

# Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey?

Primary Health Care Report Series: Part 2



New Brunswick Health Council | Conseil de la santé  
du Nouveau-Brunswick

Engage. Evaluate. Inform. Recommend.  
Engager. Évaluer. Informer. Recommander.

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New Brunswickers have a right to be aware of the decisions being made, to be part of the decision-making process, and to be aware of the outcomes delivered by the health system and its cost. The New Brunswick Health Council will foster this transparency, engagement, and accountability by engaging citizens in a meaningful dialogue, measuring, monitoring, and evaluating population health and health service quality, informing citizens on health system performance and recommending improvements to health system partners.

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# 1. Executive summary

Assessing the quality of primary health care in New Brunswick is extremely important in the conceptualization of a framework for primary health care reform. Data on the quality and performance of healthcare hold the potential to guide quality improvement activities; redesign services; keep people and organizations accountable for their performance; change policy and practice; and inspire public debate<sup>1</sup>.

In July 2011 the New Brunswick Health Council (NBHC) released the results of its Primary Health Care Survey<sup>2</sup>, with an emphasis on the evaluation of primary health care services at the community level from the citizen's perspective. While our initial report provided key information with respect to accessibility, use of services, satisfaction and health profile, the information included in this report focuses on areas such as patient-provider communication, health barriers, patient safety, citizens' knowledge about health care and chronic conditions, technical quality of clinical care such as blood pressure screening, and equity based on socio-economic status.

Data presented in this report reveals considerable variation across New Brunswick communities for several quality of care indicators. The methodology introduced in this report identifies communities with the greatest potential for improvement. This approach allows for meaningful comparisons to be made across communities and serves as a comprehensive tool for benchmarking.

## Quality of Service

The quality of service as measured in this report for personal family doctors under accessibility, communication, coordination and satisfaction has shown large variations across health zones and New Brunswick communities.

Factors that can have a very strong influence on how citizens rate the overall services received from their personal family doctor are identified, and a correlation analysis has shown that citizens generally give a higher overall satisfaction rating if their doctor gives them enough time to discuss feelings, fears, and concerns about their health, explains test results in a way that they can understand, helps coordinate care from other healthcare providers, and if they are satisfied with the amount of time from booking an appointment to actually seeing their doctor.

Although factors relating to accessibility can also have an influence on how citizens rate the overall services received from their family doctor, a stronger association has been observed for factors under communication and patient-centred care.

## Citizens' Knowledge About Chronic Health Conditions

Factors that can have an influence on citizens' confidence in controlling and managing their health condition are identified, and a correlation analysis has shown that citizens' knowledge about health and their understanding of information about health care is just as important as the quality of services received from their personal family doctor under accessibility, communication, coordination or satisfaction.

For citizens who reported being diagnosed with a chronic condition, knowing how to prevent further problems with their health condition has a strong association with their confidence in controlling and managing their health condition. There is a large variation across New Brunswick communities for citizens who reported that they "strongly agree" in knowing how to prevent further problems with their health condition, with results ranging from 23.4% to 45.7%.

For citizens who reported being diagnosed with a chronic condition, knowing what their medications do has a very strong association with knowing how to prevent further problems with their health condition. There is a large variation across New Brunswick communities for citizens who reported that they "strongly agree" in knowing what their medications do, with results ranging from 25.7% to 56.1%.

Other factors that can have an influence on citizens knowing how to prevent further problems with their health condition are identified, and a correlation analysis has shown that citizens acknowledging that their health largely depends on how well they take care of themselves has a stronger association than the quality of services received from their personal family doctor under accessibility, communication, coordination or satisfaction.

## Screening Tests or Measurements

For citizens who reported being diagnosed with one or more of four select chronic conditions (diabetes, heart disease, stroke or high blood pressure), there is a large variation across New Brunswick communities when citizens are asked if they had screening tests or measurements in the last year such as blood pressure, cholesterol, body weight and blood sugar. Community results range from 85.5% to 98.0% for blood pressure measurement in the last year, from 70.2% to 87.4% for cholesterol, and from 55.5% to 78.9% for body weight. The largest variation was observed for blood sugar measurement, ranging from 64.9% to 94.4%. Even for citizens who reported being diagnosed with high blood pressure, the results by health zone vary from 90.7% to 96.1% for a self-reported blood pressure measurement in the last year.



## Equity Based on Income

From an equity point of view, an income analysis has shown that the prevalence of chronic conditions and certain outcome-related measures vary at different levels of socio-economic status. Lower income citizens generally have far higher self-reported chronic conditions than those with higher income. Widespread disparities are observed, and are given in this report at different age groups.

With respect to outcome-related measures such as citizens' confidence in controlling and managing their health condition, lower income citizens generally have a far lower confidence level than those with higher income. Differences are also noted by age group. For certain health zones, the income gap with respect to citizens' confidence in controlling and managing their health condition is less widespread.

The analysis of outcome-related measures in this report, such as citizens knowing how to prevent further problems with their health condition and self-reported screening tests or measurements, becomes an important first step in identifying (1) self-reported quality of care indicators that can have a strong influence on health outcomes, and (2) New Brunswick health zones and communities that are delivering the best health outcomes.





## 2. Introduction

Primary health care is usually the first point of contact with the health care system. The New Brunswick Health Council (NBHC) 2011 Primary Health Care Survey was conducted with the general population of New Brunswick aged 18 years or older. In this telephone survey, New Brunswickers were asked about their experiences with personal family doctors, nurse practitioners, emergency departments, specialists, after-hours clinics and walk-in clinics, community health centres, ambulance services, alternative practitioners, and Tele-Care.

Although in most cases a specialist will not be the first point of contact with the health care system, a specialist can become the healthcare provider that some citizens see most often and on a regular basis for their health care, and they play an important role in the coordination of care with the citizen's personal family doctor.

Citizens were asked to share their experiences with New Brunswick community health centres. A community health centre is a place where you can see many different health professionals under one roof, such as a doctor, nurse practitioner, nurse, physiotherapist, dietitian, social worker, occupational therapist, respiratory therapist, rehab assistant, or pharmacist. A health service centre is a place where you can see a doctor and a nurse, and possibly a patient service worker. Due to the similarities that exist from a citizen's point of view, results for community health centres should be interpreted with caution as some citizens may have reported their experiences at health service centres.

Citizens could complete the telephone interview in the official language of their choice. Calls were made during the months of February, March and April 2011 to over 108,000 households, which represents about one third of all New Brunswick households. The most comprehensive health care survey undertaken in New Brunswick has resulted in a sample of 14,045 completed surveys.

The large sample size will allow researchers and decision makers to look further than overall provincial results. Twenty-eight (28) New Brunswick primary health care communities were created to provide information that will allow decision makers to respond to the needs of smaller communities, which are often not represented due to the small number of residents generally sampled in NB for national health care surveys. These 28 communities can be combined into the seven NB zone boundaries (health regions) as defined by Statistics Canada and currently used in New Brunswick for higher level statistical reporting for the population.

The objective of this report is to provide baseline data and information for decision makers and policy planners to measure and monitor improvements over time. In using a standardized approach across the province for citizens to express their opinions about the quality of primary health care, differences in performance can be highlighted and facilitate benchmarking across New Brunswick communities.

Measuring citizens' experiences at the community level is an essential component in improving the quality of primary health care. This report presents community data in a variety of formats in a way that is easy to understand, and focuses on areas such as patient-provider communication, health barriers, patient safety, blood pressure screening, and equity based on socio-economic status.

For more information about the 28 New Brunswick primary health care communities, the NBHC encourages New Brunswickers to visit the NBHC website ([www.nbhc.ca](http://www.nbhc.ca)), where an interactive map will provide community profiles and help locate the cities, towns and villages included within each community.

Survey data was weighted by age and gender at the community level based on 2006 Census data. This estimation method is used for each of the 28 communities so that survey results are representative of the actual population. Confidence intervals were calculated at the 95% confidence level to help assess statistical significance.

The coefficient of variation is used to determine the quality level of the estimates. Survey results with a coefficient of variation in the range of 16.6% to 33.3% are considered marginal and are flagged with the letter E accompanied by a warning to caution subsequent users about the high level of variability associated with the estimate. Survey results with a coefficient of variation in excess of 33.3% are considered too unreliable to be published and have been suppressed from this report.

All data are self-reported and are therefore subject to recall errors, and over or under-reporting. The sample design excludes households without telephones, some households that only use cellular phones, and people living in some group homes.

### 3. Quality of Service

Primary health care experiences include several types of health care providers and a wide array of service areas across the province. In this report, the quality of service refers to how citizens evaluate services received from their personal family doctor, nurse practitioner, specialist and community health centre. Results are grouped under four key dimensions of primary health care services: accessibility, communication and patient-centred care, coordination of care, and satisfaction.

Improving **accessibility** to personal family doctors can potentially reduce unnecessary visits to emergency departments or after-hours or walk-in clinics, which in turn can improve continuity of care especially for patients with complex or chronic conditions<sup>3</sup>. Establishing an ongoing relationship with a primary care provider is believed to be important in maintaining health and ensuring appropriate access to health services.

Primary health care should be based on a partnership between health professionals and citizens. **Communication and patient-centred care** is recognized as a dimension of high-quality care; it encompasses shared decision-making and services that respect a citizen's preferences, needs and values. Research demonstrates that when healthcare providers and organizations promote and value patient-centred care, quality and safety of health care rise, satisfaction increases and patient care experience improves<sup>4</sup>.

**Coordination of care** is an important element of primary health. It leads to more appropriate care (for example, through fewer medical errors, more appropriate medication and less re-hospitalization); cost efficiency and cost effectiveness will be enhanced as well<sup>5</sup>. Understanding which components can have the strongest influence on overall **satisfaction** is an example of evidence-based information that is often used to develop a targeted approach in establishing quality improvement priorities.

For each dimension, results are given for the seven New Brunswick zone boundaries (health regions) as defined by Statistics Canada and currently used in New Brunswick for higher level statistical reporting for the population. A map with the seven New Brunswick health zones is given in Appendix A.

#### 3.1 Personal Family Doctor

A personal family doctor is the one you would see if you need a check-up, want advice about a health problem, or get sick or hurt. This does not include specialists who specialize in one area of health care or doctors you would see at an after-hours clinic or a walk-in clinic.

In New Brunswick, 93% of adults have a personal family doctor<sup>2</sup>. The quality of service has been evaluated for personal family doctors in New Brunswick and is given in Table 1 by health zone. Large sample sizes were obtained at the health zone level and several statistical differences are noted.

### *Accessibility*

- ⇒ When asked whether their personal family doctor has an after-hour arrangement when the office is closed, 31.3% of citizens in Zone 1 reported "Yes". This result is statistically higher than all other zones. Results for the other zones vary from 7.0% to 23.9%.
- ⇒ When asked whether their personal family doctor has an after-hour arrangement when the office is closed, only 7.0% of citizens in Zone 5 reported "Yes". This result is statistically lower than all other zones. Results for the other zones vary from 12.3% to 31.3%.
- ⇒ When asked how easy or difficult it is to call their personal family doctor's office during regular practice hours, only 72.5% of citizens in Zone 1 and 72.7% in Zone 6 reported "Very or somewhat easy". These results are statistically lower than many other zones, which vary from 78.3% to 81.8%.
- ⇒ When asked how quickly an appointment can be made with their personal family doctor, 34.1% of citizens in Zone 2, 33.2% in Zone 3 and 36.3% of citizens in Zone 7 reported "On the same day" or "On the next day". These results are statistically higher than all other zones. Results for the other zones vary from 22.6% to 28.5%.

### *Communication and Patient-Centred Care*

- ⇒ When asked how often their personal family doctor explains test results in a way that they can understand, how often their doctor involves them in decisions about their health care and how often their doctor gives enough time to discuss feelings, fears and concerns about their health, citizens in Zone 2 and Zone 3 have better results overall when comparing to the other zones. Results for Zone 6 are statistically lower than many other zones.

### *Coordination of Care*

- ⇒ When asked how often their personal family doctor helps coordinate the care from other healthcare providers and places, 72.9% of citizens in Zone 2 reported "Always". These results are statistically higher than many other zones, which vary from 60.9% to 67.3%.



Primary Health Care Services Received From Personal Family Doctor <i>Results based on a primary health care survey conducted with New Brunswick citizens 18 years of age and older between February and April 2011</i>		Health Zone						
		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
Sample Size (citizens who have a personal family doctor)		n=3,002	n=2,966	n=2,874	n=1,102	n=634	n=1,570	n=1,017
Has a personal family doctor		92.0%	90.7%	92.6%	95.7% 1,2,3,6	96.4% 1,2,3,6	93.1%	94.8% 1,2,3
Accessibility								
P-1	Personal family doctor has an <b>after-hour arrangement</b> when office is closed (% yes)	31.3% 2,3,4,5,6,7	23.9% 3,4,5,6	17.5% 5,6	14.5% 5	7.0%	12.3% 5	20.7% 4,5,6
P-2	Easy or difficult to <b>call personal family doctor's office during regular practice hours</b> (% very or somewhat easy)	72.5%	81.0% 1,3,6	76.0% 1	81.8% 1,3,6	80.9% 1,3,6	72.7%	78.3% 1,6
P-3	<b>How quickly appointment</b> can be made with personal family doctor (% same day or next day)	28.5% 4,5,6	34.1% 1,4,5,6	33.2% 1,4,5,6	23.3%	22.6%	23.8%	36.3% 1,4,5,6
Communication and patient-centred care								
P-4	How often personal family doctor <b>explained test results in a way that patient could understand</b> (% always)	76.4%	80.2% 1,5,6	78.9% 6	77.2%	73.9%	72.3%	76.7%
P-5	How often personal family doctor <b>involved the patient in decisions about their health care</b> (% always)	62.5% 4,6	71.3% 1,4,5,6,7	70.4% 1,4,5,6,7	56.4% 6	58.5% 6	48.8%	61.6% 6
P-6	Has given <b>enough time for patient to discuss feelings, fears and concerns about their health</b> (% always)	67.1%	70.8% 1,4,6	71.3% 1,4,6	63.6%	68.7%	66.2%	66.7%
Coordination of care								
P-7	How often <b>test results have NOT been available</b> to personal family doctor at the time of the visit (% never)	66.6%	68.4% 6	67.8%	66.8%	66.6%	63.4%	65.8%
P-8	How often personal family doctor <b>helped coordinate the care from other healthcare providers and places</b> (% always)	67.3% 4	72.9% 1,4,5,6,7	71.6% 1,4	60.9%	65.5%	67.0%	66.8%
P-9	After being in a hospital or receiving health services at home, seemed <b>informed about the plan for follow-up care</b> (% yes)	83.8%	86.0%	90.8%	85.7%	92.3%	87.7%	83.9%
Satisfaction								
P-10	Satisfaction with <b>amount of time from booking appointment to actually seeing doctor</b> (% very or somewhat satisfied)	82.0%	85.7% 1,3,4,5	82.3%	81.0%	80.8%	84.8%	86.4% 1,3,4,5
P-11	<b>Rating of health care services</b> received from personal family doctor (% 8, 9 or 10 on a scale of zero to ten)	79.9%	83.0% 1	81.3%	81.7%	78.7%	82.0%	81.8%

<sup>1,2,3,4,5,6,7</sup> Indicates whether a zone has a result that is statistically *higher* than other zones. For example, if the result for Zone 3 is 17.5% and has a notation of [5,6] than the result for Zone 3 is statistically higher than the result in Zone 5 and Zone 6. Statistical tests are calculated at a 95% level of confidence.

### *Satisfaction*

- ⇒ When asked about their level of satisfaction with the amount of time between booking an appointment and actually seeing their personal family doctor, 85.7% of citizens in Zone 2 and 86.4% of citizens in Zone 7 reported "Very or somewhat satisfied". This result is statistically higher than many other zones, which vary from 80.8% to 82.3%.

## **3.2 Nurse Practitioner**

Nurse practitioners can diagnose and treat common acute and chronic illnesses, and they have the authority to order diagnostic tests and prescribe medications. Nurse practitioners are employed in a variety of settings, including community health centres, nursing homes, family practice clinics, emergency rooms, outpatient clinics and public health agencies.

Overall in New Brunswick, 5.1% of citizens reported that they had visited a nurse practitioner in the last year<sup>2</sup>. Results pertaining to accessibility, communication, coordination of care and satisfaction are given in Table 2 and comparisons are made between the seven health zones. However, due to the small sample sizes, most results at the health zone level are not statistically different.

## **3.3 Specialist**

Specialists are doctors like surgeons, cardiologists, dermatologists, oncologists, and other doctors who specialize in one area of health care. In New Brunswick, 40.8% of citizens have seen a specialist in the last year<sup>2</sup>. The quality of service has been evaluated for specialists in New Brunswick and is given in Table 3 by health zone. Fairly large sample sizes were obtained at the health zone level and some statistical differences are noted.

### *Communication and Patient-Centred Care*

- ⇒ When asked how often the specialist involves them in decisions about their health care, only 61.4% of citizens in Zone 4 reported "Always". This result is statistically lower than many other zones, which vary from 71.4% to 76.3%.

### *Satisfaction*

- ⇒ When asked about their level of satisfaction with the amount of time between booking an appointment and actually seeing the specialist, only 72.1% of citizens in Zone 2 reported "Very or somewhat satisfied". This result is statistically lower than all other zones. Results for the other zones vary from 79.5% to 82.6%.





Primary Health Care Services Received From Nurse Practitioner		Health Zone						
<i>Results based on a primary health care survey conducted with New Brunswick citizens 18 years of age and older between February and April 2011</i>		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
Sample Size (citizens with at least one visit in the last 12 months)		n=167	n=176	n=150	n=33	n=31	n=136	n=66
At least one visit in the last 12 months		4.7% 4	5.2% 4	4.8% 4	-	4.8% <sup>E</sup>	7.9% 1,2,3,4,5	5.6% 4
Accessibility								
N-1	Nurse practitioner has an <b>after-hour arrangement</b> when office is closed (% yes)	12.0% <sup>E</sup>	25.1% 1,6	21.8% 6	-	F	6.6% <sup>E</sup>	F
N-2	Easy or difficult to <b>call nurse practitioner's office during regular practice hours</b> (% very or somewhat easy)	80.1%	88.1%	84.1%	-	90.5%	82.0%	91.3%
N-3	<b>How quickly appointment</b> can be made with nurse practitioner (% same day or next day)	45.8%	32.2%	59.1% 2,7	-	42.7% <sup>E</sup>	48.7%	30.7% <sup>E</sup>
Communication and Patient-centred care								
N-4	How often nurse practitioner <b>explained test results in a way that patient could understand</b> (% always)	75.6%	82.6%	82.6%	-	64.8% <sup>E</sup>	79.0%	90.2%
N-5	How often nurse practitioner <b>involved the patient in decisions about their health care</b> (% always)	67.4%	81.9% 1,5,6	74.6% 5	-	43.2% <sup>E</sup>	59.8%	74.6% 5
N-6	Has given <b>enough time for patient to discuss feelings, fears and concerns about their health</b> (% always)	81.9%	86.5%	77.9%	-	79.3%	80.8%	88.8%
Coordination of care								
N-7	How often <b>test results have NOT been available</b> to nurse practitioner at the time of the visit (% never)	70.8%	78.7% 5	65.4%	-	48.9% <sup>E</sup>	69.4%	78.0%
N-8	How often nurse practitioner <b>helped coordinate the care from other healthcare providers and places</b> (% always)	61.5%	76.6%	71.1%	-	53.6% <sup>E</sup>	61.6%	72.6%
N-9	After being in a hospital or receiving health services at home, seemed <b>informed about the plan for follow-up care</b> (% yes)	F	F	F	-	F	F	F
Satisfaction								
N-10	Satisfaction with <b>amount of time from booking appointment to actually seeing nurse</b> (% very or somewhat satisfied)	88.4%	90.1%	87.6%	-	85.9%	93.4% 7	76.8%
N-11	<b>Rating of health care services</b> received from nurse practitioner (% 8, 9 or 10 on a scale of zero to ten)	87.0%	81.3%	87.4%	-	85.9%	86.4%	87.9%

<sup>1,2,3,4,5,6,7</sup> Indicates whether a zone has a result that is statistically higher than other zones. For example, if the result for Zone 2 is 25.1% and has a notation of [1,6] then the result for Zone 2 is statistically higher than the result in Zone 1 and Zone 6. Statistical tests are calculated at a 95% level of confidence.

<sup>E</sup> Use with caution (coefficient of variation between 16.6% and 33.3%).  
<sup>F</sup> Too unreliable to be published (coefficient of variation greater than 33.3%).  
 - Result suppressed due to limited number of nurse practitioners in the zone.



Primary Health Care Services Received From Specialist <i>Results based on a primary health care survey conducted with New Brunswick citizens 18 years of age and older between February and April 2011</i>		Health Zone						
		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
Sample Size (citizens with at least one visit in the last 12 months)		n=1,465	n=1,518	n=1,240	n=490	n=275	n=713	n=470
At least one visit in the last 12 months		41.1%	43.8% 3	38.7%	39.3%	39.1%	40.4%	39.9%
Communication and patient-centred care								
S-4	How often specialist <b>explained things in a way that patient could understand</b> (% always)	79.5%	76.5%	80.4%	75.3%	75.6%	75.3%	77.7%
S-5	How often specialist <b>involved the patient in decisions about their health care</b> (% always)	71.4% 4,6	71.7% 4,6	76.3% 1,4,6	61.4%	71.5% 4	65.2%	71.9% 4
S-6	Has given <b>enough time for patient to discuss feelings, fears and concerns about their health</b> (% always)	70.9%	72.0% 4	75.2% 4	64.3%	72.8%	71.6%	71.4%
Coordination of care								
S-7	How often <b>test results have NOT been available</b> to specialist at the time of the visit (% never)	75.2%	73.9%	73.9%	68.7%	75.5%	70.9%	72.1%
S-8	How often specialist <b>helped coordinate tests or follow-ups for care</b> (% always)	74.2% 4	72.7% 4	73.5% 4	63.4%	69.8%	71.6% 4	73.5% 4
Satisfaction								
S-10	Satisfaction with <b>amount of time from booking appointment to actually seeing specialist</b> (% very or somewhat satisfied)	79.8% 2	72.1%	79.5% 2	79.5% 2	81.8% 2	82.6% 2	81.5% 2
S-11	<b>Rating of health care services</b> received from specialist (% 8, 9 or 10 on a scale of zero to ten)	81.5%	79.1%	80.4%	76.1%	80.0%	80.1%	81.9%

<sup>1,2,3,4,5,6,7</sup> Indicates whether a zone has a result that is statistically higher than other zones. For example, if the result for Zone 1 is 71.4% and has a notation of [4,6] than the result for Zone 1 is statistically higher than the result in Zone 4 and Zone 6. Statistical tests are calculated at a 95% level of confidence.

### 3.4 Community Health Centres

A community health centre is a place where you can see many different health professionals under one roof, such as a doctor, nurse practitioner, nurse, physiotherapist, dietitian, social worker, occupational therapist, respiratory therapist, rehab assistant, or pharmacist.

Overall in New Brunswick, 7.3% of citizens reported that they had visited a community health centre in the last year<sup>2</sup>. Results pertaining to accessibility, communication, coordination of care and satisfaction are given in Table 4 and comparisons are made between the seven health zones. However, due to the small sample sizes, most results at the health zone level are not statistically different.



Primary Health Care Services Received At Community Health Centre (CHC) <i>Results based on a primary health care survey conducted with New Brunswick citizens 18 years of age and older between February and April 2011</i>		Health Zone						
		Zone 1	Zone 2	Zone 3	Zone 4	Zone 5	Zone 6	Zone 7
Sample Size (at least one visit in the last 12 months)		n=256	n=284	n=285	n=29	n=75	n=148	n=72
At least one visit in the last 12 months		7.0% 4	7.7% 4	7.8% 4	2.3% <sup>E</sup>	11.0% 1,4,7	8.6% 4	6.9% 4
Accessibility								
C-1	Community health centre has an <b>after-hour arrangement</b> when centre is closed (% yes)	22.5%	18.0%	22.4%	F	16.9% <sup>E</sup>	21.8%	F
C-12	<b>Wait time</b> at community health centre (% less than 1 hour)	71.6%	79.9% 5	82.5% 1,5	87.6% 5	62.5%	74.9%	73.0%
Communication and patient-centred care								
C-5	How often health professionals at CHC <b>involved the patient in decisions about their health care</b> (% always)	59.6%	66.4% 6	57.4%	50.0% <sup>E</sup>	58.6%	52.1%	67.4%
C-6	Health professionals have given <b>enough time to discuss feelings, fears and concerns about health</b> (% always)	61.7%	63.7%	66.7%	54.2% <sup>E</sup>	56.5%	58.8%	75.1%
Coordination of care								
C-8	How often health professionals at CHC <b>helped coordinate the care from other healthcare providers and places</b> (% always)	56.9%	64.7%	56.6%	62.1% <sup>E</sup>	47.9%	59.1%	70.1%
Satisfaction								
C-11	<b>Rating of health care services</b> received at community health centre (% 8, 9 or 10 on a scale of zero to ten)	70.0%	72.2%	80.3% 1	66.8%	70.0%	79.8%	68.7%

<sup>1,2,3,4,5,6,7</sup> Indicates whether a zone has a result that is statistically higher than other zones. For example, if the result for Zone 3 is 82.5% and has a notation of [1,5] than the result for Zone 3 is statistically higher than the result in Zone 1 and Zone 5. Statistical tests are calculated at a 95% level of confidence.

<sup>E</sup> Use with caution (coefficient of variation between 16.6% and 33.3%).

<sup>F</sup> Too unreliable to be published (coefficient of variation greater than 33.3%).

## 4. Factors That Can Have An Influence on the Overall Rating of Services from Personal Family Doctor

The quality of service is presented in section 3.1 for personal family doctors in New Brunswick by health zone under accessibility, communication and patient-centred care, coordination of care, and satisfaction. With a large sample of 14,045 total survey respondents for overall New Brunswick, primary health care services can also be evaluated at the community level for personal family doctors.

Twenty-eight (28) New Brunswick primary health care communities were created to provide information that will allow decision makers to respond to the needs of smaller communities. These 28 communities can be combined into the seven NB zone boundaries (health regions) as defined by Statistics Canada and currently used in New Brunswick for higher level statistical reporting for the population. A map with the 28 primary health care communities is given in Appendix B.

In section 3.1, the overall rating of health care services received from personal family doctors was given in Table 1 under the satisfaction dimension. In this section, factors that can have a strong influence on the overall rating of services received from personal family doctors are identified and for each of these factors survey results are presented by community.

Several methods can be used to compare community results, from a simple ranking of survey scores to statistical significance testing. The method chosen to compare community results in this report will be referred to as a *tiering analysis*. A tiering analysis can be used for any question in the survey relating to the quality of care and provides a snapshot of which communities have the greatest potential for improvement. The tiering analysis methodology is described in Appendix C.

With respect to factors that can have a very strong influence on the overall rating of services received from personal family doctors, a correlation analysis has shown that citizens generally give a higher overall satisfaction rating if their doctor gives them enough time to discuss feelings, fears, and concerns about their health, explains test results in a way that they can understand, helps coordinate care from other healthcare providers, and if they are satisfied with the amount of time from booking an appointment to actually seeing their doctor.

## 4.1 Accessibility

Improving accessibility to personal family doctors can potentially reduce unnecessary visits to emergency departments or after-hours or walk-in clinics, which in turn can improve continuity of care especially for patients with complex or chronic conditions<sup>3</sup>. Establishing an ongoing relationship with a primary care provider is believed to be important in maintaining health and ensuring appropriate access to health services.

### *Calling personal family doctor's office during regular hours*

Under accessibility, there is a strong association (correlation coefficient = 0.39) between the overall rating of services received from personal family doctors and how easy or difficult it is for citizens to call their personal family doctor's office during regular practice hours. In Table 5, a community tiering analysis was performed on the percentage of citizens who reported that it is "very or somewhat easy" to call their family doctor's office during regular hours. The 28 community scores range from 69.4% to 91.8%.

- ⇒ The tiering analysis in Table 5 shows that the low score obtained in Table 1 for Zone 1 (72.5%) is mostly driven by communities 12 and 14 as these two communities have a score that is in Tier 3.
- ⇒ The tiering analysis in Table 5 shows that the low score obtained in Table 1 for Zone 6 (72.7%) is attributable to all four communities within this zone (4,5,6,7) as all four of these communities have a score that is in Tier 3.

### *Making an appointment with personal family doctor*

Under accessibility, there is a strong association (correlation coefficient = 0.30) between the overall rating of services received from personal family doctors and how quickly citizens can make an appointment with their personal family doctor. In Table 6, a community tiering analysis was performed on the percentage of citizens who reported that they can make an appointment with their family doctor "on the same day or next day". There is a large variability between the 28 communities, with scores ranging from 13.8% to 65.1%.

- ⇒ The tiering analysis in Table 6 shows that the lower score obtained in Table 1 for Zone 5 (22.6%) is attributable to both communities within this zone (2,3) as both of these communities have a score that is either in Tier 4 or Tier 5.
- ⇒ The tiering analysis in Table 6 shows that the lower score obtained in Table 1 for Zone 4 (23.3%) is mostly driven by communities 1 and 28 as these two communities have a score that is either in Tier 4 or Tier 5.

Table 5

# Quality of Service: Personal Family Doctor

# Accessibility: Calling During Regular Hours

Score: How easy or difficult is it to call your personal family doctor's office during regular practice hours to get health information or make an appointment? (% very or somewhat easy)

Results within each tier are ranked by community score

Community	Sample size	Estimated population	Score	Confidence Interval		Tier
				from	to	
26	240	7,510	91.8%	88.3%	95.2%	1
19	361	8,115	87.9%	84.6%	91.2%	1
20	293	10,744	85.7%	81.8%	89.7%	1
1	197	4,227	84.7%	79.7%	89.6%	1
24	294	7,978	84.4%	80.3%	88.4%	1
8	220	6,669	83.3%	78.4%	88.1%	2
17	280	7,618	83.2%	78.8%	87.5%	2
3	370	11,317	82.1%	78.3%	86.0%	2
27	349	12,711	82.1%	78.1%	86.0%	2
28	546	21,094	82.0%	78.8%	85.2%	2
10	456	15,513	81.6%	78.1%	85.1%	2
18	1850	83,349	80.7%	78.9%	82.5%	2
2	254	10,154	79.9%	75.0%	84.7%	2
13	213	8,161	79.5%	74.1%	84.8%	2
16	426	16,100	79.5%	75.7%	83.3%	2
15	154	3,656	79.2%	72.9%	85.5%	2
23	295	8,200	78.9%	74.3%	83.4%	2
11	180	5,472	78.8%	72.9%	84.6%	2
25	595	19,634	77.4%	74.1%	80.7%	2
21	291	10,457	77.4%	72.6%	82.1%	2
9	790	27,595	77.3%	74.4%	80.2%	2
4	599	26,891	74.3%	70.8%	77.8%	3
5	337	11,292	73.2%	68.5%	77.8%	3
12	578	22,281	72.8%	69.2%	76.3%	3
7	307	10,035	72.3%	67.4%	77.2%	3
22	842	56,821	71.5%	68.5%	74.5%	3
14	1380	84,431	70.2%	67.8%	72.6%	3
6	306	10,959	69.4%	64.3%	74.5%	3

Community with highest score

All communities in Tier 2 have a score that is significantly lower than the highest score in Tier 1

All communities in Tier 3 have a score that is significantly lower than the highest score in Tier 2

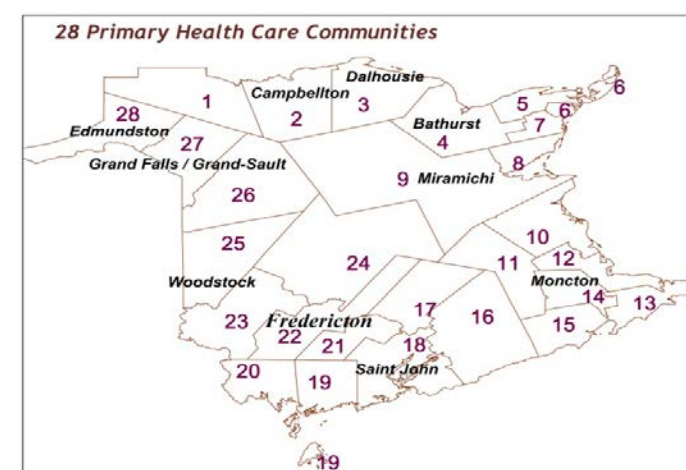


Table 6

## Quality of Service: Personal Family Doctor

## Accessibility: Same Day or Next Day Appointment

Score: Thinking of the last time you were sick or needed medical attention, how quickly could you get an appointment to see your personal family doctor? (% on the same day or next day)

Results within each tier are  
ranked by community score

Community	Sample size	Estimated population	Score	Confidence Interval		Tier
				from	to	
26	225	7,095	65.1%	59.0%	71.3%	1
15	147	3,537	45.2%	37.3%	53.0%	2
8	207	6,212	43.5%	36.8%	50.1%	2
23	286	8,060	40.1%	34.6%	45.7%	2
24	282	7,669	38.2%	32.6%	43.7%	2
20	277	10,384	37.9%	32.3%	43.5%	2
19	336	7,642	36.1%	31.1%	41.1%	2
9	736	25,715	35.4%	32.0%	38.8%	2
25	557	18,528	35.2%	31.3%	39.1%	2
11	171	5,237	32.1%	25.2%	39.0%	2
17	267	7,317	32.0%	26.5%	37.5%	2
18	1762	79,750	35.0%	32.8%	37.2%	3
4	559	24,909	31.2%	27.4%	35.0%	3
27	312	11,411	31.0%	26.0%	36.1%	3
14	1280	77,759	30.5%	28.0%	33.0%	3
16	385	14,787	29.6%	25.1%	34.1%	3
22	800	53,946	29.3%	26.2%	32.5%	4
12	516	20,052	27.5%	23.7%	31.3%	4
10	407	14,158	27.3%	23.1%	31.6%	4
21	264	9,388	25.2%	20.1%	30.4%	4
3	344	10,599	24.9%	20.4%	29.4%	4
1	165	3,551	24.6%	18.2%	31.1%	4
2	237	9,491	20.6%	15.5%	25.7%	5
6	263	9,502	20.2%	15.4%	25.0%	5
5	303	9,713	20.2%	15.8%	24.7%	5
28	475	18,352	19.4%	15.9%	22.9%	5
7	285	9,186	15.1%	11.0%	19.1%	5
13	194	7,441	13.8%	9.0%	18.6%	5

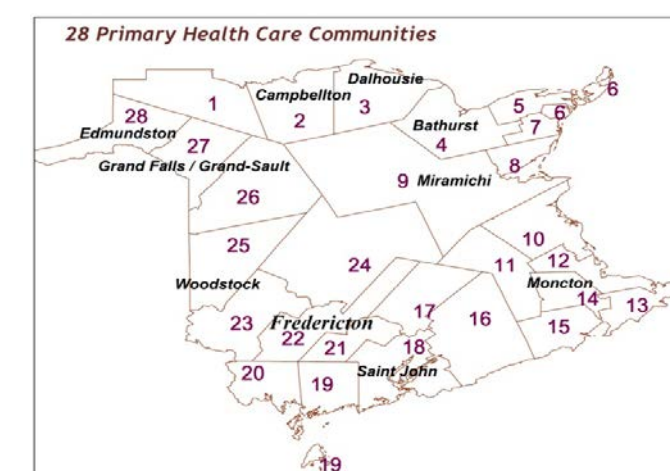
Community with highest score

All communities in Tier 2 have a score that is significantly lower than the highest score in Tier 1

All communities in Tier 3 have a score that is significantly lower than the highest score in Tier 2

All communities in Tier 4 have a score that is significantly lower than the highest score in Tier 3

All communities in Tier 5 have a score that is significantly lower than the highest score in Tier 4



New Brunswick  
Health Council

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

Confidence interval calculated at a 95% level of confidence



- ⇒ The tiering analysis in Table 6 shows that the lower score obtained in Table 1 for Zone 6 (23.8%) is mostly driven by communities 5, 6 and 7 as these three communities have a score that is in Tier 5.
- ⇒ The tiering analysis in Table 6 shows that the lower score obtained in Table 1 for Zone 1 (28.5%) is mostly driven by community 13 as this community has a score that is in Tier 5.

## 4.2 Communication and patient-centred care

Primary health care should be based on a partnership between health professionals and citizens. Communication and patient-centred care is recognized as a dimension of high-quality care; it encompasses shared decision-making and services that respect a citizen's preferences, needs and values. Research demonstrates that when healthcare providers and organizations promote and value patient-centred care, quality and safety of health care rise, satisfaction increases and patient care experience improves<sup>4</sup>.

Although factors relating to accessibility can have an influence on how citizens rate the overall services received from their family doctor, a stronger association has been observed for factors under communication and patient-centred care.

### *Explaining test results in a way that patient can understand*

Under communication and patient-centred care, there is a very strong association (correlation coefficient = 0.51) between the overall rating of services received from personal family doctors and how often personal family doctors explain test results in a way that the citizen can understand. In Table 7, a community tiering analysis was performed on the percentage of citizens who reported that their family doctor "always" explains test results in a way that they can understand. The 28 community scores range from 64.4% to 82.9%.

- ⇒ The tiering analysis in Table 7 shows that the low score obtained in Table 1 for Zone 6 (72.3%) is mostly driven by communities 5, 6 and 7 as these three communities have a score that is in Tier 2.

### *Involving the patient in decisions about their health care*

Under communication and patient-centred care, there is a strong association (correlation coefficient = 0.40) between the overall rating of services received from personal family doctors and how often personal family doctors involve patients in decisions about their health care. In Table 8, a community tiering analysis was performed on the percentage of citizens who reported that their family doctor "always" involves them in decisions. The 28 community scores range from 45.0% to 74.5%.

**Table 7**

**Quality of Service:  
Personal Family Doctor**

**Communication and Patient-Centred Care:  
Explaining Test Results**

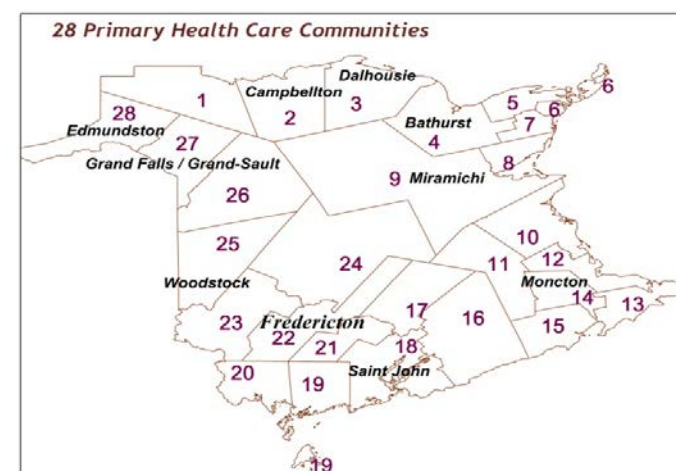
Score: In the last 12 months, how often did your personal family doctor explain your test results in a way that you could understand? (% always)

Results within each tier are ranked by community score

Community	Sample size	Estimated population	Score	Confidence Interval		Tier
				from	to	
17	225	5,739	82.9%	78.1%	87.7%	1
26	209	6,287	80.8%	75.5%	86.1%	1
18	1483	63,677	80.8%	78.8%	82.8%	1
22	672	42,902	80.6%	77.6%	83.6%	1
20	238	8,354	80.6%	75.6%	85.5%	1
16	326	11,740	80.0%	75.8%	84.3%	1
27	285	9,836	79.7%	75.1%	84.3%	1
10	371	12,218	79.2%	75.1%	83.2%	1
24	229	5,781	78.3%	73.0%	83.5%	1
3	316	9,133	77.8%	73.3%	82.3%	1
12	453	16,157	77.5%	73.7%	81.3%	1
19	292	6,205	77.0%	72.3%	81.7%	1
4	485	20,829	77.0%	73.3%	80.7%	1
8	164	4,628	77.0%	70.7%	83.3%	1
28	450	16,115	76.7%	72.9%	80.6%	1
9	618	19,650	76.7%	73.4%	80.0%	1
1	144	2,879	76.6%	69.9%	83.3%	1
11	127	3,385	76.6%	69.3%	83.8%	1
23	235	5,849	76.4%	71.1%	81.7%	1
14	1102	62,313	76.1%	73.6%	78.5%	1
25	462	14,153	76.0%	72.2%	79.8%	1
15	131	3,046	75.0%	67.7%	82.3%	1
21	225	7,511	73.9%	68.3%	79.6%	1
13	158	5,642	73.6%	66.8%	80.4%	1
5	269	8,656	72.3%	67.0%	77.5%	2
2	220	8,249	69.7%	63.7%	75.7%	2
7	261	8,201	69.3%	63.8%	74.8%	2
6	249	8,371	64.4%	58.6%	70.3%	2

Community with highest score

All communities in Tier 2 have a score that is significantly lower than the highest score in Tier 1



New Brunswick Health Council

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

Confidence interval calculated at a 95% level of confidence

**Table 8**

**Quality of Service:  
Personal Family Doctor**

**Communication and Patient-Centred Care:  
Involving in Decisions**

Score: In the past 12 months, how often did your personal family doctor involve you in decisions about your health care? (% always)

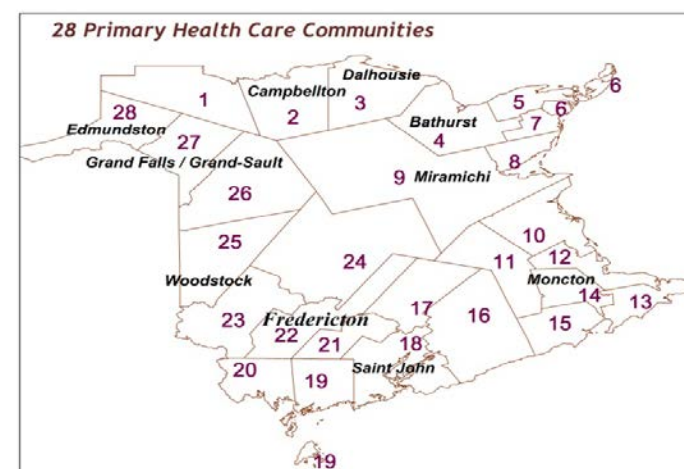
Results within each tier are ranked by community score

Community	Sample size	Estimated population	Score	Confidence Interval		Tier
				from	to	
26	215	6,532	74.5%	68.8%	80.2%	1
18	1608	70,934	73.0%	70.9%	75.2%	1
23	258	6,940	72.7%	67.4%	78.1%	1
22	723	46,970	72.2%	69.0%	75.5%	1
20	252	9,018	71.9%	66.5%	77.4%	1
25	501	15,758	70.4%	66.4%	74.3%	1
11	143	4,202	69.5%	62.1%	76.9%	1
19	315	6,843	69.0%	64.0%	74.0%	1
17	247	6,547	68.5%	62.8%	74.2%	1
16	354	13,270	68.2%	63.4%	73.0%	1
15	134	3,130	67.5%	59.7%	75.2%	1
13	174	6,151	67.1%	60.2%	74.0%	1
24	254	6,624	67.0%	61.3%	72.6%	1
21	249	8,590	66.3%	60.5%	72.1%	1
14	1155	66,440	63.8%	61.0%	66.5%	2
9	666	21,710	63.7%	60.1%	67.3%	2
3	328	9,945	62.8%	57.6%	67.9%	2
27	306	10,661	61.0%	55.6%	66.4%	2
12	484	17,853	59.8%	55.5%	64.1%	2
8	171	5,124	58.6%	51.4%	65.9%	2
10	381	12,731	57.9%	53.1%	62.8%	2
28	434	15,845	54.7%	50.1%	59.3%	3
4	495	21,347	54.2%	49.8%	58.5%	3
2	214	8,323	53.6%	47.0%	60.2%	3
1	148	2,974	52.1%	44.3%	60.0%	3
6	247	9,218	45.6%	39.5%	51.7%	3
7	267	8,366	45.4%	39.5%	51.3%	3
5	267	8,652	45.0%	39.1%	50.9%	3

Community with highest score

All communities in Tier 2 have a score that is significantly lower than the highest score in Tier 1

All communities in Tier 3 have a score that is significantly lower than the highest score in Tier 2



New Brunswick  
Health Council

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)  
Confidence interval calculated at a 95% level of confidence

- ⇒ The tiering analysis in Table 8 shows that the low score obtained in Table 1 for Zone 6 (48.8%) is attributable to all four communities within this zone (4,5,6,7) as all four of these communities have a score that is in Tier 3.
- ⇒ The tiering analysis in Table 8 shows that the lower score obtained in Table 1 for Zone 4 (56.4%) is attributable to all three communities within this zone (1,27,28) as all three of these communities have a score that is either in Tier 2 or in Tier 3.
- ⇒ The tiering analysis in Table 8 shows that the lower score obtained in Table 1 for Zone 5 (58.5%) is attributable to both communities within this zone (2,3) as both of these communities have a score that is either in Tier 2 or in Tier 3.
- ⇒ The tiering analysis in Table 8 shows that the lower score obtained in Table 1 for Zone 7 (61.6%) is attributable to both communities within this zone (8,9) as both of these communities have a score that is in Tier 2.
- ⇒ The tiering analysis in Table 8 shows that the lower score obtained in Table 1 for Zone 1 (62.5%) is mostly driven by communities 10, 12 and 14 as these three communities have a score that is in Tier 2.

### *Giving enough time for patient to discuss feelings, fears and concerns about their health*

Under communication and patient-centred care, there is a very strong association (correlation coefficient = 0.53) between the overall rating of services received from personal family doctors and how often personal family doctors give enough time for patients to discuss feelings, fears and concerns about their health. In Table 9, a community tiering analysis was performed on the percentage of citizens who reported that their family doctor “always” gives them enough time. The 28 community scores range from 61.8% to 78.3%.

- ⇒ The tiering analysis in Table 9 shows that the lower score obtained in Table 1 for Zone 4 (63.6%) is mostly driven by communities 27 and 28 as these two communities have a score that is either in Tier 2 or Tier 3.
- ⇒ The tiering analysis in Table 9 shows that the lower score obtained in Table 1 for Zone 6 (66.2%) is mostly driven by communities 4, 6 and 7 as these three communities have a score that is in Tier 2.
- ⇒ The tiering analysis in Table 9 shows that the lower score obtained in Table 1 for Zone 1 (67.1%) is mostly driven by communities 12 and 14 as these two communities have a score that is in Tier 2.

**Table 9**

**Quality of Service:  
Personal Family Doctor**

**Communication and Patient-Centred Care:  
Giving Enough Time**

Score: In the last 12 months, how often has your personal family doctor given you enough time to discuss your feelings, fears and concerns about your health? (% always)

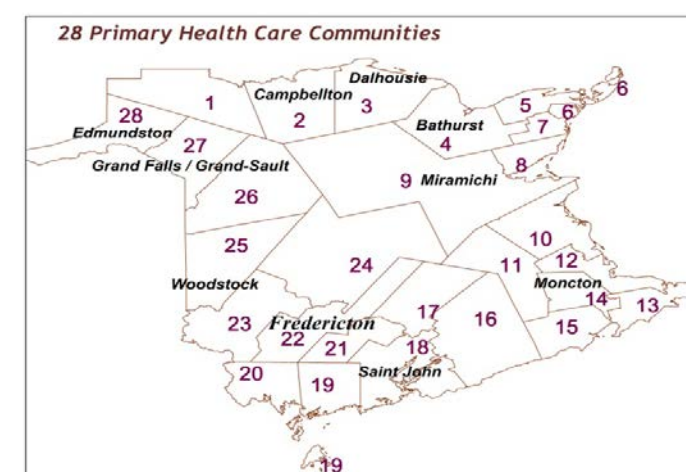
Results within each tier are  
ranked by community score

Community	Sample size	Estimated population	Score	Confidence Interval		Tier
				from	to	
23	256	6,767	78.3%	73.4%	83.3%	1
17	231	6,020	77.4%	72.1%	82.7%	1
15	121	2,798	73.7%	66.0%	81.3%	1
26	202	6,082	72.1%	66.0%	78.1%	1
18	1585	68,723	71.4%	69.2%	73.6%	1
21	232	7,888	71.4%	65.7%	77.1%	1
20	246	8,768	71.3%	65.7%	76.8%	1
3	313	9,406	71.2%	66.3%	76.2%	1
19	300	6,283	71.1%	66.1%	76.1%	1
1	155	3,141	70.9%	63.9%	77.8%	1
13	174	6,247	70.7%	64.1%	77.4%	1
25	484	14,769	70.2%	66.2%	74.2%	1
10	379	12,422	69.9%	65.4%	74.4%	1
24	240	6,212	69.6%	63.9%	75.3%	1
5	272	8,638	69.5%	64.1%	74.8%	1
11	138	3,896	67.2%	59.5%	74.9%	1
22	716	46,005	70.0%	66.7%	73.3%	2
9	636	20,662	68.1%	64.5%	71.7%	2
16	345	12,589	67.9%	63.0%	72.7%	2
4	497	21,245	66.8%	62.7%	70.9%	2
12	463	16,858	66.8%	62.5%	71.0%	2
14	1163	66,141	66.1%	63.4%	68.8%	2
2	214	8,305	65.8%	59.5%	72.1%	2
6	250	8,973	65.4%	59.6%	71.2%	2
27	292	10,237	64.3%	58.9%	69.7%	2
8	161	4,726	63.6%	56.3%	70.9%	2
7	268	8,339	62.6%	56.9%	68.3%	2
28	446	16,030	61.8%	57.3%	66.2%	3

Community with highest score

All communities in Tier 2 have a score that is significantly lower than the highest score in Tier 1

Community in Tier 3 has a score that is significantly lower than the highest score in Tier 2



### Overall score for communication and patient-centred care

All three factors within communication and patient-centre care presented in this section (explaining, involving, and giving enough time) have a strong or very strong association with how citizens rate the overall services received from their personal family doctor. An overall *communication and patient-centred score* was created for each of the 28 communities by combining the tiering analysis results obtained for these three individual survey questions.

In Figure 1 the overall community scores are categorized and shown on a map. The methodology for creating the overall score is described in Appendix D. Results shown in Figure 1 mirror the observations given in section 3.1 where communities in Zone 2 and Zone 3 are showing better results overall with respect to the quality of service under communication and patient-centred care.

### 4.3 Coordination of Care

Coordination of care is an important element of primary health. It leads to more appropriate care (for example, through fewer medical errors, more appropriate medication and less re-hospitalization); cost efficiency and cost effectiveness will be enhanced as well<sup>5</sup>.

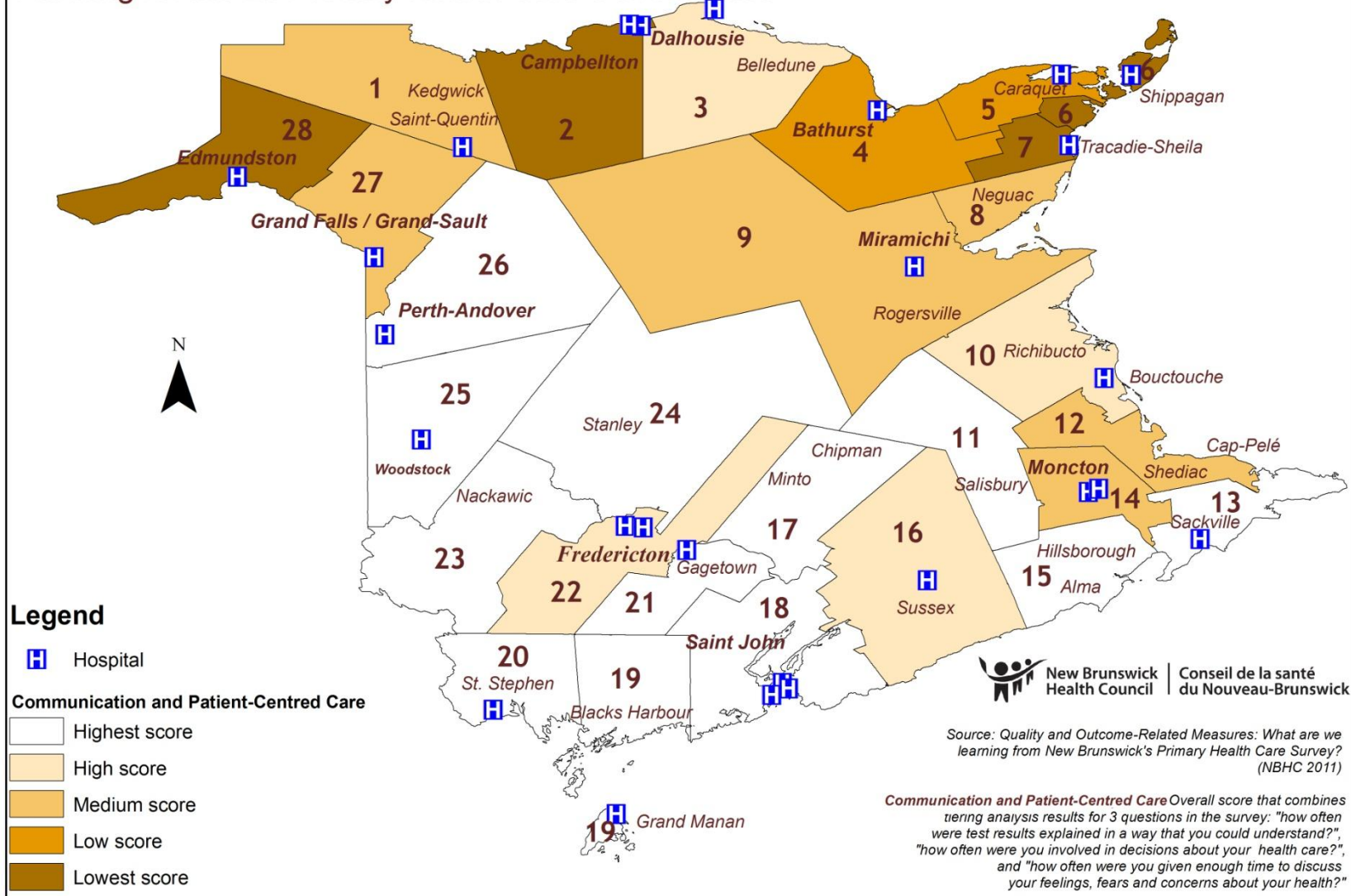
Under coordination of care, there is a very strong association (correlation coefficient = 0.50) between the overall rating of services received from personal family doctors and how often personal family doctors help coordinate the care from other healthcare providers and places. In Table 10, a community tiering analysis was performed on the percentage of citizens who reported that their family doctor “always” coordinates the care from other healthcare providers and places. The 28 community scores range from 58.7% to 82.0%.

- ⇒ The tiering analysis in Table 10 shows that the lower score obtained in Table 1 for Zone 4 (60.9%) is attributable to all three communities within this zone (1,27,28) as all three of these communities have a score that is either in Tier 2 or in Tier 3.
- ⇒ The tiering analysis in Table 10 shows that the lower score obtained in Table 1 for Zone 5 (65.5%) is attributable to both communities within this zone (2,3) as both of these communities have a score that is in Tier 2.
- ⇒ The tiering analysis in Table 10 shows that the lower score obtained in Table 1 for Zone 7 (66.8%) is attributable to both communities within this zone (8,9) as both of these communities have a score that is in Tier 2.



Figure 1

# **Communication and Patient-Centred Care: Services received from personal family doctor** Ranking for the 28 Primary Health Care Communities



**Table 10**

**Quality of Service:  
Personal Family Doctor**

**Coordination of Care:  
Coordinating Care From Other Health Professionals**

Score: In the last 12 months, how often did your personal family doctor help you coordinate the care from other healthcare providers and places when you needed it? (% always)

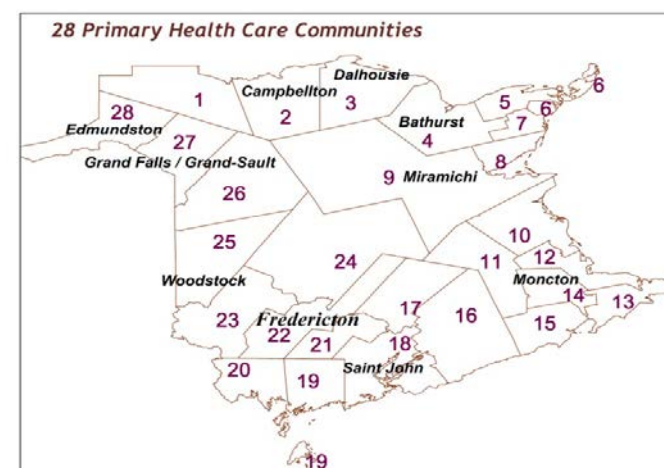
Results within each tier are ranked by community score

Community	Sample size	Estimated population	Score	Confidence Interval		Tier
				from	to	
26	150	4,470	82.0%	75.9%	88.0%	1
21	172	5,845	78.0%	71.9%	84.1%	1
17	164	4,034	76.5%	70.1%	82.8%	1
5	221	6,984	75.6%	70.0%	81.2%	1
13	131	4,830	74.5%	67.1%	81.9%	1
16	248	9,040	74.1%	68.7%	79.4%	1
18	1203	52,991	73.8%	71.3%	76.2%	1
10	311	10,228	72.7%	67.9%	77.6%	1
23	179	4,755	72.4%	65.9%	78.8%	1
25	381	11,717	71.9%	67.5%	76.4%	1
15	101	2,333	71.1%	62.4%	79.7%	1
19	233	4,982	70.8%	65.1%	76.5%	1
24	173	4,455	70.0%	63.3%	76.7%	1
20	183	5,859	69.6%	63.0%	76.2%	1
22	539	34,328	70.8%	67.0%	74.6%	2
4	398	17,253	68.6%	64.1%	73.1%	2
9	494	15,953	68.3%	64.3%	72.3%	2
14	893	51,076	67.4%	64.4%	70.5%	2
3	240	7,077	67.3%	61.5%	73.1%	2
27	225	7,727	66.7%	60.7%	72.8%	2
2	151	5,740	65.5%	58.0%	72.9%	2
12	342	12,271	64.8%	59.8%	69.8%	2
11	108	3,153	64.0%	55.1%	72.9%	2
6	213	7,348	63.5%	57.2%	69.9%	2
8	121	3,633	62.7%	54.2%	71.1%	2
1	126	2,540	62.0%	53.7%	70.2%	2
7	216	6,744	59.5%	53.1%	66.0%	3
28	355	12,543	58.7%	53.7%	63.8%	3

Community with highest score

All communities in Tier 2 have a score that is significantly lower than the highest score in Tier 1

All communities in Tier 3 have a score that is significantly lower than the highest score in Tier 2



New Brunswick Health Council

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

Confidence interval calculated at a 95% level of confidence



- ⇒ The tiering analysis in Table 10 shows that the lower score obtained in Table 1 for Zone 6 (67.0%) is mostly driven by communities 4, 6 and 7 as these three communities have a score that is either in Tier 2 or Tier 3.
- ⇒ The tiering analysis in Table 10 shows that the lower score obtained in Table 1 for Zone 1 (67.3%) is mostly driven by communities 11, 12 and 14 as these three communities have a score that is in Tier 2.

#### 4.4 Satisfaction with Wait Time

Under satisfaction, there is a very strong association (correlation coefficient = 0.53) between the overall rating of services received from personal family doctors and how satisfied citizens are at the amount of time from booking an appointment to actually seeing their doctor. In Table 11, a community tiering analysis was performed on the percentage of citizens who reported that they are “very or somewhat satisfied” with the amount of time from booking an appointment to seeing their family doctor. The 28 community scores range from 76.4% to 91.0%.

- ⇒ The tiering analysis in Table 11 shows that the lower score obtained in Table 1 for Zone 5 (80.8%) is mostly driven by community 3 as this community has a score that is in Tier 2.
- ⇒ The tiering analysis in Table 11 shows that the lower score obtained in Table 1 for Zone 4 (81.0%) is mostly driven by communities 1 and 27 as these communities have a score that is in Tier 2.
- ⇒ The tiering analysis in Table 11 shows that the lower score obtained in Table 1 for Zone 1 (82.0%) is mostly driven by communities 11, 12 and 14 as these communities have a score that is in Tier 2.
- ⇒ The tiering analysis in Table 11 shows that the lower score obtained in Table 1 for Zone 3 (82.3%) is mostly driven by communities 21, 22, 23, and 25 as these communities have a score that is in Tier 2.

#### 4.5 Citizens' Knowledge about Health Care

The degree to which citizens understand information about health care can have an influence on how they rate the overall services received from their personal family doctor. In fact, there is a strong association (correlation coefficient = 0.34) between the overall rating of services received from personal family doctors and how easy or difficult it is for citizens to know where to go when they need health care.

**Table 11**

**Quality of Service:  
Personal Family Doctor**

**Satisfaction:  
Wait Time for Appointment**

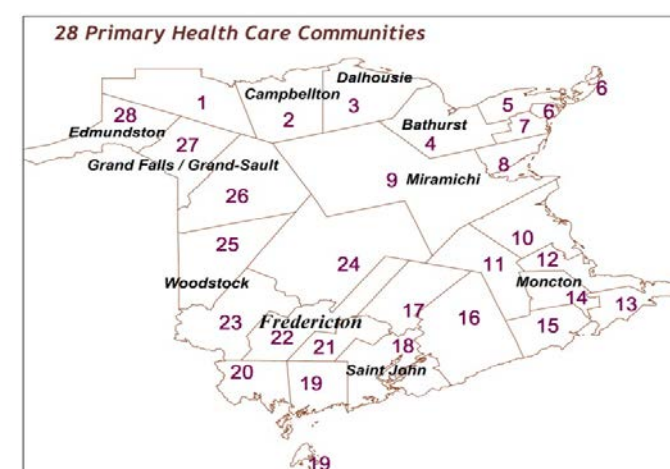
Score: Thinking of visits to your personal family doctor in the last 12 months, how satisfied are you with the amount of time from booking the appointment to actually seeing your doctor?  
(% very or somewhat satisfied)

Results within each tier are  
ranked by community score

Community	Sample size	Estimated population	Score	Confidence Interval		Tier
				from	to	
26	224	6,838	91.0%	87.4%	94.7%	1
19	329	7,214	90.1%	87.0%	93.3%	1
10	410	13,663	89.4%	86.5%	92.4%	1
15	146	3,408	87.9%	82.7%	93.0%	1
5	301	9,719	87.2%	83.5%	90.9%	1
20	268	9,561	87.1%	83.1%	91.0%	1
4	544	23,747	87.1%	84.3%	89.8%	1
9	701	23,282	86.6%	84.1%	89.1%	1
8	190	5,659	86.1%	81.3%	91.0%	1
24	270	7,123	85.9%	81.8%	90.0%	1
18	1728	76,447	85.9%	84.2%	87.5%	1
17	257	6,827	85.8%	81.6%	90.0%	1
28	483	17,615	84.5%	81.4%	87.7%	1
2	230	9,066	83.3%	78.5%	88.0%	1
13	184	6,687	82.8%	77.4%	88.1%	1
25	538	17,016	83.6%	80.5%	86.7%	2
16	389	14,518	83.6%	79.9%	87.2%	2
23	276	7,356	82.5%	78.1%	86.9%	2
6	282	10,336	82.3%	77.9%	86.7%	2
12	520	19,357	82.0%	78.7%	85.2%	2
11	157	4,611	81.3%	75.3%	87.3%	2
21	266	9,283	81.2%	76.6%	85.8%	2
14	1252	73,460	80.5%	78.4%	82.7%	2
22	778	51,073	80.1%	77.3%	82.9%	2
7	282	8,876	80.0%	75.4%	84.6%	2
3	351	10,508	79.1%	75.0%	83.3%	2
1	166	3,317	77.8%	71.7%	84.0%	2
27	318	11,046	76.4%	71.8%	81.0%	2

Community with highest score

All communities in Tier 2 have a score that is  
significantly lower than the highest score in Tier 1



New Brunswick  
Health Council

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

Confidence interval calculated at a 95% level of confidence

In Table 12, a community tiering analysis was performed on the percentage of citizens who gave an 8, 9 or 10 on a scale of zero to ten when asked how easy or difficult it is to know where to go when they need health care (where 0 is very difficult and 10 is very easy). The 28 community scores range from 68.1% to 84.4%. Communities 6 and 7 have the greatest potential for improvement, as these two communities have a score that is in Tier 3.

## 4.6 Health Barriers

Health barriers can have an influence on how citizens rate the overall services received from their personal family doctor. In Table 13, fourteen health barriers are given for overall New Brunswick. Difficulties relating to cost and wait times are the barriers reported most often by New Brunswickers.

Among the 14 health barriers considered in this report, “waiting too long to get an appointment” had the strongest association with how citizens rate the overall services from their personal family doctor (correlation coefficient = 0.30). This is in line with observations highlighted in section 4.4 regarding the very strong association between the overall rating of services received from personal family doctors and how satisfied citizens are at the amount of time from booking an appointment to actually seeing their doctor. An association was observed for other health barriers included in this report; however the relationship with the overall family doctor rating was not as strong (correlation coefficient less or equal to 0.21).

The 14 health barriers included in this report are also available by community on the New Brunswick Health Council web site ([www.nbhc.ca](http://www.nbhc.ca)) as an addendum to each community's profile and individual results.

**Table 12**      **Citizens' Knowledge About Health Care:**  
**Knowing Where To Go**

Score: Thinking of the health care services you received in the last 12 months, using any number from 0 to 10, where 0 is very difficult and 10 is very easy, what number would you use to rate how difficult or how easy it is to understand where to go when you need health care? (% 8, 9 or 10)

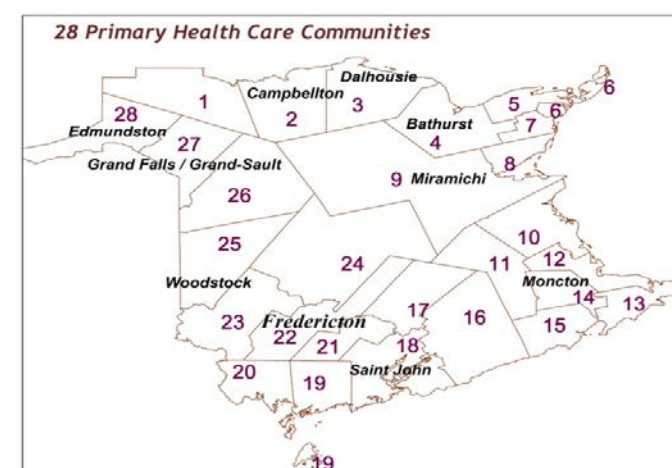
Results within each tier are ranked by community score

Community	Sample size	Estimated population	Score	Confidence Interval		Tier
				from	to	
17	290	7,989	84.4%	80.3%	88.5%	1
20	301	11,199	83.0%	78.8%	87.2%	1
26	249	8,025	82.6%	77.9%	87.2%	1
2	260	10,607	82.4%	77.8%	87.0%	1
16	451	17,189	81.5%	77.9%	85.0%	1
25	597	19,700	80.5%	77.4%	83.7%	1
10	461	15,867	80.0%	76.4%	83.6%	1
23	312	8,932	78.2%	73.7%	82.7%	1
9	820	28,870	78.0%	75.2%	80.8%	1
4	603	27,164	78.0%	74.7%	81.3%	1
22	887	61,746	77.8%	75.1%	80.5%	1
28	553	21,532	76.9%	73.5%	80.4%	1
19	412	9,541	76.8%	72.8%	80.8%	1
24	311	8,523	76.6%	72.0%	81.2%	1
1	211	4,638	76.5%	70.9%	82.1%	1
11	185	5,615	76.4%	70.3%	82.4%	1
15	172	4,365	75.4%	69.1%	81.7%	1
18	2015	92,150	77.3%	75.5%	79.1%	2
14	1475	92,686	74.8%	72.6%	77.0%	2
13	226	8,577	74.4%	68.8%	80.0%	2
3	378	11,697	74.1%	69.7%	78.4%	2
21	331	12,879	73.5%	68.8%	78.2%	2
12	616	23,992	73.1%	69.6%	76.5%	2
8	222	6,852	73.1%	67.3%	78.8%	2
5	342	11,560	72.3%	67.6%	77.0%	2
27	348	12,969	71.1%	66.4%	75.8%	2
7	329	10,939	68.1%	63.1%	73.1%	3
6	349	12,827	68.1%	63.2%	72.9%	3

Community with highest score

All communities in Tier 2 have a score that is significantly lower than the highest score in Tier 1

All communities in Tier 3 have a score that is significantly lower than the highest score in Tier 2



New Brunswick Health Council

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)  
Confidence interval calculated at a 95% level of confidence

<b>Health Barriers</b> <i>Not counting if you stayed overnight in a hospital, think of any difficulties you may have ever experienced in getting the health care you needed, have you ever....</i>	<b>NB</b> (% yes)
Found the cost for medication too high	48.6%
Waited too long to get an appointment	40.8%
Waited too long at the office while waiting for your appointment	40.7%
Found the cost for ambulance services too high	35.6%
Found the cost for treatments or procedures too high	21.9%
Needed health care services, but it was not available in your area	21.2%
Needed health care services, but it was not available at the time you needed it	21.1%
Been unable to leave the house because of a health problem	16.9%
Had trouble finding your way around the health care system	12.4%
Experienced difficulties getting the health care you needed because you did not have a personal family doctor	11.9%
Not understood the information that was given by the doctor, nurse, or other health care professional	10.8%
Not known who to call or where to go to get health care	9.8%
Had transportation problems	7.3%
Had a language problem with your health care provider	6.9%



## 5. Patient Safety

The safety of citizens is paramount in providing patient-centred care in a primary health care setting, and looking at legitimate patient concerns is an important element of health care quality.

Several methods can be used to compare survey results across health zones, from a simple ranking of survey scores to statistical significance testing. The methodology chosen to compare zone results will be referred to as a *tiering analysis*. A tiering analysis can be used for any question in the survey relating to the quality of care and provides a snapshot of which health zones have the greatest potential for improvement. The tiering analysis methodology is described in Appendix C.

In Table 14, a tiering analysis by health zone was performed on the percentage of citizens who reported that they were harmed because of a medical error or mistake as a result of health care services received in the last year (excluding overnight stays in a hospital).

A map with the seven health zones is given in Appendix A. The 7 zone scores range from 2.4% to 6.1%. Zone 4 has the greatest potential for improvement, as this health zone has a score that is in Tier 2.

## Table 14 Patient Safety: Harmed Because of a Medical Error or Mistake

Score: Not counting if you stayed overnight in a hospital, do you or your family members believe that you were harmed because of a medical error or mistake as a result of health care services you received in the last 12 months? (% yes)

Results within each tier  
are ranked by zone score

Zone	Sample size	Estimated population	Score	Confidence Interval		Tier
				from	to	
7	993	33,361	2.4%	1.4%	3.3%	1
1	3011	142,715	2.9%	2.3%	3.5%	1
2	3036	122,943	3.3%	2.7%	3.9%	1
3	2861	121,347	3.5%	2.8%	4.2%	1
6	1589	60,619	3.5%	2.6%	4.4%	1
5	623	21,604	4.4%	2.8%	6.0%	1
4	1066	36,835	6.1%	4.7%	7.5%	2

Zone with lowest score

Zone in Tier 2 has a score that is significantly higher than the lowest score in Tier 1

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

Confidence interval calculated at a 95% level of confidence





## 6. Outcome-Related Measures

Factors that can influence a citizen's knowledge about their health condition are identified and data is presented at the community level. Several methods can be used to compare community results, from a simple ranking of survey scores to statistical significance testing. The methodology chosen to compare community results will be referred to as a *tiering analysis*. A tiering analysis can be used for any question in the survey relating to the quality of care and provides a snapshot of which communities have the greatest potential for improvement. The tiering analysis methodology is described in Appendix C.

Unless otherwise noted, analyses in this section are given for citizens who have reported being diagnosed with at least one of the following chronic conditions: arthritis, asthma, chronic pain, emphysema or COPD, cancer, diabetes, depression, a mood disorder other than depression, heart disease, stroke, high blood pressure or hypertension, or gastric reflux (GERD).

### 6.1 Controlling and Managing Chronic Health Condition

In New Brunswick, 40.1% of citizens with at least one chronic condition are "very confident" that they can control and manage their health condition. In Table 15, a community tiering analysis was performed on the percentage of citizens who reported that they are "very confident" in controlling and managing their health condition. The 28 community scores range from 32.9% to 48.5%.

Factors that can have an influence on citizens' confidence in controlling and managing their health condition are identified, and a correlation analysis has shown that citizens' knowledge about health, such as knowing where to go when they need health care, how often they receive conflicting information from different healthcare providers, how often they have difficulty understanding written information about medical information, or how often medical information is explained to them in a way that they can understand is just as important (correlation coefficients ranging from 0.14 to 0.19) as the quality of services received from their personal family doctor under accessibility, communication, coordination or satisfaction (correlation coefficients ranging from 0.11 to 0.23).

Knowing what medications do can also influence citizens' confidence in controlling and managing their health condition (correlation coefficient = 0.19). There is a strong association between citizens knowing how to prevent further problems with their health condition and citizens' confidence in controlling and managing their health condition (correlation coefficient = 0.31).

**Table 15 Outcome-Related Measures:**  
**Controlling and Managing Health Condition**

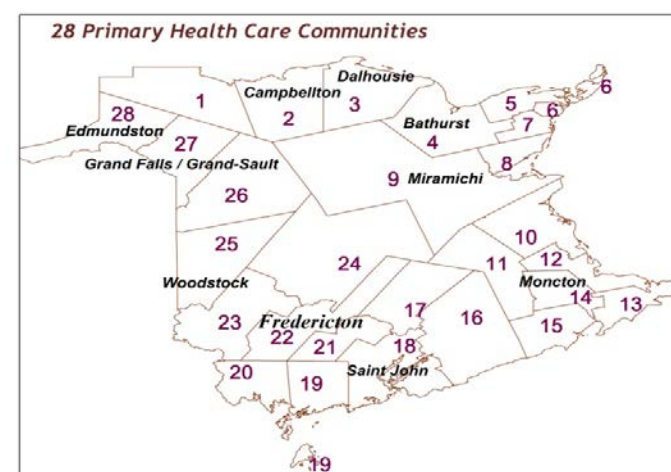
Score: How confident are you that you can control and manage your health condition? (% very confident)

Results within each tier are ranked by community score

Community	Sample size	Estimated population	Score	Confidence Interval		Tier
				from	to	
20	219	7,814	48.5%	42.0%	55.0%	1
21	233	7,670	47.1%	40.8%	53.4%	1
11	133	3,558	47.0%	38.7%	55.4%	1
1	140	2,832	45.9%	37.8%	53.9%	1
4	438	19,011	44.4%	39.8%	48.9%	1
18	1504	61,967	43.6%	41.1%	46.0%	1
23	232	5,974	42.3%	36.1%	48.6%	1
22	643	40,357	41.7%	37.9%	45.5%	1
16	329	11,185	41.4%	36.1%	46.6%	1
14	1058	61,222	40.7%	37.7%	43.6%	1
13	163	5,846	40.1%	32.7%	47.6%	1
2	189	7,057	40.1%	33.2%	47.0%	1
5	236	7,703	39.8%	33.6%	45.9%	1
24	231	5,718	39.5%	33.4%	45.7%	1
15	129	3,078	39.4%	31.2%	47.7%	1
28	405	13,676	39.1%	34.4%	43.8%	1
6	265	8,698	37.5%	31.8%	43.2%	1
8	156	4,103	37.0%	29.6%	44.5%	1
7	243	7,822	37.0%	31.0%	43.0%	1
17	230	5,966	36.3%	30.2%	42.4%	1
19	319	6,480	36.4%	31.3%	41.6%	2
3	287	8,520	35.8%	30.4%	41.3%	2
25	417	12,239	35.2%	30.7%	39.7%	2
9	595	19,043	34.9%	31.1%	38.6%	2
26	179	5,214	34.0%	27.2%	40.8%	2
12	423	14,794	33.9%	29.5%	38.4%	2
10	351	10,987	32.9%	28.1%	37.7%	2
27	230	7,663	32.9%	26.9%	38.9%	2

Community with highest score

All communities in Tier 2 have a score that is significantly lower than the highest score in Tier 1



New Brunswick Health Council

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

Confidence interval calculated at a 95% level of confidence

In Table 16, a community tiering analysis was performed on the percentage of citizens who reported that they “strongly agree” to knowing how to prevent further problems with their health condition. The 28 community scores range from 23.4% to 45.7%. Communities 7, 8 and 28 have the greatest potential for improvement, as these three communities have a score that is in Tier 3.

- ⇒ The tiering analysis in Table 16 shows that the low score obtained in the Overall New Brunswick Health Profile<sup>2</sup> for Zone 4 (26.2%) is attributable to all three communities within this zone (1,27,28) as all three of these communities have a score that is either in Tier 2 or in Tier 3.
- ⇒ The tiering analysis in Table 16 shows that the low score obtained in the Overall New Brunswick Health Profile<sup>2</sup> for Zone 6 (33.1%) is mostly driven by communities 5, 6 and 7 as these three communities have a score that is either in Tier 2 or Tier 3.
- ⇒ The tiering analysis in Table 16 shows that the low score obtained in the Overall New Brunswick Health Profile<sup>2</sup> for Zone 7 (33.4%) is attributable to both communities within this zone (8,9) as both communities have a score that is either in Tier 2 or in Tier 3.

## 6.2 Knowing How to Prevent Further Problems with Chronic Health Condition

In New Brunswick, 38.1% of citizens with at least one chronic condition “strongly agree” that they know how to prevent further problems with their health condition<sup>2</sup>. A community tiering analysis was given in Table 16. Factors that can have an influence on citizens knowing how to prevent further problems with their health condition are identified, and for some of these factors survey results are given by community.

A correlation analysis has shown that there is a very strong association between citizens knowing what their medications do and citizens knowing how to prevent further problems with their health condition (correlation coefficient = 0.51). In Table 17, a community tiering analysis was performed on the percentage of citizens who reported that they “strongly agree” to knowing what their medications do. The 28 community scores range from 25.7% to 56.1%. Communities with the greatest potential for improvement are 1, 5, 6, 7, 8, 10 and 28 as these seven communities have a score that is in Tier 3.

- ⇒ The tiering analysis in Table 17 shows that the low score obtained in the Overall New Brunswick Health Profile<sup>2</sup> for Zone 4 (32.3%) is attributable to all three communities within this zone (1,27,28) as all three of these communities have a score that is either in Tier 2 or Tier 3.

**Table 16 Outcome-Related Measures:**  
**Knowing How To Prevent Further Problems**

Score: After I read the following statement, please tell me if you strongly agree, agree, disagree or strongly disagree: "I know how to try to help prevent further problems with my health condition." (% strongly agree)

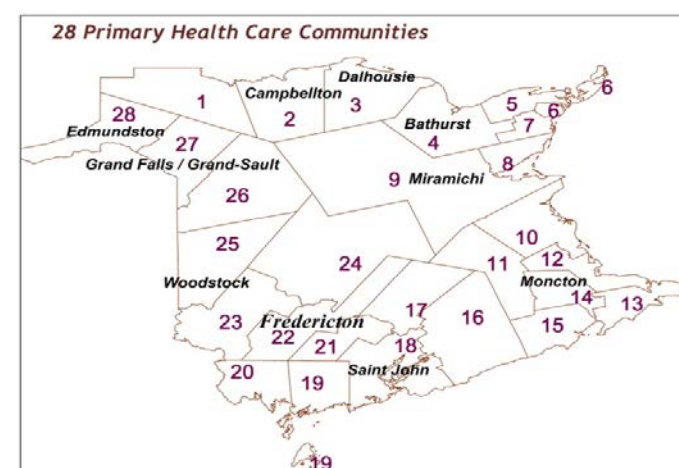
Results within each tier are ranked by community score

Community	Sample size	Estimated population	Score	Confidence Interval		Tier
				from	to	
22	639	40,101	45.7%	41.9%	49.5%	1
20	218	7,791	44.4%	37.9%	50.9%	1
18	1485	61,364	44.4%	41.9%	46.9%	1
21	228	7,534	44.0%	37.7%	50.4%	1
24	232	5,738	43.3%	37.0%	49.5%	1
13	161	5,873	42.0%	34.5%	49.5%	1
3	281	8,398	41.1%	35.5%	46.8%	1
26	177	5,145	41.1%	34.0%	48.2%	1
14	1051	60,882	40.6%	37.7%	43.5%	1
16	328	11,133	39.8%	34.6%	45.0%	1
4	434	18,788	38.8%	34.3%	43.4%	1
17	227	5,903	38.8%	32.5%	45.0%	1
25	413	12,127	38.2%	33.6%	42.8%	1
11	134	3,599	37.0%	29.0%	45.1%	1
23	229	5,902	36.2%	30.1%	42.3%	1
9	588	18,830	36.0%	32.2%	39.8%	2
19	313	6,402	34.3%	29.2%	39.4%	2
2	192	7,133	33.1%	26.5%	39.7%	2
5	234	7,609	32.8%	26.9%	38.8%	2
10	346	10,888	32.2%	27.3%	37.0%	2
12	420	14,704	30.9%	26.6%	35.3%	2
6	261	8,587	29.9%	24.4%	35.4%	2
1	135	2,741	28.8%	21.3%	36.2%	2
27	229	7,606	28.3%	22.5%	34.0%	2
15	127	2,975	24.9%	17.5%	32.2%	2
7	239	7,683	25.7%	20.2%	31.1%	3
28	401	13,564	25.6%	21.4%	29.8%	3
8	156	4,103	23.4%	16.9%	29.9%	3

Community with highest score

All communities in Tier 2 have a score that is significantly lower than the highest score in Tier 1

All communities in Tier 3 have a score that is significantly lower than the highest score in Tier 2



New Brunswick Health Council

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)  
Confidence interval calculated at a 95% level of confidence

**Table 17 Outcome-Related Measures:  
Knowing What Medications Do**

Score: After I read the following statement, please tell me if you strongly agree, agree, disagree or strongly disagree: "I know what each of my prescribed medications do." (% strongly agree)

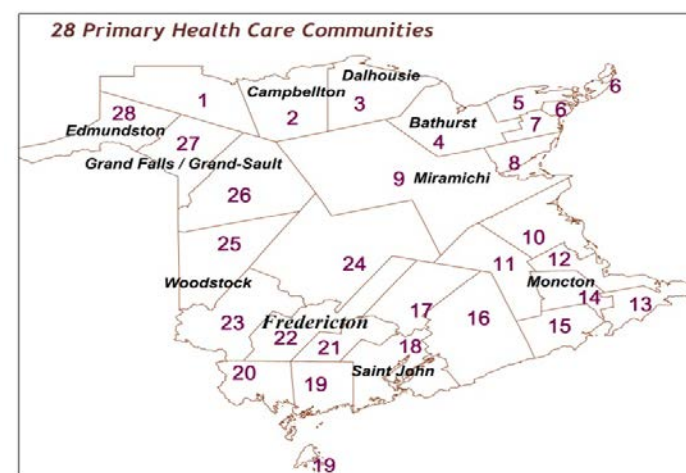
Results within each tier are ranked by community score

Community	Sample size	Estimated population	Score	Confidence Interval		Tier
				from	to	
18	1255	49,264	56.1%	53.3%	58.8%	1
20	179	6,058	56.0%	48.9%	63.2%	1
21	196	6,156	54.0%	47.2%	60.9%	1
22	543	32,505	54.0%	49.8%	58.1%	1
13	129	4,466	52.8%	44.3%	61.3%	1
14	874	47,733	51.7%	48.4%	55.0%	1
17	185	4,720	51.0%	43.9%	58.1%	1
24	201	4,540	50.5%	43.8%	57.3%	1
19	263	5,098	49.3%	43.4%	55.2%	1
11	114	2,870	48.2%	39.2%	57.2%	1
23	196	4,937	47.8%	41.0%	54.7%	1
26	154	4,199	47.5%	39.8%	55.2%	1
25	342	9,450	48.2%	43.0%	53.3%	2
16	273	8,609	46.6%	40.8%	52.4%	2
9	490	14,693	44.8%	40.5%	49.1%	2
3	248	7,054	40.9%	34.9%	46.9%	2
27	199	6,348	40.6%	33.9%	47.3%	2
4	368	15,231	40.4%	35.5%	45.4%	2
15	108	2,471	40.2%	31.2%	49.3%	2
12	349	11,596	39.0%	34.0%	44.1%	2
2	162	5,656	38.7%	31.3%	46.1%	2
10	286	8,570	34.5%	29.1%	39.9%	3
8	125	3,237	31.5%	23.5%	39.5%	3
1	109	2,028	31.0%	22.6%	39.5%	3
5	185	5,742	28.8%	22.4%	35.3%	3
28	343	10,944	28.2%	23.5%	32.9%	3
6	218	7,001	27.8%	21.9%	33.6%	3
7	200	6,078	25.7%	19.7%	31.6%	3

Community with highest score

All communities in Tier 2 have a score that is significantly lower than the highest score in Tier 1

All communities in Tier 3 have a score that is significantly lower than the highest score in Tier 2



- ⇒ The tiering analysis in Table 17 shows that the low score obtained in the Overall New Brunswick Health Profile<sup>2</sup> for Zone 6 (33.0%) is attributable to all four communities within this zone (4,5,6,7) as all four of these communities have a score that is either in Tier 2 or Tier 3.
- ⇒ The tiering analysis in Table 17 shows that the low score obtained in the Overall New Brunswick Health Profile<sup>2</sup> for Zone 5 (40.1%) is attributable to both communities within this zone (2,3) as both communities have a score that is in Tier 2.

A correlation analysis has also shown that there is a strong association between citizens acknowledging that their health largely depends on how well they take care of themselves and citizens knowing how to prevent further problems with their health condition (correlation coefficient = 0.29). In Table 18, a community tiering analysis was performed on the percentage of citizens who reported that they “strongly agree” that their health largely depends on how well they take care of themselves. The 28 community scores range from 41.2% to 60.2%. Community 5 has the greatest potential for improvement as this community has a score that is in Tier 3.

- ⇒ The tiering analysis in Table 18 shows that the low score obtained in the Overall New Brunswick Health Profile<sup>2</sup> for Zone 6 (49.0%) is mostly driven by communities 5, 6 and 7 as these three communities have a score that is either in Tier 2 or Tier 3.
- ⇒ The tiering analysis in Table 18 shows that the low score obtained in the Overall New Brunswick Health Profile<sup>2</sup> for Zone 4 (49.7%) is attributable to all three communities within this zone (1,27,28) as all three of these communities have a score that is in Tier 2.
- ⇒ The tiering analysis in Table 18 shows that the low score obtained in the Overall New Brunswick Health Profile<sup>2</sup> for Zone 5 (49.7%) is attributable both communities within this zone (2,3) as both communities have a score that is in Tier 2.
- ⇒ The tiering analysis in Table 18 shows that the low score obtained in the Overall New Brunswick Health Profile<sup>2</sup> for Zone 7 (50.4%) is attributable both communities within this zone (8,9) as both communities have a score that is in Tier 2.

### 6.3 Screening Tests or Measurements

Several practice guidelines recommend that people who have diabetes, heart disease, stroke or high blood pressure have their blood pressure, cholesterol, body weight and blood sugar measured at least once every 12 months in order to understand care effectiveness and when more action needs to be taken<sup>6</sup>.



**Table 18**      **Personal Responsibility:**  
**Health and Self Care**

Score: Do you strongly agree, agree, disagree or strongly disagree with the following statement: "My health largely depends on how well I take care of myself." (% strongly agree)

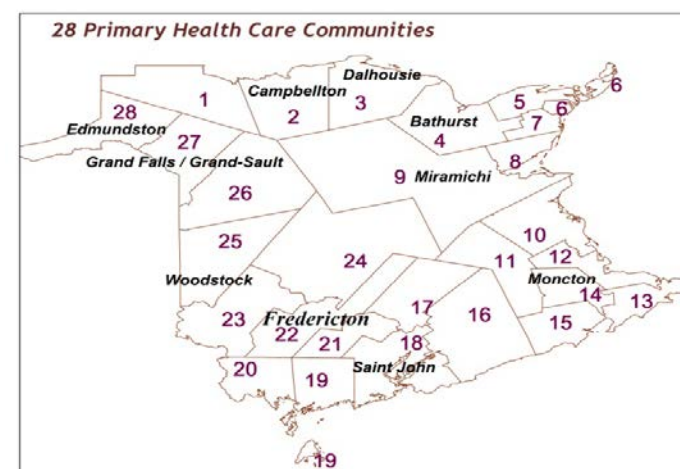
Results within each tier are  
ranked by community score

Community	Sample size	Estimated population	Score	Confidence Interval		Tier
				from	to	
22	901	62,560	60.2%	57.0%	63.4%	1
21	335	13,057	59.6%	54.4%	64.8%	1
24	317	8,670	59.3%	54.0%	64.6%	1
18	2054	93,794	58.6%	56.5%	60.7%	1
14	1506	94,470	58.5%	56.1%	61.0%	1
16	465	17,660	55.6%	51.1%	60.0%	1
13	231	8,820	55.5%	49.2%	61.8%	1
4	620	27,953	55.3%	51.4%	59.1%	1
15	176	4,454	52.7%	45.5%	59.9%	1
17	296	8,157	52.0%	46.4%	57.6%	1
9	836	29,402	52.2%	48.8%	55.5%	2
23	315	9,035	51.4%	46.0%	56.9%	2
27	355	13,208	51.0%	45.9%	56.1%	2
12	629	24,518	50.2%	46.4%	54.1%	2
2	266	10,788	50.0%	44.1%	56.0%	2
10	471	16,217	49.9%	45.4%	54.3%	2
28	568	22,389	49.7%	45.6%	53.7%	2
19	420	9,806	49.6%	44.9%	54.3%	2
3	382	11,823	49.4%	44.5%	54.3%	2
11	188	5,737	48.8%	41.8%	55.8%	2
20	303	11,267	48.7%	43.2%	54.3%	2
26	249	8,025	48.2%	42.1%	54.3%	2
25	609	20,183	46.6%	42.7%	50.5%	2
7	335	11,088	46.3%	41.1%	51.6%	2
1	215	4,750	46.3%	39.8%	52.8%	2
6	354	12,753	45.0%	39.9%	50.1%	2
8	229	6,968	42.7%	36.4%	48.9%	2
5	363	12,405	41.2%	36.3%	46.2%	3

Community with highest score

All communities in Tier 2 have a score that is  
significantly lower than the highest score in Tier 1

Community in Tier 3 has a score that is  
significantly lower than the highest score in Tier 2



New Brunswick  
Health Council

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)  
Confidence interval calculated at a 95% level of confidence

Results of the 2008 Canadian Survey of Experiences With Primary Health Care showed that 23% of adults in Canada had diabetes, heart disease, stroke and/or high blood pressure, while New Brunswick was at 30% and ranked highest among all provinces<sup>6</sup>. In the 2011 NBHC Primary Health Care Survey, citizens were asked if they had the following tests or measurements in the last year: blood pressure, cholesterol, body weight and blood sugar.

The analysis of outcome-related measures such as self-reported screening tests or measurements becomes an important first step in identifying (1) self-reported quality of care indicators that can have a strong influence on health outcomes, and (2) New Brunswick health zones and communities that are delivering the best health outcomes.

In order to compare survey results by community, a tiering analysis is performed and observations are highlighted below for each of the four screening tests. A visual representation of each tiering analysis is shown in Figure 2.

### *Cholesterol*

In New Brunswick, 79.8% of citizens with one or more of four self-reported select chronic conditions (diabetes, heart disease, stroke or high blood pressure) reported having a cholesterol measurement in the last year. A community tiering analysis is given in Table 19, with community scores ranging from 70.2% to 87.4%. When comparing to the highest community score, the two communities in Tier 2 have the greatest potential for improvement.

### *Body weight*

In New Brunswick, 64.3% of citizens with one or more of four self-reported select chronic conditions (diabetes, heart disease, stroke or high blood pressure) reported having a body weight measurement in the last year. A community tiering analysis is given in Table 20, with community scores ranging from 55.5% to 78.9%. When comparing to the highest community score, the 13 communities in Tier 2 have the greatest potential for improvement.

### *Blood Sugar*

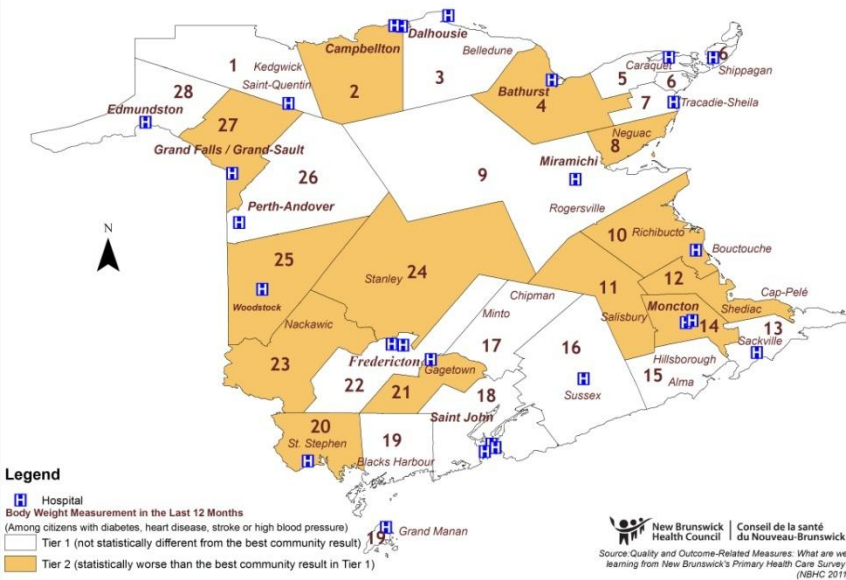
In New Brunswick, 76.6% of citizens with one or more of four self-reported select chronic conditions (diabetes, heart disease, stroke or high blood pressure) reported having a blood sugar measurement in the last year. A community tiering analysis is given in Table 21, with community scores ranging from 64.9% to 94.4%. When comparing to the highest community score, the two communities in Tier 3 have the greatest potential for improvement. Several communities have a score that is significantly lower than the best community score, as 25 of 28 communities have a score that is either in Tier 2 or tier 3.



# Figure 2

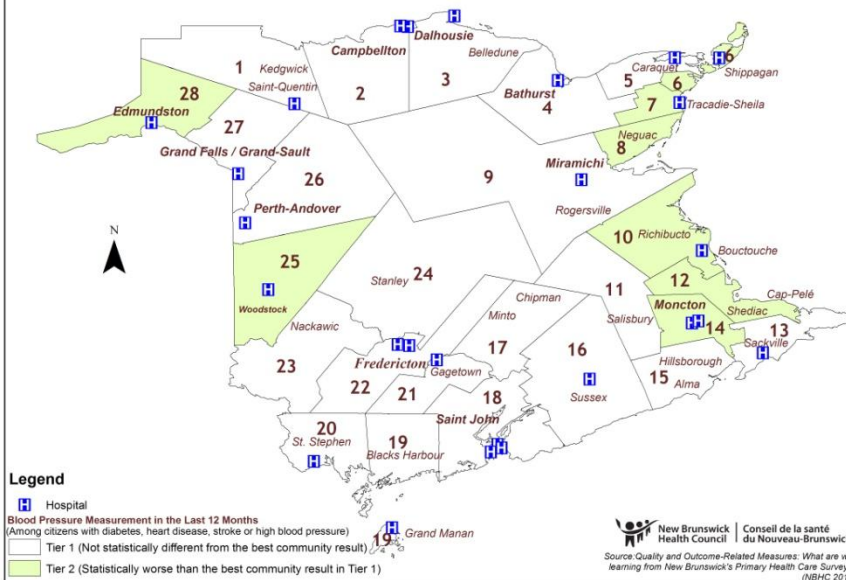
## Body Weight Measurement in the Last 12 Months (self-reported)

Tiering Analysis for the 28 Primary Health Care Communities



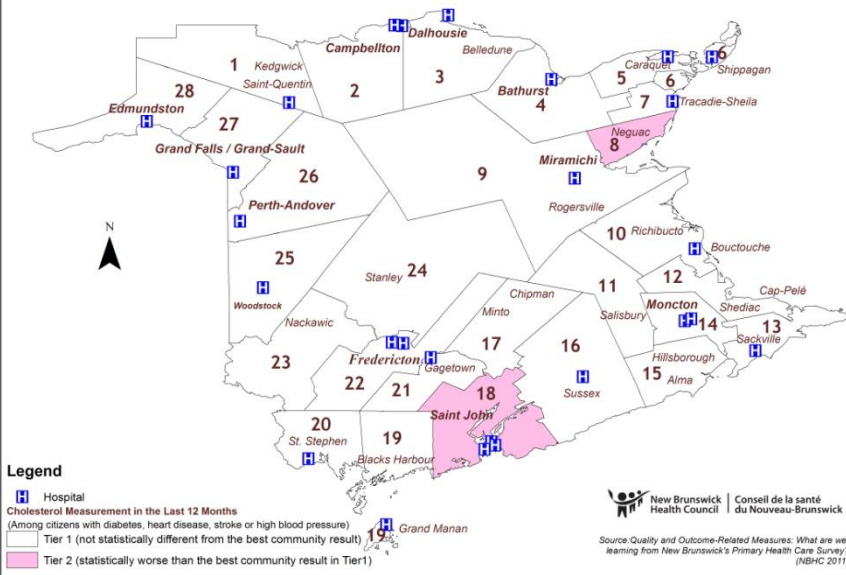
## Blood Pressure Measurement in the Last 12 Months (self-reported)

Tiering Analysis for the 28 Primary Health Care Communities



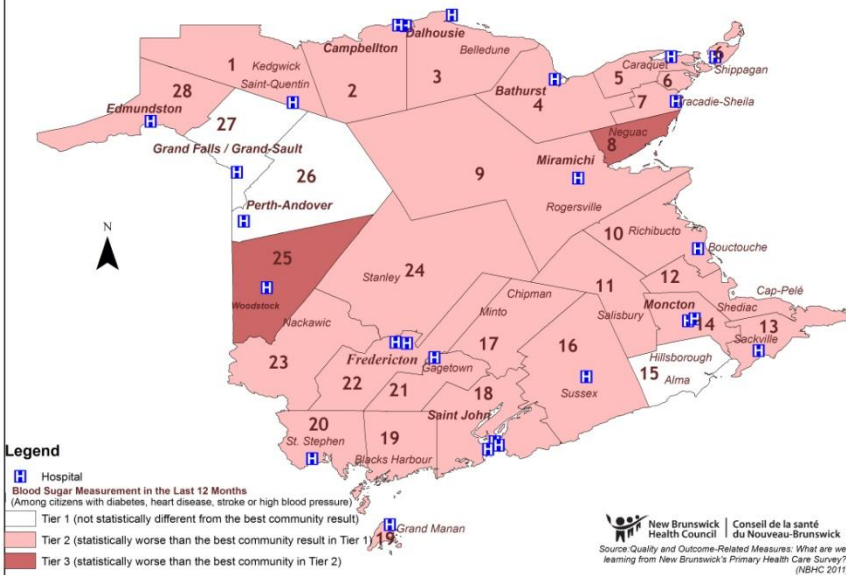
## Cholesterol Measurement in the Last 12 Months (self-reported)

Tiering Analysis for the 28 Primary Health Care Communities



## Blood Sugar Measurement in the Last 12 Months (self-reported)

Tiering Analysis for the 28 Primary Health Care Communities



**Table 19 Outcome-Related Measures:**  
**Cholesterol Measurement in the Last 12 Months**

**Self-Reported Diagnosis:**  
**At least 1 of 4 chronic conditions**

Among citizens with one or more of four select chronic conditions (diabetes, heart disease, stroke, high blood pressure)

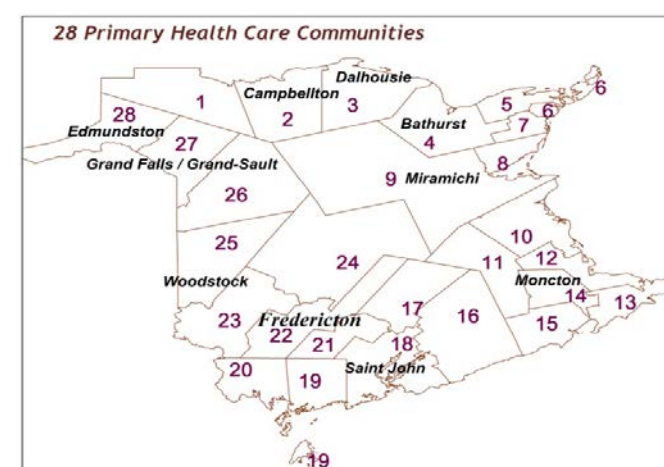
Score: In the past 12 months, did you get the following tests or measurements: Cholesterol measurement (% yes)

Results within each tier are ranked by community score

Community	Sample size	Estimated population	Score	Confidence Interval		Tier
				from	to	
15	72	1,634	87.4%	79.9%	94.9%	1
26	104	2,725	87.0%	80.6%	93.3%	1
5	123	3,721	85.8%	79.7%	91.9%	1
23	126	2,852	84.7%	78.5%	90.8%	1
13	79	2,594	84.1%	76.2%	92.1%	1
4	221	8,714	83.6%	78.8%	88.4%	1
3	162	4,360	83.6%	77.9%	89.2%	1
28	241	7,536	83.5%	78.9%	88.2%	1
16	193	5,729	83.0%	77.8%	88.2%	1
27	138	4,603	82.5%	76.2%	88.7%	1
6	159	5,230	82.3%	76.4%	88.1%	1
10	179	4,964	81.9%	76.3%	87.4%	1
9	320	9,265	81.3%	77.1%	85.5%	1
22	327	18,022	81.3%	77.1%	85.5%	1
21	118	3,391	80.5%	73.5%	87.6%	1
24	136	2,842	79.7%	73.1%	86.3%	1
14	564	28,347	79.7%	76.4%	82.9%	1
19	168	3,245	79.5%	73.6%	85.5%	1
2	120	3,940	78.5%	71.2%	85.7%	1
7	141	4,397	78.1%	71.3%	84.8%	1
20	117	3,344	77.0%	69.6%	84.5%	1
25	224	6,054	76.4%	71.0%	81.9%	1
12	222	7,308	75.1%	69.5%	80.7%	1
1	70	1,237	74.8%	64.9%	84.7%	1
17	126	3,152	73.8%	66.2%	81.3%	1
11	74	1,723	72.4%	62.4%	82.3%	1
18	793	29,056	76.3%	73.4%	79.2%	2
8	94	2,401	70.2%	61.1%	79.2%	2

Community with highest score

All communities in Tier 2 have a score that is significantly lower than the highest score in Tier 1



New Brunswick Health Council

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

Confidence interval calculated at a 95% level of confidence

Table 20

## Outcome-Related Measures: Body Weight Measurement in the Last 12 Months

## Self-Reported Diagnosis: At least 1 of 4 chronic conditions

Among citizens with one or more of four select chronic conditions (diabetes, heart disease, stroke, high blood pressure)

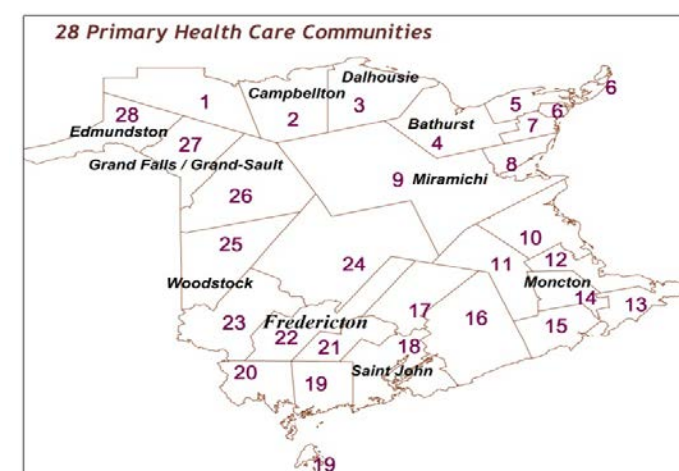
Score: In the past 12 months, did you get the following tests or measurements: Body weight measurement (% yes)

Results within each tier are  
ranked by community score

Community	Sample size	Estimated population	Score	Confidence Interval		Tier
				from	to	
15	73	1,666	78.9%	69.7%	88.0%	1
6	159	5,178	74.5%	67.8%	81.1%	1
13	81	2,658	71.8%	62.1%	81.4%	1
16	194	5,743	69.2%	62.8%	75.6%	1
18	801	29,252	68.7%	65.5%	71.8%	1
9	324	9,436	66.2%	61.1%	71.2%	1
28	240	7,502	66.1%	60.2%	72.0%	1
22	330	18,208	65.9%	60.8%	71.0%	1
26	102	2,655	64.5%	55.4%	73.6%	1
19	172	3,308	64.4%	57.5%	71.4%	1
5	123	3,682	64.0%	55.7%	72.4%	1
1	72	1,284	63.5%	52.7%	74.3%	1
3	164	4,396	63.2%	56.0%	70.5%	1
7	141	4,407	61.9%	54.0%	69.8%	1
17	128	3,189	61.8%	53.5%	70.0%	1
14	571	29,023	62.7%	58.8%	66.6%	2
24	137	2,857	61.6%	53.7%	69.6%	2
25	226	6,116	61.6%	55.3%	67.8%	2
12	222	7,289	60.9%	54.6%	67.2%	2
4	225	8,865	60.9%	54.6%	67.2%	2
20	119	3,393	59.5%	50.8%	68.1%	2
27	141	4,682	59.4%	51.4%	67.4%	2
10	182	5,034	59.1%	52.1%	66.1%	2
2	122	4,003	58.2%	49.5%	66.8%	2
11	76	1,778	57.9%	47.0%	68.8%	2
23	126	2,852	57.7%	49.3%	66.2%	2
21	124	3,546	57.5%	49.0%	66.0%	2
8	93	2,390	55.5%	45.6%	65.4%	2

Community with highest score

All communities in Tier 2 have a score that is  
significantly lower than the highest score in Tier 1



**Table 21**      **Outcome-Related Measures:**      **Self-Reported Diagnosis:**  
**Blood Sugar Measurement in the Last 12 Months**      **At least 1 of 4 chronic conditions**

Among citizens with one or more of four select chronic conditions (diabetes, heart disease, stroke, high blood pressure)

Score: In the past 12 months, did you get the following tests or measurements: Blood sugar measurement (% yes)

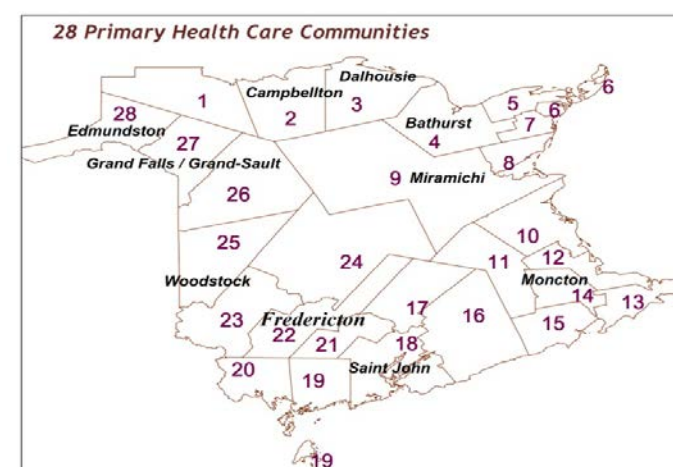
Results within each tier are ranked by community score

Community	Sample size	Estimated population	Score	Confidence Interval		Tier
				from	to	
15	70	1,580	94.4%	89.1%	99.6%	1
27	138	4,578	86.2%	80.5%	91.8%	1
26	104	2,737	83.4%	76.4%	90.4%	1
16	190	5,579	81.9%	76.6%	87.3%	2
22	322	17,780	80.6%	76.3%	84.9%	2
9	320	9,332	80.4%	76.2%	84.7%	2
3	158	4,258	79.2%	73.0%	85.4%	2
6	157	5,154	78.6%	72.3%	84.9%	2
19	169	3,281	77.4%	71.3%	83.6%	2
24	134	2,786	76.8%	69.8%	83.8%	2
20	116	3,321	76.7%	69.1%	84.2%	2
4	223	8,780	76.6%	71.1%	82.1%	2
28	239	7,476	76.6%	71.3%	81.9%	2
14	562	28,520	76.5%	73.1%	80.0%	2
21	121	3,465	75.8%	68.3%	83.3%	2
2	119	3,900	75.3%	67.6%	82.9%	2
18	792	29,001	75.0%	72.1%	78.0%	2
23	123	2,793	74.7%	67.1%	82.2%	2
5	122	3,681	74.3%	66.7%	81.9%	2
10	178	4,953	73.8%	67.5%	80.2%	2
7	137	4,279	73.6%	66.3%	80.8%	2
17	127	3,159	73.6%	66.0%	81.1%	2
12	217	7,133	72.6%	66.8%	78.4%	2
11	73	1,714	71.3%	61.1%	81.4%	2
13	81	2,647	68.5%	58.5%	78.4%	2
1	69	1,221	68.2%	57.5%	78.8%	2
25	219	5,893	68.4%	62.3%	74.4%	3
8	93	2,383	64.9%	55.3%	74.4%	3

Community with highest score

All communities in Tier 2 have a score that is significantly lower than the highest score in Tier 1

All communities in Tier 3 have a score that is significantly lower than the highest score in Tier 2



New Brunswick Health Council

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

Confidence interval calculated at a 95% level of confidence



### **Blood Pressure**

In New Brunswick, 93.3% of citizens with one or more of four self-reported select chronic conditions (diabetes, heart disease, stroke or high blood pressure) reported having a blood pressure measurement in the last year. A community tiering analysis is given in Table 22, with community scores ranging from 85.5% to 98.0%. When comparing to the highest community score, the eight communities in Tier 2 have the greatest potential for improvement.

Among citizens with a self-reported diagnosis for high blood pressure, 94.4% reported having a blood pressure measurement in the last year. A zone tiering analysis is given in Table 23, with health zone scores ranging from 90.7% to 96.1%. Health zones 1 and 4 have the greatest potential for improvement, since these zone scores are in Tier 2.

Table 22

## Outcome-Related Measures: Blood Pressure Measurement in the Last 12 Months

## Self-Reported Diagnosis: At least 1 of 4 chronic conditions

Among citizens with one or more of four select chronic conditions (diabetes, heart disease, stroke, high blood pressure)

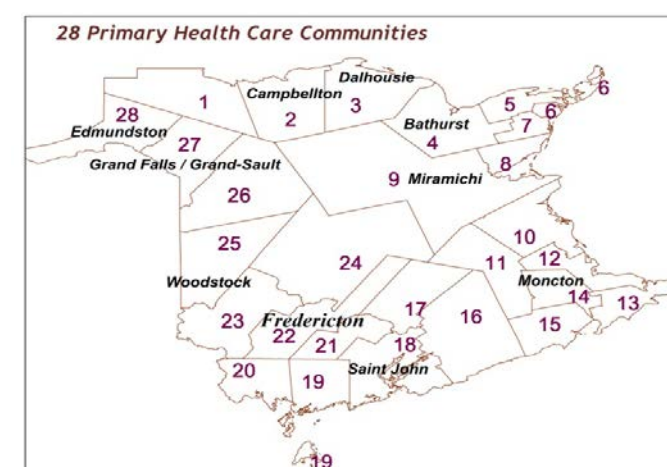
Score: In the past 12 months, did you get the following tests or measurements: Blood pressure measurement (% yes)

Results within each tier are  
ranked by community score

Community	Sample size	Estimated population	Score	Confidence Interval		Tier
				from	to	
16	195	5,774	98.0%	96.1%	99.9%	1
26	106	2,782	98.0%	95.3%	100.0%	1
15	75	1,701	97.9%	94.7%	100.0%	1
17	128	3,189	97.6%	95.0%	100.0%	1
19	175	3,363	97.4%	95.2%	99.7%	1
21	122	3,504	96.7%	93.5%	99.8%	1
9	325	9,469	96.4%	94.3%	98.4%	1
24	136	2,842	96.1%	93.0%	99.3%	1
13	83	2,721	95.9%	91.6%	100.0%	1
22	332	18,289	95.7%	93.5%	97.9%	1
23	127	2,883	95.2%	91.6%	98.9%	1
20	119	3,393	94.7%	90.7%	98.6%	1
18	804	29,403	94.7%	93.1%	96.2%	1
1	72	1,284	94.1%	88.7%	99.4%	1
4	226	8,933	93.8%	90.6%	96.9%	1
11	76	1,778	93.2%	87.6%	98.7%	1
5	125	3,773	93.1%	88.7%	97.5%	1
3	164	4,409	92.9%	89.1%	96.8%	1
2	122	4,003	92.8%	88.3%	97.3%	1
27	140	4,657	91.6%	87.0%	96.1%	1
25	230	6,213	92.7%	89.4%	96.0%	2
14	573	29,111	92.2%	90.0%	94.4%	2
10	181	5,015	90.1%	85.9%	94.4%	2
12	222	7,289	88.6%	84.5%	92.7%	2
8	92	2,365	87.6%	81.0%	94.2%	2
6	160	5,253	87.4%	82.3%	92.5%	2
7	142	4,420	86.0%	80.3%	91.6%	2
28	241	7,531	85.5%	81.1%	89.8%	2

Community with highest score

All communities in Tier 2 have a score that is  
significantly lower than the highest score in Tier 1



Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

Confidence interval calculated at a 95% level of confidence

**Table 23**

**Outcome-Related Measures:**  
Blood Pressure Measurement in the Last 12 Months

**Self-Reported Diagnosis:**  
High Blood Pressure

Among citizens with a self-reported diagnosis for high blood pressure

Score: In the past 12 months, did you get the following tests or measurements: Blood pressure measurement (% yes)

Results within each tier are ranked by zone score

Zone	Sample size	Estimated population	Score	Confidence Interval		Tier
				from	to	
3	946	31,563	96.1%	94.9%	97.3%	1
2	1064	33,880	95.8%	94.6%	97.0%	1
7	361	10,088	94.9%	92.7%	97.1%	1
5	245	7,217	94.8%	92.0%	97.5%	1
6	538	18,083	93.1%	90.9%	95.2%	1
1	976	37,923	93.2%	91.6%	94.8%	2
4	357	10,324	90.7%	87.8%	93.7%	2

Zone with highest score

All zones in Tier 2 have a score that is significantly lower than the highest score in Tier 1

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

Confidence interval calculated at a 95% level of confidence







## 7. Equity Based on Income

Equity can be defined as providing quality care and services to all, regardless of race, color, creed, national origin, ancestry, place of origin, language, age, physical disability, mental disability, marital status, family status, sexual orientation, sex, social status or belief or political activity. Primary health care should be provided in such a way as to reduce differences in health status and outcomes across various subgroups of the population.

In the 2011 NBHC Primary Health Care Survey, citizens were asked to provide their total household income before taxes in 2010. Response options included “less than \$25,000”, “\$25,000 to less than \$60,000” or “\$60,000 or more”. In this report, household income data is used as a proxy for socio-economic status<sup>7</sup>.

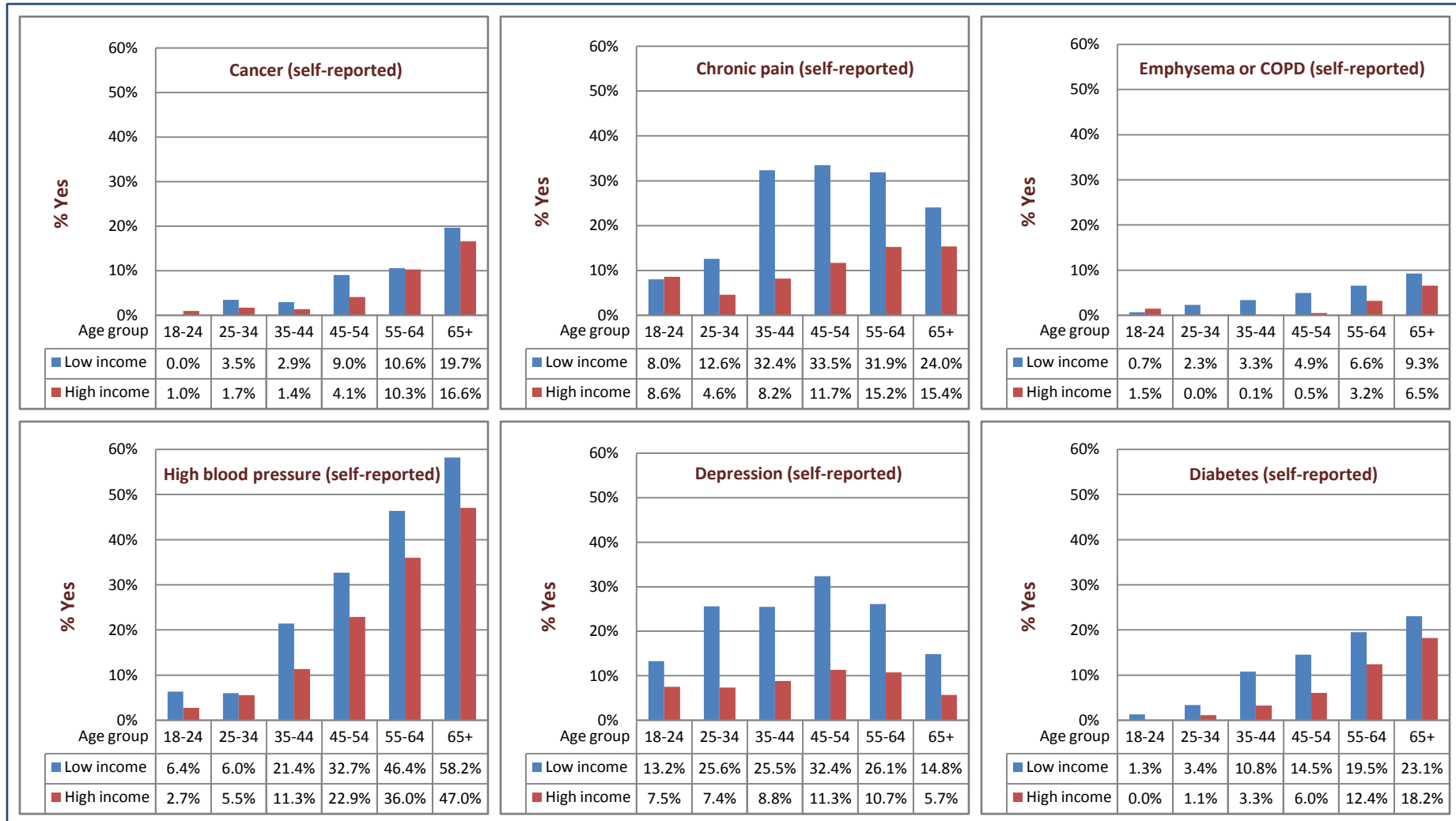
In Figure 3, widespread disparities are observed in New Brunswick by income with respect to self-reported prevalence of chronic conditions, even within specific age groups. Lower income citizens (less than \$25,000) generally have far higher self-reported chronic conditions than those with higher income (\$60,000 or more).

In Figure 4, income gaps are observed with respect to outcome-related measures such as citizens' confidence in controlling and managing their health condition, citizens knowing how to prevent further problems with their health condition, and citizens knowing what their medications do. These outcome-related measures were introduced in sections 6.1 and 6.2.

Overall New Brunswick results as well as similar income analyses performed for each of the seven health zones are given in Appendix E. The data in Appendix E have not been age-adjusted as this information can serve as a basis for needs assessment initiatives, and for trending purposes. The income gap with respect to citizens' confidence in controlling and managing their health condition is less widespread for health zones 2 and 7.

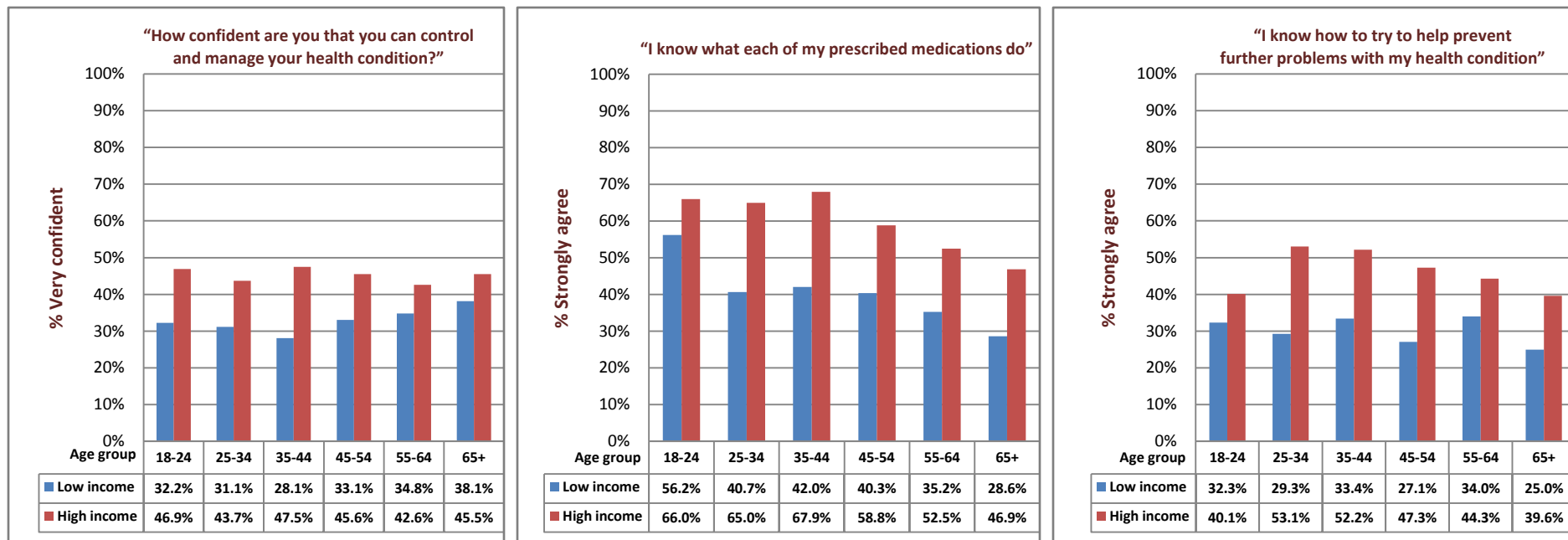
Under accessibility, there are no significant disparities by income with respect to citizens who have a personal family doctor, as seen in Figure 5. Within use of services and health barriers, income gaps are observed with respect to emergency department utilization and the cost for medication.

**Figure 3**  
**Equity Based on Income**  
**Self-Reported Prevalence of Chronic Conditions**



Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

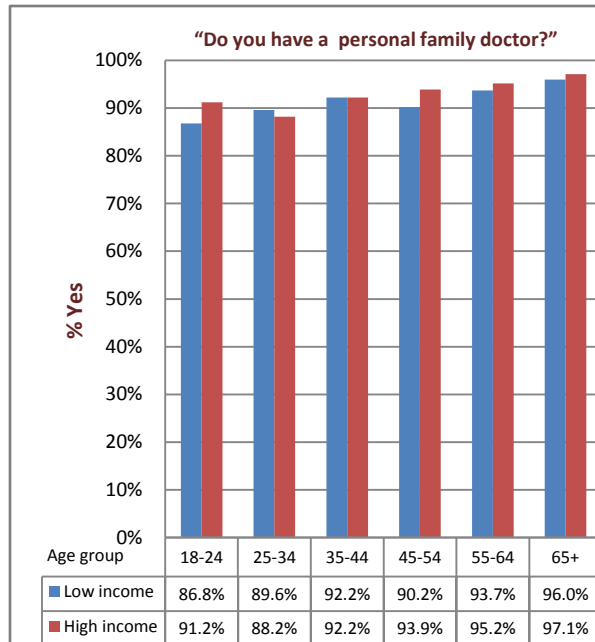
**Figure 4**  
**Equity Based on Income**  
**Citizens' Knowledge About Chronic Conditions**



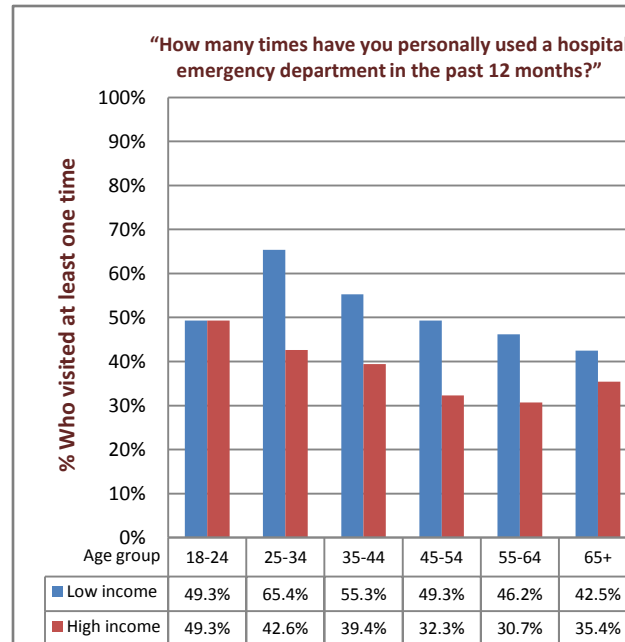
Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

**Figure 5**  
**Equity Based on Income**

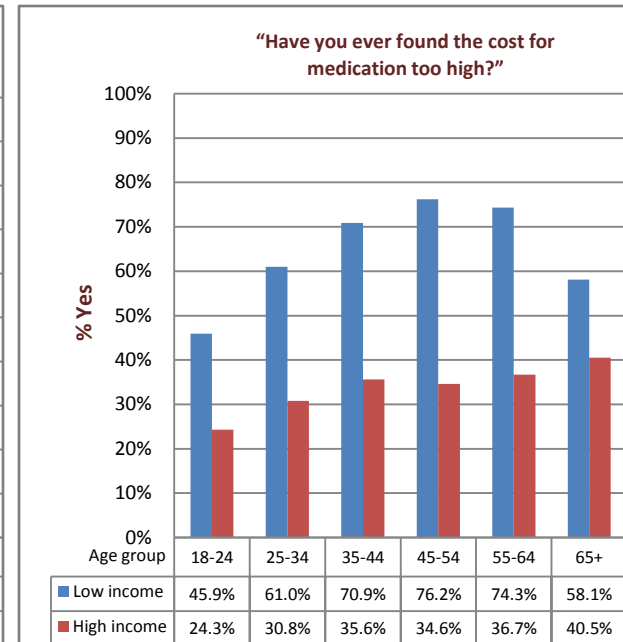
### Accessibility



### Use of services



### Health barrier



Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

## 8. References

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- 2 – The New Brunswick Health Council, *New Brunswickers' Experiences with Primary Health Care, 2011 Survey Results*, (2011), [online], from < [http://www.nbhc.ca/nb\\_primary\\_care\\_health\\_survey.cfm](http://www.nbhc.ca/nb_primary_care_health_survey.cfm) >.
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- 6 – Canadian Institute for Health Information, *Experiences With Primary Health Care in Canada*, Analysis in Brief, (2009), [online], from < [http://secure.cihi.ca/cihiweb/products/cse\\_phc\\_aib\\_en.pdf](http://secure.cihi.ca/cihiweb/products/cse_phc_aib_en.pdf) >.
- 7 – S. Kuhle and P.J. Veugelers, “*Why does the social gradient in health not apply to overweight?*”, Statistics Canada, Catalogue 82-003-XPE, Health Reports 19, 4 (2008): pp 7-15, [online], from < <http://www.statcan.gc.ca/bsolc/olc-cel/olc-cel?catno=82-003-X200800410746&lang=eng> >.



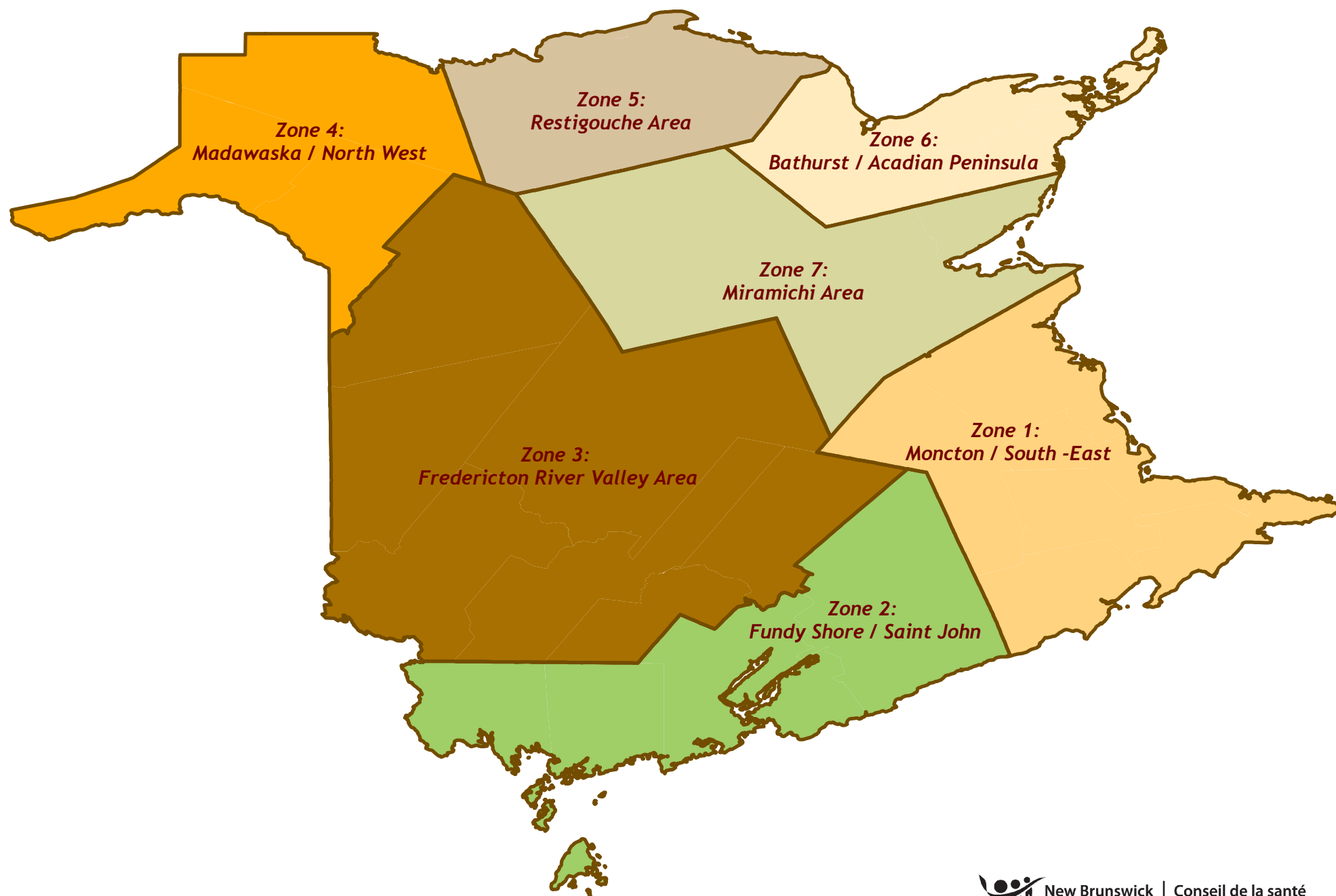
## **Appendix A**

### **Map of 7 New Brunswick Health Zones**





# *New Brunswick 7 Health Zones*



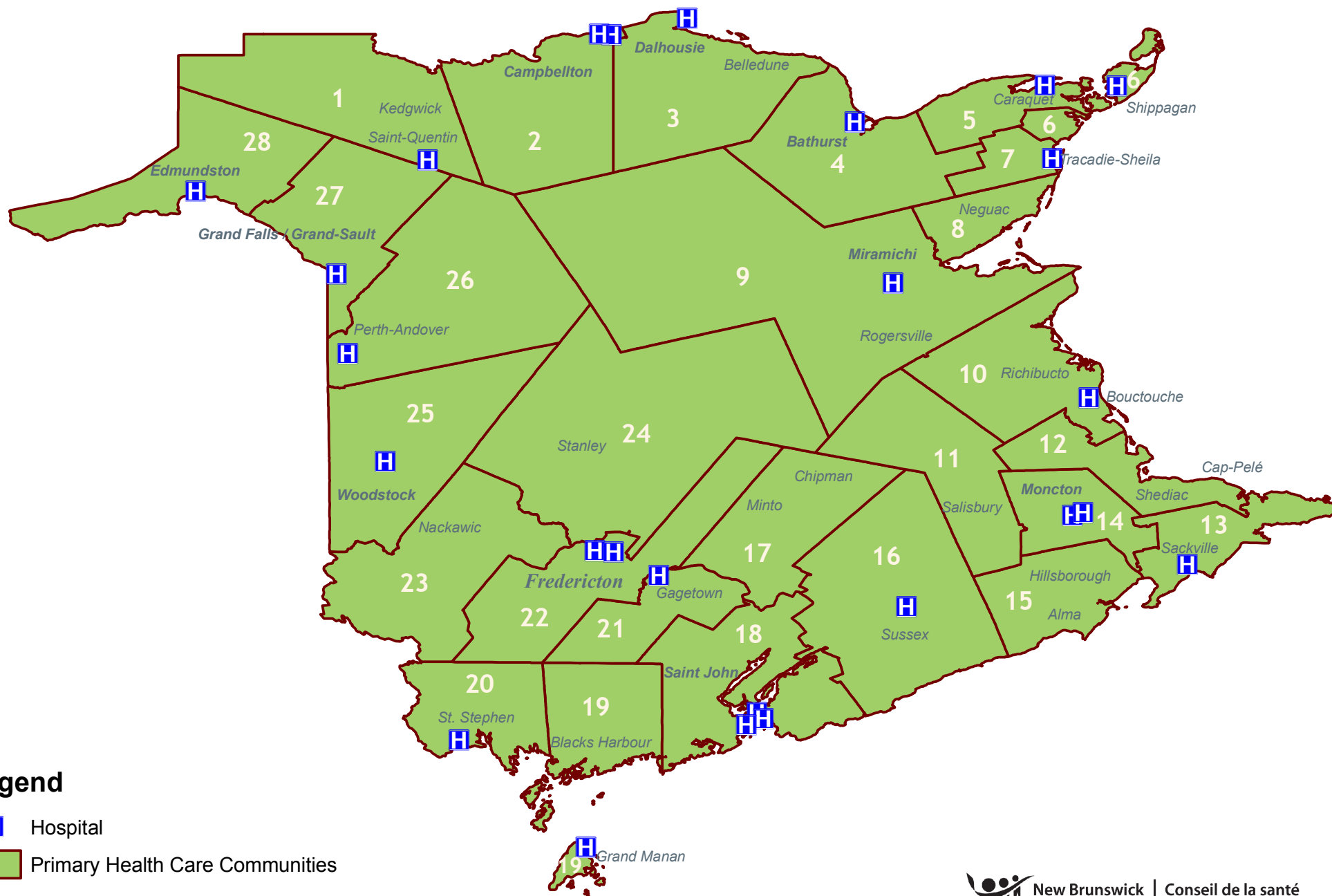


## **Appendix B**

### **Map of 28 New Brunswick Primary Health Care Communities**



# 28 Primary Health Care Communities



## Legend



Hospital



Primary Health Care Communities



New Brunswick  
Health Council

Conseil de la santé  
du Nouveau-Brunswick



## **Appendix C**

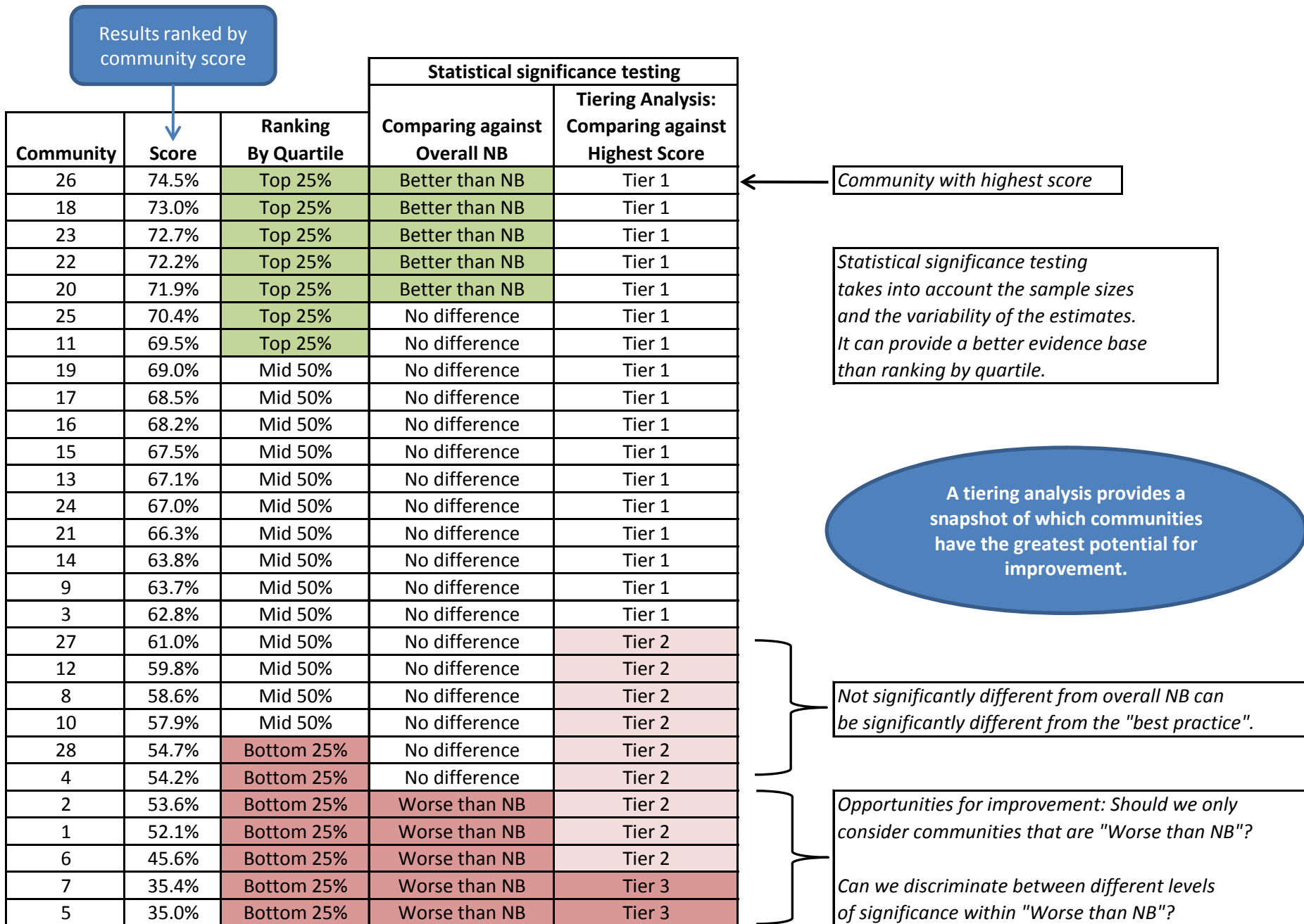
### **Methodology for Tiering Analysis**





## Appendix C - Tiering Analysis Methodology (page 1 of 2)

For illustration purposes only. These are not real scores obtained from the survey.



## Appendix C - Tiering Analysis Methodology (page 2 of 2)

For illustration purposes only. These are not real scores obtained from the survey.

Results within each tier are ranked by community score

Community	Sample size (valid responses)	Estimated population (based on valid responses)	Point estimate (score)	Confidence Interval From	To	Tier
26	215	6,532	74.5%	68.8%	80.2%	1
18	1,608	70,934	73.0%	70.9%	75.2%	1
23	258	6,940	72.7%	67.4%	78.1%	1
22	723	46,970	72.2%	69.0%	75.5%	1
20	252	9,018	71.9%	66.5%	77.4%	1
25	501	15,758	70.4%	66.4%	74.3%	1
11	143	4,202	69.5%	62.1%	76.9%	1
19	315	6,843	69.0%	64.0%	74.0%	1
17	247	6,547	68.5%	62.8%	74.2%	1
16	354	13,270	68.2%	63.4%	73.0%	1
15	134	3,130	67.5%	59.7%	75.2%	1
13	174	6,151	67.1%	60.2%	74.0%	1
24	254	6,624	67.0%	61.3%	72.6%	1
21	249	8,590	66.3%	60.5%	72.1%	1
14	1,155	66,440	63.8%	61.0%	66.5%	2
9	666	21,710	63.7%	60.1%	67.3%	2
3	328	9,945	62.8%	57.6%	67.9%	2
27	306	10,661	61.0%	55.6%	66.4%	2
12	484	17,853	59.8%	55.5%	64.1%	2
8	171	5,124	58.6%	51.4%	65.9%	2
10	381	12,731	57.9%	53.1%	62.8%	2
28	434	15,845	54.7%	50.1%	59.3%	3
4	495	21,347	54.2%	49.8%	58.5%	3
2	214	8,323	53.6%	47.0%	60.2%	3
1	148	2,974	52.1%	44.3%	60.0%	3
6	247	9,218	45.6%	39.5%	51.7%	3
7	267	8,366	45.4%	39.5%	51.3%	3
5	267	8,652	45.0%	39.1%	50.9%	3

Community with highest score

All communities in Tier 2 have a score that is statistically lower than the highest score in Tier 1

### What is a Tiering Analysis?

A tiering analysis is a rough sorting technique that identifies communities with low scores based on evidence-based statistical differences.

### How does it work?

Each community score is compared to the highest score and communities with a significantly lower score are first placed in Tier 2. Each community score in Tier 2 is compared to the highest score within Tier 2 and communities with a significantly lower score are placed in Tier 3. Within each tier, community scores are then sorted from highest to lowest.

All communities in Tier 3 have a score that is statistically lower than the highest score in Tier 2

## **Appendix D**

### **Methodology for Communication and Patient-Centred Care Overall Score**



## Appendix D

### Methodology for Communication and Patient-Centred Care Overall Score

In section 4.2, a map was used as an overall visual representation of the *Communication and Patient-Centred Care Overall Score* (Figure 1). This overall score combines tiering analysis results for three questions in the survey:

- ⇒ “In the last 12 months, how often did your personal family doctor explain your test results in a way that you could understand?”
- ⇒ “In the past 12 months, how often did your personal family doctor involve you in decisions about your health care?”
- ⇒ “In the last 12 months, how often has your personal family doctor given you enough time to discuss your feelings, fears and concerns about your health?”

Tiering analysis results for these three questions are given in tables 7, 8 and 9. For each community, the actual “tiers” are summed across the three survey questions. For example, a community that is in Tier 1 for all three survey questions has a survey score that is never significantly lower than the highest community score. This community has an overall score of  $1+1+1=3$  and is represented by the “highest score” category on the map. A community with an overall score of 7, which is the sum of the three individual survey question tiers (for example  $1+3+3=7$ ), is represented by the “lowest score” category on the map.

Score given in Figure 1	Sum of the 3 individual survey question tiers given in Tables 7, 8 and 9
Highest score	3
High score	4
Medium score	5
Low score	6
Lowest score	7



## **Appendix E**

### **Income Analysis for Overall New Brunswick And By Health Zone**





<b>Chronic Health Conditions (Self-reported)</b>	<b>Low Income (Less than \$25,000) n=2,990</b>	<b>High Income (\$60,000 or more) n=4,687</b>
<b>Arthritis</b>	<b>27.1%</b>	<b>11.3%</b>
<b>Asthma</b>	<b>14.3%</b>	<b>9.3%</b>
<b>Cancer</b>	<b>9.2%</b>	<b>4.5%</b>
<b>Chronic pain</b>	<b>22.8%</b>	<b>10.0%</b>
<b>Depression</b>	<b>20.9%</b>	<b>9.2%</b>
<b>Diabetes</b>	<b>13.4%</b>	<b>5.8%</b>
<b>Emphysema or COPD</b>	<b>5.1%</b>	<b>1.2%</b>
<b>Gastric reflux (GERD)</b>	<b>17.6%</b>	<b>14.4%</b>
<b>Heart disease</b>	<b>12.1%</b>	<b>5.0%</b>
<b>High blood pressure or hypertension</b>	<b>32.7%</b>	<b>19.0%</b>
<b>Mood disorder other than depression</b>	<b>5.4%</b>	<b>1.4%</b>
<b>Stroke</b>	<b>3.8%</b>	<b>0.8%</b>
<b>Citizens' Knowledge About Chronic Conditions</b>	<b>Low Income (Less than \$25,000) n=2,442</b>	<b>High Income (\$60,000 or more) n=2,936</b>
<b>Citizens are confident that they can control and manage their health condition (% very confident)</b>	<b>34.4%</b>	<b>45.3%</b>
<b>Citizens know what their medications do (% strongly agree)</b>	<b>36.2%</b>	<b>58.6%</b>
<b>Citizens know how to prevent further problems with their health condition (% strongly agree)</b>	<b>29.1%</b>	<b>47.4%</b>

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

<b>Chronic Health Conditions (Self-reported)</b>	<b>Low Income (Less than \$25,000) n=633</b>	<b>High Income (\$60,000 or more) n=1,153</b>
<b>Arthritis</b>	<b>25.9%</b>	<b>10.0%</b>
<b>Asthma</b>	<b>12.8%</b>	<b>9.0%</b>
<b>Cancer</b>	<b>9.5%</b>	<b>4.9%</b>
<b>Chronic pain</b>	<b>22.3%</b>	<b>8.8%</b>
<b>Depression</b>	<b>22.3%</b>	<b>10.5%</b>
<b>Diabetes</b>	<b>11.5%</b>	<b>5.9%</b>
<b>Emphysema or COPD</b>	<b>3.7%</b>	<b>1.0%</b>
<b>Gastric reflux (GERD)</b>	<b>16.2%</b>	<b>16.0%</b>
<b>Heart disease</b>	<b>11.0%</b>	<b>5.3%</b>
<b>High blood pressure or hypertension</b>	<b>32.8%</b>	<b>18.8%</b>
<b>Mood disorder other than depression</b>	<b>5.2%</b>	<b>1.1%</b>
<b>Stroke</b>	<b>3.0%</b>	<b>0.8%</b>
<b>Citizens' Knowledge About Chronic Conditions</b>	<b>Low Income (Less than \$25,000) n=526</b>	<b>High Income (\$60,000 or more) n=709</b>
<b>Citizens are confident that they can control and manage their health condition (% very confident)</b>	<b>30.3%</b>	<b>46.2%</b>
<b>Citizens know what their medications do (% strongly agree)</b>	<b>34.5%</b>	<b>57.0%</b>
<b>Citizens know how to prevent further problems with their health condition (% strongly agree)</b>	<b>25.6%</b>	<b>47.5%</b>

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

Chronic Health Conditions (Self-reported)	Low Income (Less than \$25,000) n=552	High Income (\$60,000 or more) n=1,214
Arthritis	30.6%	14.7%
Asthma	18.0%	8.8%
Cancer	9.4%	5.0%
Chronic pain	22.4%	11.3%
Depression	18.8%	7.2%
Diabetes	12.7%	5.8%
Emphysema or COPD	7.0%	1.4%
Gastric reflux (GERD)	15.5%	12.9%
Heart disease	12.5%	5.1%
High blood pressure or hypertension	29.7%	19.5%
Mood disorder other than depression	5.3%	0.9%
Stroke	4.0%	0.7%
Citizens' Knowledge About Chronic Conditions	Low Income (Less than \$25,000) n=468	High Income (\$60,000 or more) n=769
Citizens are confident that they can control and manage their health condition (% very confident)	42.1%	44.5%
Citizens know what their medications do (% strongly agree)	49.2%	65.3%
Citizens know how to prevent further problems with their health condition (% strongly agree)	37.2%	48.9%

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

Chronic Health Conditions (Self-reported)	Low Income (Less than \$25,000) n=547	High Income (\$60,000 or more) n=1,114
Arthritis	30.5%	11.0%
Asthma	11.4%	11.3%
Cancer	10.0%	4.0%
Chronic pain	26.3%	10.4%
Depression	24.3%	9.9%
Diabetes	15.1%	6.0%
Emphysema or COPD	5.5%	1.2%
Gastric reflux (GERD)	22.8%	14.6%
Heart disease	13.8%	4.5%
High blood pressure or hypertension	31.0%	18.1%
Mood disorder other than depression	5.4%	2.2%
Stroke	4.3%	0.9%
Citizens' Knowledge About Chronic Conditions	Low Income (Less than \$25,000) n=455	High Income (\$60,000 or more) n=721
Citizens are confident that they can control and manage their health condition (% very confident)	33.9%	46.4%
Citizens know what their medications do (% strongly agree)	41.7%	61.9%
Citizens know how to prevent further problems with their health condition (% strongly agree)	35.1%	49.3%

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

<b>Chronic Health Conditions (Self-reported)</b>	<b>Low Income (Less than \$25,000) n=322</b>	<b>High Income (\$60,000 or more) n=291</b>
<b>Arthritis</b>	<b>24.6%</b>	<b>9.7%</b>
<b>Asthma</b>	<b>9.8%</b>	<b>5.6%</b>
<b>Cancer</b>	<b>7.0%</b>	<b>5.1%</b>
<b>Chronic pain</b>	<b>26.2%</b>	<b>11.1%</b>
<b>Depression</b>	<b>21.9%</b>	<b>5.9%</b>
<b>Diabetes</b>	<b>11.5%</b>	<b>5.5%</b>
<b>Emphysema or COPD</b>	<b>5.5%</b>	<b>2.2%</b>
<b>Gastric reflux (GERD)</b>	<b>16.7%</b>	<b>12.8%</b>
<b>Heart disease</b>	<b>15.5%</b>	<b>6.1%</b>
<b>High blood pressure or hypertension</b>	<b>32.9%</b>	<b>18.5%</b>
<b>Mood disorder other than depression</b>	<b>7.3%</b>	<b>0.4%</b>
<b>Stroke</b>	<b>4.3%</b>	<b>0.7%</b>
<b>Citizens' Knowledge About Chronic Conditions</b>	<b>Low Income (Less than \$25,000) n=252</b>	<b>High Income (\$60,000 or more) n=173</b>
<b>Citizens are confident that they can control and manage their health condition (% very confident)</b>	<b>33.5%</b>	<b>43.2%</b>
<b>Citizens know what their medications do (% strongly agree)</b>	<b>23.2%</b>	<b>52.0%</b>
<b>Citizens know how to prevent further problems with their health condition (% strongly agree)</b>	<b>19.9%</b>	<b>35.1%</b>

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

<b>Chronic Health Conditions (Self-reported)</b>	<b>Low Income (Less than \$25,000) n=184</b>	<b>High Income (\$60,000 or more) n=167</b>
<b>Arthritis</b>	<b>26.7%</b>	<b>13.0%</b>
<b>Asthma</b>	<b>15.9%</b>	<b>5.2%</b>
<b>Cancer</b>	<b>8.2%</b>	<b>3.5%</b>
<b>Chronic pain</b>	<b>28.5%</b>	<b>9.2%</b>
<b>Depression</b>	<b>25.2%</b>	<b>8.4%</b>
<b>Diabetes</b>	<b>15.9%</b>	<b>5.2%</b>
<b>Emphysema or COPD</b>	<b>5.8%</b>	<b>0.9%</b>
<b>Gastric reflux (GERD)</b>	<b>23.6%</b>	<b>14.3%</b>
<b>Heart disease</b>	<b>11.3%</b>	<b>4.6%</b>
<b>High blood pressure or hypertension</b>	<b>37.2%</b>	<b>19.4%</b>
<b>Mood disorder other than depression</b>	<b>10.1%</b>	<b>0.7%</b>
<b>Stroke</b>	<b>6.5%</b>	<b>0.0%</b>
<b>Citizens' Knowledge About Chronic Conditions</b>	<b>Low Income (Less than \$25,000) n=150</b>	<b>High Income (\$60,000 or more) n=105</b>
<b>Citizens are confident that they can control and manage their health condition (% very confident)</b>	<b>28.6%</b>	<b>42.2%</b>
<b>Citizens know what their medications do (% strongly agree)</b>	<b>35.0%</b>	<b>47.9%</b>
<b>Citizens know how to prevent further problems with their health condition (% strongly agree)</b>	<b>25.7%</b>	<b>52.4%</b>

*Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)*

Chronic Health Conditions (Self-reported)	Low Income (Less than \$25,000) n=493	High Income (\$60,000 or more) n=455
Arthritis	25.0%	8.5%
Asthma	18.4%	10.2%
Cancer	9.3%	3.4%
Chronic pain	18.8%	9.8%
Depression	17.4%	10.6%
Diabetes	13.8%	5.3%
Emphysema or COPD	3.7%	1.5%
Gastric reflux (GERD)	15.1%	14.4%
Heart disease	9.0%	5.3%
High blood pressure or hypertension	34.8%	20.2%
Mood disorder other than depression	3.4%	1.8%
Stroke	3.0%	0.9%
Citizens' Knowledge About Chronic Conditions	Low Income (Less than \$25,000) n=391	High Income (\$60,000 or more) n=285
Citizens are confident that they can control and manage their health condition (% very confident)	35.0%	47.6%
Citizens know what their medications do (% strongly agree)	24.2%	45.1%
Citizens know how to prevent further problems with their health condition (% strongly agree)	26.3%	42.6%

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)

<b>Chronic Health Conditions (Self-reported)</b>	<b>Low Income (Less than \$25,000) n=259</b>	<b>High Income (\$60,000 or more) n=293</b>
<b>Arthritis</b>	<b>22.0%</b>	<b>9.0%</b>
<b>Asthma</b>	<b>12.0%</b>	<b>8.0%</b>
<b>Cancer</b>	<b>9.2%</b>	<b>5.0%</b>
<b>Chronic pain</b>	<b>17.2%</b>	<b>8.1%</b>
<b>Depression</b>	<b>16.1%</b>	<b>9.0%</b>
<b>Diabetes</b>	<b>16.5%</b>	<b>6.3%</b>
<b>Emphysema or COPD</b>	<b>5.6%</b>	<b>0.6%</b>
<b>Gastric reflux (GERD)</b>	<b>17.4%</b>	<b>13.8%</b>
<b>Heart disease</b>	<b>12.9%</b>	<b>4.2%</b>
<b>High blood pressure or hypertension</b>	<b>36.3%</b>	<b>20.3%</b>
<b>Mood disorder other than depression</b>	<b>5.2%</b>	<b>1.0%</b>
<b>Stroke</b>	<b>4.3%</b>	<b>0.9%</b>
<b>Citizens' Knowledge About Chronic Conditions</b>	<b>Low Income (Less than \$25,000) n=200</b>	<b>High Income (\$60,000 or more) n=174</b>
<b>Citizens are confident that they can control and manage their health condition (% very confident)</b>	<b>33.1%</b>	<b>36.5%</b>
<b>Citizens know what their medications do (% strongly agree)</b>	<b>37.7%</b>	<b>52.6%</b>
<b>Citizens know how to prevent further problems with their health condition (% strongly agree)</b>	<b>24.7%</b>	<b>48.0%</b>

Source: Quality and Outcome-Related Measures: What Are We Learning from New Brunswick's Primary Health Care Survey? (NBHC 2011)