). When sick patients switch primary care physicians: the impact on AMCs participating in capitation. *Acad Med*, 75(10): 980-5.
- Fournier, L. (2005-2009). *Transformation de la première ligne en santé mentale au Québec : accompagnement et suivi*. Fondation canadienne de la recherche sur les services de santé, Fonds de recherche en santé du Québec, ministère de la Santé et des Services sociaux du Québec, Groupe interuniversitaire de recherche sur les urgences, Institut national de santé publique du Québec, 15 centres de santé et de services sociaux du Québec.
- Gauthier, J. (2007). *La distribution des services de santé sur un vaste territoire : structurer globalement mais gérer localement pour réduire les inégalités de santé*. In *La décision en santé publique: obligation, négociation, participation?* Montpellier, France: Société française de santé publique.
- Godden, D.J., Ludbrook, A., et al., (2004). Consultant supported intermediate care – a model for remote and island hospitals. *Rural Remote Health*, 4(2): 276.
- Gruen, R.L., T.S. Weeramanthri, et al. (2002). Outreach and improved access to specialist services for indigenous people in remote Australia: the requirements for sustainability. *J Epidemiol Community Health*, 56(7): 517-21.
- Grumbach, K., Selby, J.V., et al. (1999). Resolving the gatekeeper conundrum: what patients value in primary care and referrals to specialists. *Jama*, 282(3): 261-6.
- Harris, S.B., Meltzer, S.J., et al. (1998). New guidelines for the management of diabetes: a physician's guide. Steering Committee for the Revision of the Clinical Practice Guidelines for the Management of Diabetes in Canada. *Cmaj*, 159(8): 973-8.
- Kulig, J.C., Stewart, N.J., et al. (2006). Insights from a national study. *Can Nurse*, 102(4): 16-20.
- Lambrew, J.M., DeFrieze, G.H., et al. (1996). The effects of having a regular doctor on access to primary care. *Med Care*, 34(2): 138-51.
- Larson, S.L. & Fleishman, J.A. (2003). Rural-urban differences in usual source of care and ambulatory service use: analyses of national data using Urban Influence Codes. *Med Care*, 41(7 Suppl): III65-III74.
- Lee, E.J. & O'Neal, S. (1994). A mobile clinic experience: nurse practitioners providing care to a rural population. *J Pediatr Health Care*, 8(1): 12-7.
- Lemchuck-Favel, L. & Jock, R. (2004). Aboriginal Health Systems in Canada: Nine case Studies. *Journal of Aboriginal Health*, 1(1): 28-51.
- Lessard, L. (2005). *La collaboration interdisciplinaire dans les régions isolées du Québec: Le cas des Terres-Cries-de-la-Baie-James*. Quebec: Université Laval, Médecine sociale et préventive.
- Litaker, D., Koroukian, S.M., et al. (2005). Context and healthcare access: looking beyond the individual. *Med Care*, 43(6): 531-40.

- MacLeod, M.L., Kulig, J.C., et al. (2004). The nature of nursing practice in rural and remote Canada. *Can Nurse*, 100(6): 27-31.
- Martens, P.J., Sanderson, D., et al. (2005). Health services use of Manitoba First Nations people: is it related to underlying need? *Can J Public Health* 96 Suppl 1: S39-44.
- Mayer, M.L., Slifkin, R.T., et al. (2005). The effects of rural residence and other social vulnerabilities on subjective measures of unmet need. *Med Care Res Rev*, 62(5): 617-28.
- Meltzer, S., Leiter, L., et al. (1998). 1998 clinical practice guidelines for the management of diabetes in Canada. Canadian Diabetes Association. *Cmaj*, 159, Suppl 8: S1-29.
- Mendoza-Sassi, R. & Beria, J.U. (2003). Prevalence of having a regular doctor, associated factors, and the effect on health services utilization: a population-based study in Southern Brazil. *Cad Saude Publica*, 19(5): 1257-66.
- MSSS (2005). *Plan d'action en santé mentale 2005 - 2010 : La force des liens*. Ministère de la Santé et des Services sociaux, Government of Quebec.
- Nagarajan, K.V. (2004). Rural and remote community health care in Canada: beyond the Kirby Panel Report, the Romanow Report and the federal budget of 2003. *Can J Rural Med*, 9(4): 245-51.
- Reid, R., Haggerty, J., et al. (2002). *Defusing the Confusion: Concepts and Measures of Continuity of Care*. Ottawa: Canadian Health Services Research Foundation.
- Ricketts, T.C. & Goldsmith, L.J. (2005). Access in health services research: the battle of the frameworks. *Nurs Outlook*, 53(6): 274-80.
- Ross, J. (1999). The development of the advanced role of rural nurses in New Zealand. *Aust J Rural Health*, 7(4): 253-7.
- Ryan, B. (1998). Rural medicine: what role should nurse practitioners play? *Cmaj*, 159(1): 68-9.
- Santé Québec. Daveluy, C., Lavallé, C., Clarkson, M., & Robinson, E. (dir.) (1994). *A Health Profile of the Cree, Report of the Santé Québec Health Survey of the James Bay Cree 1991*. Montreal: Ministère de la Santé et des Services sociaux, Government of Quebec.
- Sanmartin, C., Houle, C. et al. (2002). *Accès aux services de soins de santé au Canada, 2001*. Ottawa: Statistics Canada.
- Shah, B.R., Gunraj, N. et al. (2003). Markers of access to and quality of primary care for aboriginal people in Ontario, Canada. *Am J Public Health*, 93(5): 798-802.
- Silverman, B.E., Goodine, W.M., et al. (2001). Learning needs of nurses working in Canada's First Nations communities and hospitals. *J Contin Educ Nurs*, 32(1): 38-45.
- Starkes, J.M., Poulin, C.C., et al. (2005). Unmet need for the treatment of depression in Atlantic Canada. *Can J Psychiatry*, 50(10): 580-90.
- Thouez, J.P., Ekoe, J.M., et al. (1990). Obesity, hypertension, hyperuricemia and diabetes mellitus among the Cree and Inuit of northern Québec. *Arctic Med Res*, 49(4): 180-8.
- Tookenay, V.F. (1996). Improving the health status of aboriginal people in Canada: new directions, new responsibilities. *Cmaj*, 155(11): 1581-1583.
- Trella, R.J. (1989). Clinical nurse practitioners. Identifying their roles. *J Gerontol Nurs*, 15(5): 24-8.
- Van Sickle, D. & Wright, A.L. (2001). Navajo perceptions of asthma and asthma medications: clinical implications. *Pediatrics*, 108(1): E11.
- Véronneau, J., Sirhan, H., et al. (2002). *Rapport sur la santé dentaire crie en Eeyou Itchee (nord du Québec)*. Montreal: Public Health Department, Cree Board of Health and Social Services of James Bay.
- Wardman, D., Clement, K. et al. (2005). Access and utilization of health services by British Columbia's rural Aboriginal population. *Int J Health Care Qual Assur Inc Leadersh Health Serv* 18(2-3): xxvi-xxxii.
- Way, D., Jones, L., et al. (2001). Primary health care services provided by nurse practitioners and family physicians in shared practice. *Cmaj* 165(9): 1210-4.

**APPENDIX**

**Table A1**  
Geographic availability of services in the Iiyiyiu Aschii region compared to the rest of Quebec

	Rest of Quebec	Iiyiyiu Aschii						Sub-region	
		Iiyiyiu Aschii	Group by Community Size				Coastal	Inland	
			Chisasibi (more than 3,000 inhabitants)	Mistissini (2,000 to 3,000 inhabitants)	Middle-size communities (1,000 to 2,000 inhabitants)	Smaller communities (less than 1,000 inhabitants)			
Size of community <sup>a</sup> (average ± SD)	4,533 ± 11,637	2,027 ± 1,097	3,467	2,426	1,323 ± 257	594 ± 127	2,241 ± 1,187	1,679 ± 822	
<b>Local primary care services (average ± SD (median))</b>									
Potential number of service points located within 15 minutes by car	116 ± 161 (32)	0,8 ± 0,4 (1)	1	1	0,4 ± 0,5 (0)	1	0,9 ± 0,4 (1)	0,8 ± 0,4 (1)	
Travel time by car to closest point offering primary care services (in minutes)	2 ± 5 (0)	9 ± 19 (0)	0	0	26 ± 27 (25)	4 ± 6 (0)	5 ± 9 (0)	16 ± 28 (0)	
<b>Geographic availability of hospital services (average ± SD (median))</b>									
Travel time by car to closest hospital offering proximity services (in minutes)	11 ± 16 (10)	190 ± 204 (72)	0	72	336 ± 179 (295)	358 ± 178 (336)	223 ± 221 (295)	136 ± 158 (72)	
Travel time by car to closest hospital offering referral services (in minutes)	17 ± 41 (11)	613 ± 300 (644)	864	266	516 ± 248 (526)	762 ± 330 (851)	798 ± 174 (864)	311 ± 201 (266)	
Travel time by car to closest hospital offering highly specialized services (in minutes)	46 ± 99 (18)	874 ± 410 (864)	1 263	340	809 ± 310 (864)	965 ± 422 (986)	1 165 ± 186 (1 263)	403 ± 166 (340)	

<sup>a</sup> The subjacent territories correspond more or less to the census subdivisions established by Statistics Canada for the year 2001. The major urban centres such as Montreal and Quebec City are subdivided.  
Source: Service de Développement de l'Information, MSSS, 2001.

**Table A2**

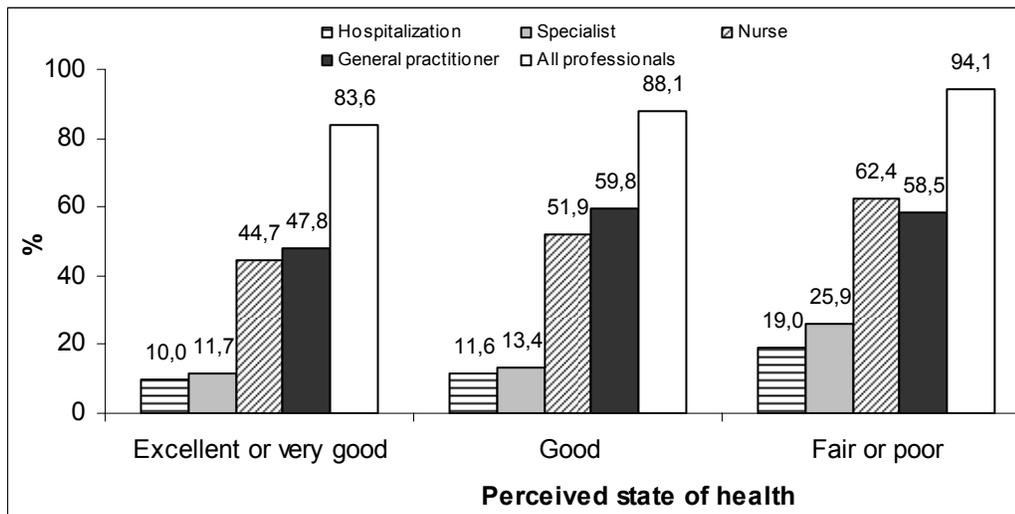
Number of consultations with nurses and general practitioners in the year preceding the survey, among population aged 12 and over; Iiyiyiu Aschii, 2003

Number of Consultations	Nurse	GP
Average number of consultations for those who consulted	6.2 ± 1	3.2 ± 0.2
% who never consulted a nurse/GP	49.4	45.0
% who consulted a nurse/GP 1 to 4 times	35.2	46.2
% who consulted a nurse/GP 5 to 9 times	7.4	4.7
% who consulted a nurse/GP 10 or more times	8.0	4.2

Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

**Figure A1**

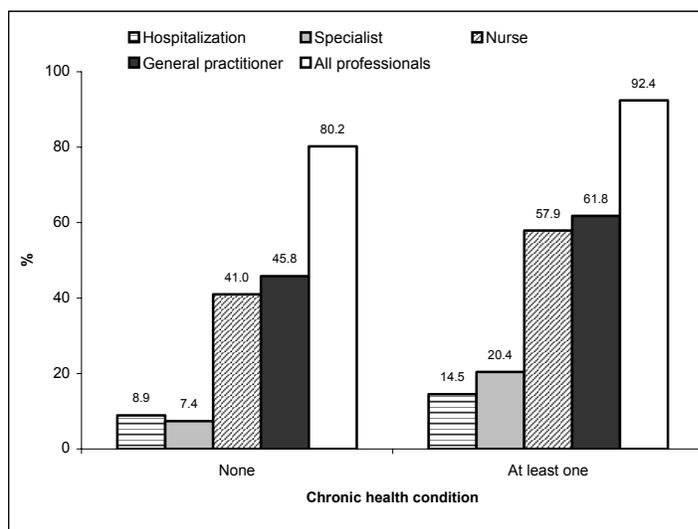
Proportion (%) of the population aged 12 and over having used various health services in the course of the past year, by perceived state of health; Iiyiyiu Aschii, 2003



Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

**Figure A2**

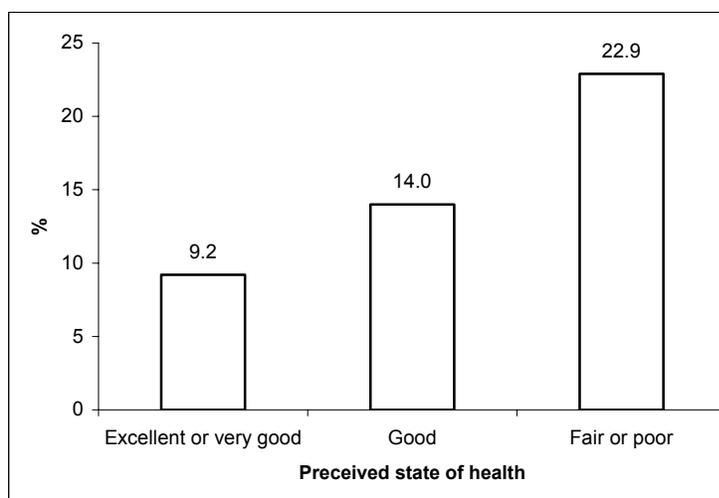
Proportion (%) of the population having used various health services in the course of the past year, among people aged 12 and over with no chronic health conditions versus those reporting at least one; Iiyiyiu Aschii, 2003



Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

**Figure A3**

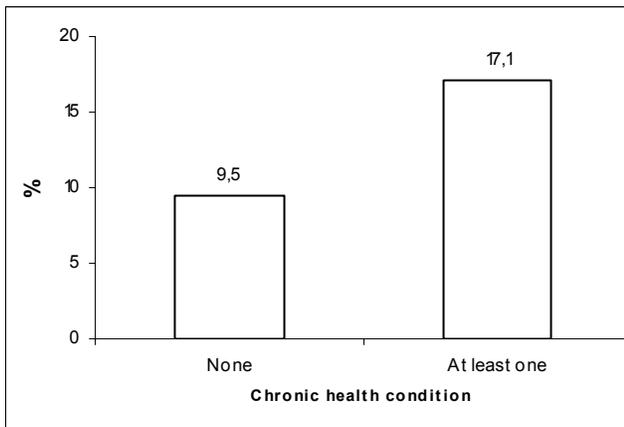
Proportion (%) of the population aged 12 and over reporting unmet needs for services, by perceived state of health; Iiyiyiu Aschii, 2003



Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

**Figure A4**

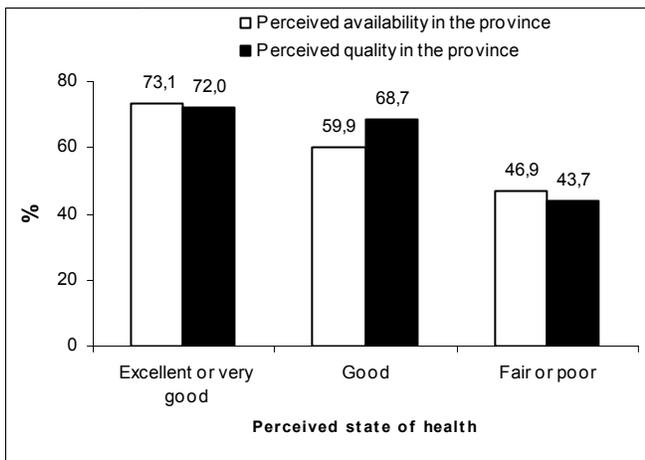
Proportion (%) of the population reporting unmet needs for services, among people aged 12 and over with no chronic health conditions versus those reporting at least one; Iiyiyiu Aschii, 2003



Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

**Figure A5**

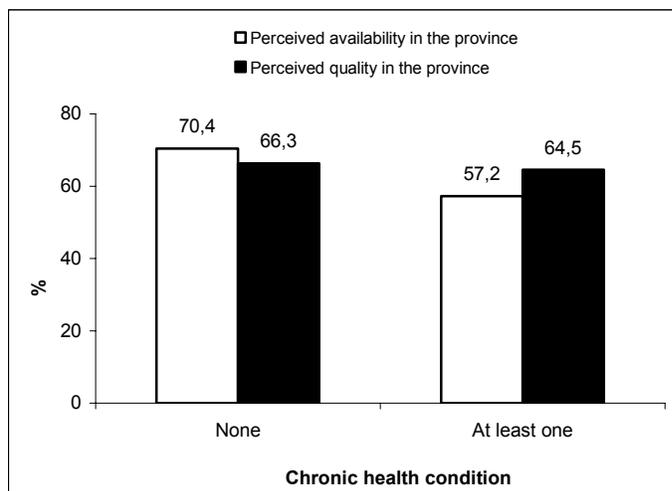
Proportion (%) of the population aged 12 and over with a positive perception (excellent or good) of the availability and quality of services in the province, by perceived state of health (%); Iiyiyiu Aschii, 2003



Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

**Figure A6**

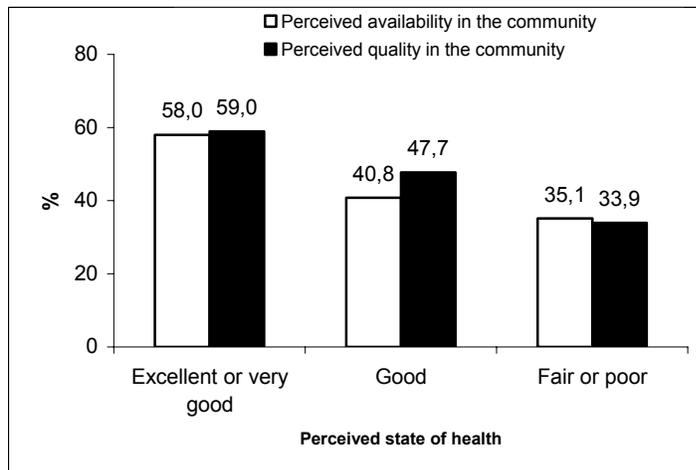
Proportion (%) of the population with a positive perception (excellent or good) of the availability and quality of services in the province, among people aged 12 and over with no chronic health conditions versus those reporting at least one; Iiyiyiu Aschii, 2003



Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

**Figure A7**

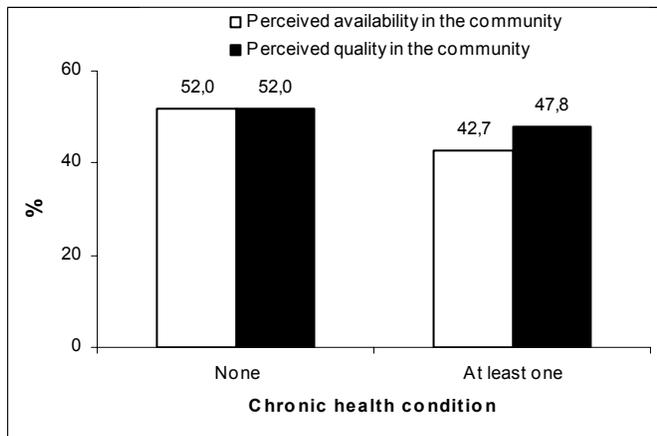
Proportion (%) of the population aged 12 and over with a positive perception (excellent or good) of the availability and quality of services in their community, by perceived state of health; Iiyiyiu Aschii, 2003



Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

**Figure A8**

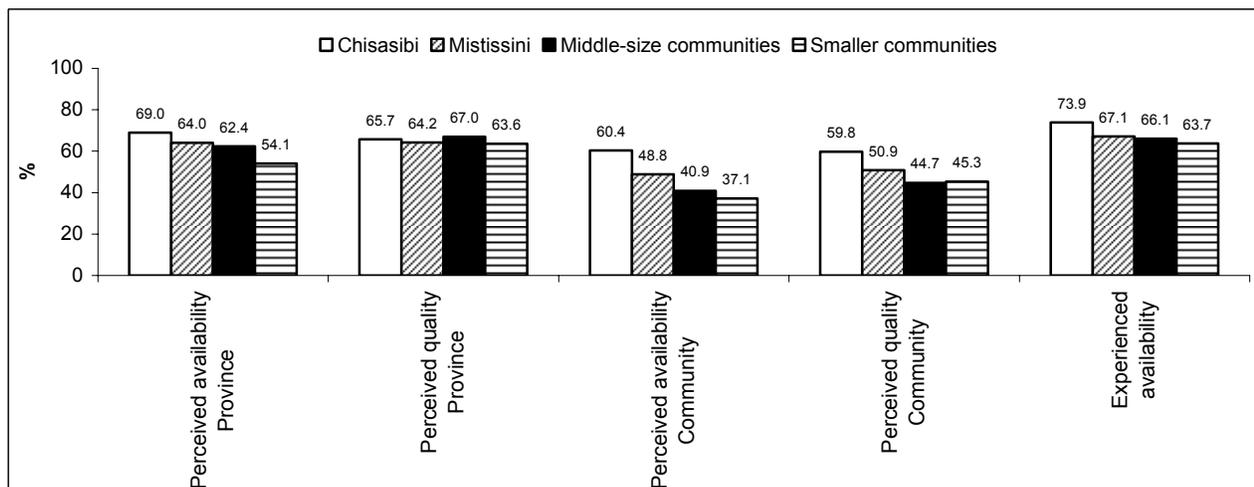
Proportion (%) of the population with a positive perception (excellent or good) of the availability and quality of services in their community, among people aged 12 and over with no chronic health conditions versus those reporting at least one; Iiyiyiu Aschii, 2003



Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

**Figure A9**

Proportion (%) of the population aged 12 and over with a positive perception (excellent or good) of the availability and quality of services in the province and in their community by community size; Iiyiyiu Aschii, 2003



Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

**Figure A10**

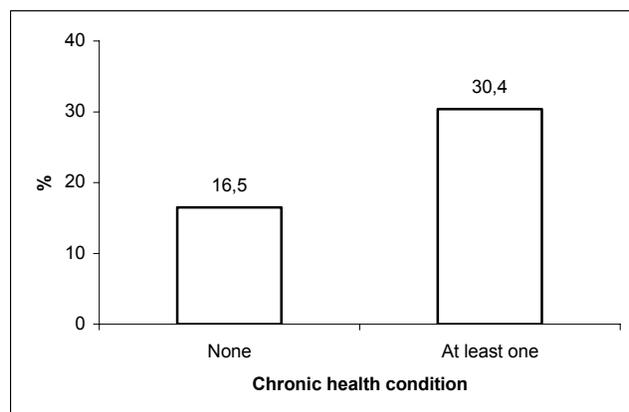
Proportion (%) of people aged 12 and over who say they have a regular doctor, by perceived state of health; Iiyiyiu Aschii, 2003



Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.

**Figure A11**

Proportion (%) of people who say they have a regular doctor, among people aged 12 and over with no chronic health conditions versus those reporting at least one; Iiyiyiu Aschii, 2003



Source: CCHS 2.1 – Iiyiyiu Aschii, 2003.